SECTION I FALL ARREST ROOF ANCHORS



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WHAT IT TAKES TO BE THALER OR EQUAL

When specifications read Thaler or Equal, it is the responsibility of specifiers and building owners to determine what it means to be "Or Equal". The following data has been presented to quickly help assess the comparative merits of "competitive" products. Thaler Fall Arrest Roof Anchors (FARA) products have a number of Value Added features that should be considered when trying to equate the "Or Equal".

CHECK THE COMPETITION	THALER Added F	VALUE FEATURES
X		Strongest fall arrest anchors available; anchors are designed to resist without fracture pull-out force of 5400 lbs (24.03 kN), applied in the most adverse direction. Test reports available upon request.
X		Provides best roof penetration protection; roof anchors are supplied with CSA Approved flashings as tested to CSA B272-93. Flashings utilize Thaler patented EPDM seals which eliminate flashing maintenance. Note: Thaler have been manufacturing flashings, anchors, roof supports and roof drains for the roofing industry in North America for over 30 years.
X		Condensation free; Anchor post is filled with injection molded urethane insulation which adheres to inner walls without air pockets (CGSB 51-GP 46MP); provides corrosion protection while adding to product durability.
X		Versatile Design; roof anchors are available with more eye options, flashing options, fastening options and different levels of structural performance than any other anchor product available on the market today.
X		Non-Standard Anchors; Thaler provide elongated and "beefed-up" anchors to accommodate sloped insulation or lightweight concrete fill and/or custom applications.
X		\$ 7,000,000.00 liability insurance; anchor integrity is backed by \$ 3,000,000.00 Commercial General Liability and \$ 4,000,000.00 Umbrella Liability.
X		Meets all applicable standards; conforms to all Canadian and United States standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations (including flashing standards).
X		Samples immediately upon request; supplied without charge to qualified prospects with the provision that they be returned upon completion of evaluation. Construction professionals and building owners are urged to examine samples before making a specifying/purchasing decision; Thaler quality always wins the day.
X		20 year warranty; guaranteed against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions".
X		Maintenance-Free (annual inspection excepted); roof anchors are equipped with Thaler pre-formed metal flashings that never need caulking (CSA B272-93). EPDM seals with "memory" provide constant pressure to outside of anchor posts to prevent leaks and condensation build-up; see Thaler EPDM Flashing Seals literature and STACK JACK Flashings literature.
X		Incorporates air barrier principles; roof anchors employing through deck installation, such as steel deck over OWSJ, are protected against air leakage by the EPDM flashing seals; see Thaler EPDM Flashing Seals literature. Aesthetically pleasing; arguably the best looking roof anchor products available on the market today. Clean assembly without messy caulking or flashing seals.
X		Complete material disclosure; all material thicknesses, dimensions, grades, finishes and other relevant product information is indicated on data sheets and in specifications.
X		100% Re-useable flashing; can be completely dismantled and re-used when re-roofing.
X		Competent sales and design approach; in the fall protection business Thaler proudly provides optimum, economical fall protection systems.
X		Written "Installation Instructions"; provided with every Thaler product.



THALER



FARA-1/-11/-11U/ FALL ARREST ROOF ANCHORS (Bolt-Through) PATENTED NOTE: REFER TO PAGES I-34, I-35, I-36 FOR NON-STANDARD HEIGHT ANCHORS

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, Thaler FARA-1/-11/-11U Fall Arrest Roof Anchors are installed by through-bolting the anchor to the structural concrete roof deck as per Thaler layout drawings, using a recommended tightening torque of 125 ft-lbf (169 Nm), deforming the exposed bolt threads at both ends, then placing the flashing sleeve over the anchor and roof membrane, and as follows

BUR: Set flashing deck flange in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set flashing flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer. Do not overheat (melt) EPDM base seal.

Single Ply: Set deck flange in layer of membrane adhesive and extend single ply up sleeve to highest elevation possible and clamp membrane to STACK JACK Flashing. Note: for PVC membrane, specify PVC coated STACK JACK by adding suffix P to end of model number e.g. FARA-1-A-P; weld roofing to deck flange using PVC torch.

Precautions: Apply an asphaltic or other type protective coating to aluminum STACK JACK Flashing to a height of 2" (51 mm) above a limestone ballast to avoid corrosive reaction. Also, if coating deck flange with bituminous paint on site, allow 24 hours for drying before applying roof membrane

Ordering and Availability: Specify flashing material required by adding appropriate suffix to model number e.g. FARA-1-A, for aluminum, etc. Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock. Note: The FARA-11 stainless steel forged eye has a galvanized finish over top of the stainless steel. The process of galvanizing the lower part of the anchor requires the entire anchor to be dipped in the zinc bath, thereby covering the stainless steel eye. If there is any question about product received on site, the eye material may be checked with a magnet. Type 304 stainless steel is non-magnetic.

ROOF SPECIALTIES FARA-1/-11/-11U "FIXED EYE" **FALL ARREST ROOF** ANCHORS (Bolt-Through)

DESCRIPTION:

Thaler FARA bolt-through anchors consist of a urethane insulated hollow steel post (HSS) with base plate, single stainless steel bolt for securing to concrete roof slab, and flashing sleeve. The top of the anchor is available with three different options:

- 1. With very high strength, galvanized forged eye (FARA-1). All stainless steel (FARA-11SS).
- 2. With very high strength, stainless steel forged eye (FARA-11). All stainless steel (FARA-11SS).
- 3. With high strength stainless steel U Bolt eye
- (FARA-11U). All stainless steel (FARA-11USS).

PROMINENT FEATURES:

Condensation free and maintenance free (attractive, neat flashing never needs caulking; see Thaler EPDM Flashing Seals literature). Anchor integrity is backed by \$7,000,000.00 liability insurance

OPTIONS:

All stainless steel anchor, PVC coated flashing deck flange for PVC roof membrane. Bituminous painted flashing deck flange for BUR and ModBit roof membrane. See other Thaler FARA models for different securements.

RECOMMENDED USE:

Suitable for all flat roofs as fall arrest anchors for securing workers' lifelines or the tying back of suspended access equipment such as outrigger beams and parapet wall clamps. Also suitable for suspension of boatswain chair.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC, AWS, and other references. Thaler SJ-34 New-Standard STACK JACK Flashing conforms to CSA B272-93. See separate Thaler FARA Systems Fall Protection literature for specific data.

WARRANTY:

20 year warranty (lifetime on all stainless steel) against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler anchors require no maintenance (maintenance free).

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest roof anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors)

SPECIFICATION (SHORT FORM):

Fall arrest roof anchors: Thaler [FARA -1 with galvanized forged 1018 steel eye] [FARA-11 with Type 304 stainless steel forged eye] [FARA-11U with Type 304 stainless steel U bolt] roof anchor to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: urethane insulated, hollow, hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) 44W base plate: single 1" (25 mm) Type 304 s.s. bolt with EPDM weather seal, top nut and washer, and Type 304 s.s. 1/4" x 4" x 4" (6 mm x 102 mm x 102 mm) underdeck plate, lock washer and nut; SJ-34(9), 9" (229 mm) high New-Standard STACK JACK Flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [bituminous painted deck flange] [PVC coated deck flange]; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against leaks. condensation and defects in materials and/or manufacture.



FARA-2/-12/-12U FALL ARREST ROOF ANCHORS (Adhesive Bolt) PATENTED NOTE: REFER TO PAGES I-34, I-35, I-36 FOR NON-STANDARD HEIGHT ANCHORS

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, Thaler FARA-2/-12/-12U anchors are installed by adhesive bolting (as per bolt manufacturer's instructions) the anchor to the structural concrete roof deck as per layout drawings, then placing the flashing sleeve over the anchor and roof membrane, and as follows:

BUR: Set flashing deck flange in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set flashing flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer. Do not overheat (melt) EPDM base seal.

Single Ply: Set deck flange in layer of membrane adhesive and extend single ply up sleeve to highest elevation possible and clamp membrane to STACK JACK Flashing. Note: for PVC membrane, specify PVC coated STACK JACK by adding suffix P to end of model number e.g. FARA-2-A-P; weld roofing to deck flange using PVC torch.

Precautions: Apply an asphaltic or other type protective coating to aluminum STACK JACK Flashing to a height of 2" (51 mm) above a limestone ballast to avoid corrosive reaction. Also, if coating deck flange with bituminous paint on site, allow 24 hours for drying before applying roof membrane.

Ordering and Availability: Specify flashing material required by adding appropriate suffix to model number e.g. FARA-2-A, for aluminum, etc. Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock. Note: The FARA-12 stainless steel forged eye has a galvanized finish over top of the stainless steel. The process of galvanizing the lower part of the anchor requires the entire anchor to be dipped in the zinc bath, thereby covering the stainless steel eye. If there is any question about product received on site, the eye material may be checked with a magnet. Type 304 stainless steel is non-magnetic.

ROOF SPECIALTIES FARA-2/-12/-12U "FIXED EYE" FALL ARREST ROOF **ANCHORS** (Adhesive Bolt)

DESCRIPTION:

Thaler FARA adhesive bolt anchors consist of a urethane insulated hollow steel post (HSS) with base plate for securing to concrete roof slab using adhesive anchor bolts, and flashing sleeve. The top of the anchor is available with three different eve options

- 1. With very high strength, galvanized forged eye (FARA-2). All stainless steel (FARA-12SS).
- 2. With very high strength stainless steel forged eye (FARA-12). All stainless steel (FARA-12SS).
- 3. With high strength stainless steel U Bolt
- (FARA-12U). All stainless steel (FARA-12USS).

PROMINENT FEATURES:

Condensation and maintenance free (attractive, neat flashing never needs caulking; see Thaler EPDM Flashing Seals literature). Anchor integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS:

All stainless steel anchor, PVC coated flashing deck flange for PVC roof membrane. Bituminous painted flashing deck flange for BUR and ModBit roof membrane. See other Thaler FARA models for different securements.

RECOMMENDED USE:

Suitable for all flat roofs as fall arrest anchors for securing workers' lifelines or the tying back of suspended access equipment such as outrigger beams and parapet wall clamps. Also suitable for suspension of boatswain chair.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC, AWS, and other references. Thaler SJ-34(9) New-Standard STACK JACK Flashing conforms to CSA B272-93. See separate Thaler FARA Systems Fall Protection literature for specific data.

WARRANTY:

20 year warranty (lifetime on all stainless steel) against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler anchors require no maintenance (maintenance free)

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest roof anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors)

SPECIFICATION (SHORT FORM):

Fall arrest roof anchors: Thaler [FARA -2 with galvanized forged 1018 steel eye] [FARA-12 with Type 304 stainless steel forged eye] [FARA-12U with Type 304 stainless steel U bolt] roof anchor to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: urethane insulated, hollow, hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness > 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) 44W base plate prepared to receive four 5/8" (16 mm) dia. adhesive anchor bolts (by others); SJ-34(9), 9" (229 mm) high New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [bituminous painted deck flange] [PVC coated deck flange]; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or

1-800-576-1200 (New Brau-nfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against leaks, condensation and defects in materials and/or manufacture.



FARA-3/-13/-13U FALL ARREST ROOF ANCHORS (Bolt Around Beam) PATENTED

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, Thaler FARA-3/-13/-13U anchors are installed by bolting the anchor around a structural beam as per layout drawings, using a recommended tightening torque of 75 ft-lbf (100 Nm), then placing the flashing sleeve over the anchor and roof membrane, and as follows:

BUR: Set flashing deck flange in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set flashing flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer. Do not overheat (melt) EPDM base seal.

Single Ply: Set deck flange in layer of membrane adhesive and extend single ply up sleeve to highest elevation possible and clamp membrane to STACKJACK Flashing. Note: for PVC membrane, specify PVC coated STACKJACK by adding suffix P to end of model number e.g. FARA-3-A-P; weld roofing to deck flange using PVC torch.

Precautions: Apply an asphaltic or other type protective coating to aluminum STACKJACK Flashing to a height of 2" (51 mm) above a limestone ballast to avoid corrosive reaction. Also, if coating deck flange with bituminous paint on site, allow 24 hours for drying before applying roof membrane.

Ordering and Availability: Specify flashing material required by adding appropriate suffix to model number e.g. FARA-3-A, for aluminum, etc. Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock. Note: The FARA-13 stainless steel forged eye has a galvanized finish over top of the stainless steel. The process of galvanizing the lower part of the anchor requires the entire anchor to be dipped in the zinc bath, thereby covering the stainless steel eye. If there is any question about product received on site, the eye material may be checked with a magnet. Type 304 stainless steel is non-magnetic.

ROOF SPECIALTIES FARA-3/-13/-13U "FIXED EYE" FALL ARREST ROOF ANCHORS (Bolt Around Beam)

DESCRIPTION:

Thaler FARA bolt around beam anchors consist of a urethane insulated hollow steel post (HSS) with base plate, four stainless steel bolts and under-beam plate for securing to a steel beam, and flashing sleeve. The top of the anchor is available with three different eye options:

- 1. With very high strength, galvanized forged eye (FARA-3). All stainless steel (FARA-13SS).
- 2. With very high strength, stainless steel forged eye (FARA-13). All stainless steel (FARA-13SS).
- 3. With high strength, stainless steel U Bolt
- (FARA-13U). All stainless steel (FARA-13USS).

PROMINENT FEATURES:

Condensation free and maintenance free (attractive, neat flashing never needs caulking; see Thaler EPDM Flashing Seals literature). Anchor integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS:

All stainless steel, PVC coated flashing deck flange for PVC roof membrane. Bituminous painted flashing deck flange for BUR and ModBit roof membrane. See other Thaler FARA models for different securements.

RECOMMENDED USE:

Suitable for all flat roofs as fall arrest anchors for securing workers' lifelines or the tying back of suspended access equipment such as outrigger beams and parapet wall clamps. Also suitable for suspension of boatswain chair.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC, AWS, and other references. Thaler SJ-37(9), New-Standard STACKJACK Flashing conforms to CSA B272-93. See separate Thaler FARA Systems Fall Protection literature for specific data.

WARRANTY:

20 year warranty (lifetime on all stainless steel) against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler anchors require no maintenance (maintenance free).

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

Fall arrest roof anchors: Thaler [FARA-3 with galvanized forged 1018 steel eye] [FARA-13 with Type 304 stainless steel forged eye] [FARA-13U with Type 304 stainless steel U bolt] roof anchor to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: urethane insulated, hollow, hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) 44W base plate; Four 5/8" (16 mm) Type 304 s.s. bolts and 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) under-beam plate, lock washers and nuts; SJ-37(9), 9" (229 mm) high New-Standard STACKJACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [bituminous painted deck flange] [PVC coated deck flange]; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against leaks, condensation and defects in materials and/or manufacture



FARA-4/-14/-14U FALL ARREST ROOF ANCHORS (Weldable) PATENTED NOTE: REFER TO PAGES I-34, I-35, I-36 FOR NON-STANDARD HEIGHT ANCHORS

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, Thaler FARA-4/-14/-14U anchors are installed by welding the anchor to a structural beam as per layout drawings, then placing the flashing sleeve over the anchor and roof membrane, and as follows:

BUR: Set flashing deck flange in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set flashing flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer. Do not overheat (melt) EPDM base seal

Single Ply: Set deck flange in layer of membrane adhesive and extend single ply up sleeve to highest elevation possible and clamp membrane to STACK JACK Flashing. Note: for PVC membrane, specify PVC coated STACK JACK by adding suffix P to end of model number e.g. FARA-4-A-P; weld roofing to deck flange using PVC torch.

Precautions: Apply an asphaltic or other type protective coating to aluminum STACK JACK Flashing to a height of 2" (51 mm) above a limestone ballast to avoid corrosive reaction. Also, if coating deck flange with bituminous paint on site, allow 24 hours for drying before applying roof membrane

Ordering and Availability: Specify flashing material required by adding appropriate suffix to model number e.g. FARA-4-A, for aluminum, etc. Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock. Note: The FARA-14 stainless steel forged eye has a galvanized finish over top of the stainless steel. The process of galvanizing the lower part of the anchor requires the entire anchor to be dipped in the zinc bath, thereby covering the stainless steel eye. If there is any question about product received on site, the eye material may be checked with a magnet. Type 304 stainless steel is non-magnetic

ROOF SPECIALTIES FARA-4/-14/-14U "FIXED EYE" **FALL ARREST ROOF** ANCHORS (Weldable)

DESCRIPTION:

Thaler FARA weldable anchors consist of a urethane insulated hollow steel post (HSS) and base plate, and flashing sleeve. The top of the anchor is available with three different eye options

- 1. With very high strength, galvanized forged eye (FARA-4). All stainless steel (FARA-14SS).
- 2. With very high strength, stainless steel forged eye (FARA-14). All stainless steel (FARA-14SS)
- 3. With very high strength, stainless steel U Bolt eye (FARA-14U). All stainless steel (FARA-14USS).

PROMINENT FEATURES:

Condensation and maintenance free (attractive, neat flashing never needs caulking; see Thaler EPDM Flashing Seals literature). Anchor integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS:

All stainless steel anchor, PVC coated flashing deck flange for PVC roof membrane. Bituminous painted flashing deck flange for BUR and ModBit roof membrane. See other Thaler FARA models for different securements.

RECOMMENDED USE:

Suitable for all flat roofs as fall arrest anchors for securing workers' lifelines or the tying back of suspended access equipment such as outrigger beams and parapet wall clamps Also suitable for suspension of boatswain chair.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC , AWS, and other references. Thaler SJ-37 New-Standard STACK JACK Flashing conforms to CSA B272-93. See Thaler FARA Systems Fall Protection literature for specific data.

WARRANTY:

20 year warranty (lifetime on all stainless steel) against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler anchors require no maintenance (maintenance free).

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest roof anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

Fall arrest roof anchors: Thaler [FARA-4 with galvanized forged 1018 steel eye] [FARA-14 with Type 304 stainless steel forged eye] [FARA-14U with Type 304 stainless steel U bolt] roof anchor to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: urethane insulated hollow hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 5" x 5" (16 mm x 127 mm x 127 mm) 44W base plate; 5 J-37, 7" (178 mm) high New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [bituminous painted deck flange] [PVC coated deck flange]; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against leaks, condensation and defects in materials and/or manufacture.



FARA-5/-15/-15U FALL ARREST ROOF ANCHORS (Cast-In-Place) PATENTED NOTE: REFER TO PAGES I-34, I-35, I-36 FOR NON-STANDARD HEIGHT ANCHORS

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, Thaler FARA-5/-15/ anchors are installed by casting the anchor into the structural concrete roof deck as per layout drawings, using a maximum torque of 125 ft.-lbf. (169 Nm), deforming the exposed bolt threads, then placing the flashing sleeve over the anchor and roof membrane, and as follows:

BUR: Set flashing deck flange in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set flashing flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer. Do not overheat (melt) EPDM base seal.

Single Ply: Set deck flange in layer of membrane adhesive and extend single ply up sleeve to highest elevation possible and clamp membrane to STACK JACK Flashing. Note: for PVC membrane, specify PVC coated STACK JACK by adding suffix P to end of model number e.g. FARA-5-A-P; weld roofing to deck flange using PVC torch.

Precautions: Apply an asphaltic or other type protective coating to aluminum STACK JACK Flashing to a height of 2" (51 mm) above a limestone ballast to avoid corrosive reaction. Also, if coating deck flange with bituminous paint on site, allow 24 hours for drying before applying roof membrane.

Ordering and Availability: Specify flashing material required by adding appropriate suffix to model number e.g. FARA-5-A, for aluminum, etc. Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock. Note: The FARA-15 stainless steel forged eye has a galvanized finish over top of the stainless steel. The process of galvanizing the lower part of the anchor requires the entire anchor to be dipped in the zinc bath, thereby covering the stainless steel eye. If there is any question about product received on site, the eye material may be checked with a magnet. Type 304 stainless steel is non-magnetic.

ROOF SPECIALTIES FARA-5/-15/-15U "FIXED EYE" FALL ARREST ROOF ANCHORS (Cast-In-Place)

DESCRIPTION:

Thaler FARA cast-in-place anchors consist of a urethane insulated hollow steel post (HSS) with base plate, single stainless steel bolt for securing to concrete roof slab, and flashing sleeve. The top of the anchor is available with three different eye options:

- 1. With very high strength, galvanized forged eye (FARA-5). All stainless steel (FARA-15SS).
- 2. With very high strength, stainless steel forged eye (FARA-15). All stainless steel (FARA-15SS).
- 3. With high strength, stainless steel U Bolt
- (FARA-15U). All stainless steel (FARA-15USS).

PROMINENT FEATURES:

Condensation free and maintenance free (attractive, neat flashing never needs caulking; see Thaler EPDM Flashing Seals literature). Anchor integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS:

All stainless steel, PVC coated flashing deck flange for PVC roof membrane. Bituminous painted flashing deck flange for BUR and ModBit roof membrane. See other Thaler FARA models for different securements.

RECOMMENDED USE:

Suitable for all flat roofs as fall arrest anchors for securing workers' lifelines or the tying back of suspended access equipment such as outrigger beams and parapet wall clamps. Also suitable for suspension of boatswain chair.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC, AWS, and other references. Thaler SJ-34(9) New-Standard STACK JACK Flashing conforms to CSA B272-93. See Thaler FARA Systems Fall Protection literature for specific data.

WARRANTY:

20 year warranty (lifetime on all stainless steel) against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler anchors require no maintenance (maintenance free).

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

Fall arrest roof anchors: Thaler [FARA-5 with galvanized forged 1018 steel eye] [FARA-15 with Type 304 stainless steel forged eye] [FARA-15U with Type 304 stainless steel U bolt] roof anchor to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: urethane insulated hollow hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness > 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) 44W base plate; single 1" (25 mm) Type 304 s.s. anchor bolt with EPDM weather seal, top nut and washer; 1" (25 mm) s.s. washer; SJ-34(9), 9" (229 mm) high New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [bituminous painted deck flange] [PVC coated deck flange]; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against leaks, condensation and defects in materials and/or manufacture.



FARA-6/-16/-16U FALL ARREST ROOF ANCHORS (Bolt Around OWSJ)

PATENTED NOTE: REFER TO PAGES I-34, I-35, I-36 FOR NON-STANDARD HEIGHT ANCHORS

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, Thaler FARA-6/-16/-16U anchors are installed by bolting the anchor to the top chord of the OWSJ as per layout drawings, using a recommended tightening torque of 75 ft-lbf (100Nm), reinforcing the base plates with a crosstube, then placing the flashing sleeve over the anchor and roof membrane, and as follows:

BUR: Set flashing deck flange in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set flashing flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer. Do not overheat (melt) EPDM base seal.

Single Ply: Set deck flange in layer of membrane adhesive and extend single ply up sleeve to highest elevation possible and clamp membrane to STACK JACK Flashing. Note: for PVC membrane, specify PVC coated STACK JACK by adding suffix P to end of model number e.g. FARA-6-A-P; weld roofing to deck flange using PVC torch.

Precautions: Apply an asphaltic or other type protective coating to aluminum STACK JACK Flashing to a height of 2" (51 mm) above a limestone ballast to avoid corrosive reaction. Also, if coating deck flange with bituminous paint on site, allow 24 hours for drying before applying roof membrane.

Ordering and Availability: Specify flashing material required by adding appropriate suffix to model number e.g. FARA-6-A, for aluminum, etc. Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock. Note: The FARA-16 stainless steel forged eye has a galvanized finish over top of the stainless steel. The process of galvanizing the lower part of the anchor requires the entire anchor to be dipped in the zinc bath, thereby covering the stainless steel eye. If there is any question about product received on site, the eye material may be checked with a magnet. Type 304 stainless steel is non-magnetic.

ROOF SPECIALTIES FARA-6/-16/-16U "FIXED EYE" FALL ARREST ROOF ANCHORS (Bolt Around OWSJ)

DESCRIPTION:

Thaler FARA bolt around OWSJ anchors consist of a urethane insulated hollow steel post (HSS) with base plate, four stainless steel bolts and under-joist plate, and cross tube (supplied by others) for securing to an OWSJ, and flashing sleeve. The top of the anchor is available with three different eye options:

- 1. With very high strength, galvanized forged eye (FARA-6). All stainless steel (FARA-16SS).
- With very high strength, stainless steel forged eye (FARA-16). All stainless steel (FARA-16SS).
- 3. With high strength, stainless steel U Bolt (FARA-16U). All stainless steel (FARA-16USS).

PROMINENT FEATURES:

Condensation free and maintenance free (attractive, neat flashing never needs caulking; see Thaler EPDM Flashing Seals literature). Anchor integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS:

All stainless steel, PVC coated flashing deck flange for PVC roof membrane. Bituminous painted flashing deck flange for BUR and ModBit roof membrane. See other Thaler FARA models for different securements.

RECOMMENDED USE:

Suitable for all flat roofs as fall arrest anchors for securing workers' lifelines or the tying back of suspended access equipment such as outrigger beams and parapet wall clamps. Also suitable for suspension of boatswain chair.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC, AWS, and other references. Thaler SJ-37 New-Standard STACK JACK Flashing conforms to CSA B272-93. See Thaler FARA Systems Fall Protection literature for specific data.

WARRANTY:

20 year warranty (lifetime on all stainless steel) against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler anchors require no maintenance (maintenance free).

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

Fall arrest roof anchors: Thaler [FARA-6 with galvanized forged 1018 steel eye] [FARA-16 with Type 304 stainless steel forged eye] [FARA-16U with Type 304 stainless steel U bolt] roof anchor to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: urethane insulated hollow hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) 44W base plate; 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) under-joist plate, and 1/4" x 4" x 4" (6 mm x 102 mm x 102 mm) HSS cross tube (supplied by others); assembly; four 5/8" (16 mm) Type 304 s.s. bolts with lock washers and nuts; SJ-37, 7" (178 mm) high New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [bituminous painted deck flange] [PVC coated deck flange]; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture



FARA-7/-17/-17U FALL ARREST ROOF ANCHORS (Pre-Cast-Core-Bolt)

PATENTED NOTE: REFER TO PAGES I-34, I-35, I-36 FOR NON-STANDARD HEIGHT ANCHORS

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, Thaler FARA-7/-17/-17U anchors are installed by grouting the anchor bolt and core slab plate into the structural concrete core slab roof deck joints as per layout drawings, deforming the bolt threads at both ends, using a recommended tightening torque of 125 lbf (169 Nm), then placing the flashing sleeve over the anchor and roof membrane, and as follows:

BUR: Set flashing deck flange in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set flashing flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer. Do not overheat (melt) EPDM base seal.

Single Ply: Set deck flange in layer of membrane adhesive and extend single ply up sleeve to highest elevation possible and clamp membrane to STACK JACK Flashing. Note: for PVC membrane, specify PVC coated STACK JACK by adding suffix P to end of model number e.g. FARA-7-A-P; weld roofing to deck flange using PVC torch.

Precautions: Apply an asphaltic or other type protective coating to aluminum STACK JACK Flashing to a height of 2" (51 mm) above a limestone ballast to avoid corrosive reaction. Also, if coating deck flange with bituminous paint on site, allow 24 hours for drying before applying roof membrane.

Ordering and Availability: Specify flashing material required by adding appropriate suffix to model number e.g. FARA-7-A, for aluminum, etc. Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock. Note: The FARA-17 stainless steel forged eye has a galvanized finish over top of the stainless steel. The process of galvanizing the lower part of the anchor requires the entire anchor to be dipped in the zinc bath, thereby covering the stainless steel eye. If there is any question about product received on site, the eye material may be checked with a magnet. Type 304 stainless steel is non-magnetic.

ROOF SPECIALTIES FARA-7/-17/-17U "FIXED EYE" FALL ARREST ROOF ANCHORS (Pre-Cast Core Bolt)

DESCRIPTION:

Thaler FARA pre-cast core bolt anchors consist of a urethane insulated hollow steel post (HSS) single stainless steel bolt and core plate for securing to pre-cast concrete roof slab, and flashing sleeve. The top of the anchor is available with three different eye options:

- With very high strength, galvanized forged eye (FARA-7). All stainless steel (FARA-17SS).
- 2. With very high strength, stainless steel forged eye (FARA-17). All stainless steel (FARA-17SS).
- 3. With high strength, stainless steel U Bolt
- (FARA-17U). All stainless steel (FARA-17USS).

PROMINENT FEATURES:

Condensation free and maintenance free (attractive, neat flashing never needs caulking; see Thaler EPDM Flashing Seals literature). Anchor integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS:

All stainless steel, PVC coated flashing deck flange for PVC roof membrane. Bituminous painted flashing deck flange for BUR and ModBit roof membrane. See other Thaler FARA models for different securements.

RECOMMENDED USE:

Suitable for all flat roofs as fall arrest anchors for securing workers' lifelines or the tying back of suspended access equipment such as outrigger beams and parapet wall clamps. Also suitable for suspension of boatswain chair.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC, AWS, and other references. Thaler SJ-34(9) New-Standard STACK JACK Flashing conforms to CSA B272-93. See Thaler FARA Systems Fall Protection literature for specific data.

WARRANTY:

20 year warranty (lifetime on all stainless steel) against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler anchors require no maintenance (maintenance free).

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

Fall arrest roof anchors: Thaler [FARA-7 with galvanized forged 1018 steel eye] [FARA-17 with Type 304 stainless steel forged eye] [FARA-17U with Type 304 stainless steel U bolt] roof anchor to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: urethane insulated, hollow, hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 10" x 10" (16 mm x 254 mm x 254 mm) 44W base plate; single 1" (25 mm) Type 304 s.s. bolt with EPDM weather seal, top nut and washer; galvanized 5/8" x 4" x 12" (16 mm x 102 mm x 305 mm) core slab plate, lock washer and nut SJ-34(9), 9" (229 mm) high New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [bituminous painted deck flange] [PVC coated deck flange]; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture.



FARA-31/-41/-41U FALL ARREST ROOF ANCHORS (Bolt Through) PATENTED NOTE: REFER TO PAGES I-34, I-35, I-36 FOR NON-STANDARD HEIGHT ANCHORS

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, Thaler FARA-31/-41/-41U anchors are installed by through-bolting the anchor to the structural concrete roof deck as per layout drawings, using a recommended tightening torque of 125 ft-lbf (169 Nm), deforming the exposed lower bolt threads and installing a cotter pin through the upper exposed bolt threads, then placing the flashing sleeve over the anchor and roof membrane, installing the cap and as follows:

BUR: Set flashing deck flange in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set flashing flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer. Do not overheat (melt) EPDM base seal.

Single Ply: Set deck flange in layer of membrane adhesive and extend single ply up sleeve to top of anchor underneath the cap. Note: for PVC membrane, specify PVC coated STACK JACK by adding suffix P to end of model number e.g. FARA-3-A-P; weld roofing to deck flange using PVC torch.

Precautions: Apply an asphaltic or other type protective coating to aluminum STACK JACK Flashing to a height of 2" (51 mm) above a limestone ballast to avoid corrosive reaction. Also, if coating deck flange with bituminous paint on site, allow 24 hours for drying before applying roof membrane

Ordering and Availability: Specify flashing material required by adding appropriate suffix to model number e.g. FARA-31-A, for aluminum, etc. Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock

ROOF SPECIALTIES FARA-31/-41/-41U "SWIVEL EYE" **FALL ARREST** ROOF ANCHORS (Bolt-Through)

DESCRIPTION:

Thaler FARA bolt-through anchors consist of a urethane insulated hollow steel post (HSS) with base plate, single stainless steel bolt and under-deck plate for securing to concrete roof slab, flashing sleeve, and stainless steel cap assembly. The top of the anchor is available with three different eve options:

- 1. With very high strength, galvanized forged eye (FARA-31). All stainless steel (FARA-41SS).
- With very high strength stainless steel forged eye (FARA-41). All stainless steel (FARA-41SS).
- With high strength stainless steel U Bolt (FARA-41U). All stainless steel (FARA041USS)

PROMINENT FEATURES:

Condensation free and maintenance free (attractive, neat flashing never needs caulking; see Thaler EPDM Flashing Seals literature). Anchor integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS:

All stainless steel, PVC coated flashing deck flange for PVC roof membrane. Bituminous painted flashing deck flange for BUR and ModBit roof membrane. See other Thaler FARA models for different securements.

RECOMMENDED USE:

Suitable for all flat roofs as fall arrest anchors for securing workers' lifelines or the tying back of suspended access equipment such as outrigger beams and parapet wall clamps. Also suitable for suspension of boatswain chair. Ideal for re-roofing.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC, AWS, and other references. Thaler STACK JACK Flashing conforms to CSA B272-93. See Thaler FARA Systems Fall Protection literature for specific data.

WARRANTY:

20 year warranty (lifetime on all stainless steel) against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler anchors require no maintenance (maintenance free)

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

Fall arrest roof anchors: Thaler [FARA-31 with galvanized forged 1018 steel eye] [FARA-41 with Type 304 stainless steel forged eye] [FARA-41U with Type 304 stainless steel U bolt] swivel eye roof anchor with Type 304 s.s. cap assembly to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with urethane insulated hollow hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) 44W base plate; single 1" (25 mm) Type 304 s.s. bolt with EPDM weather seal, top nut and washer, s.s. cotter pin; Type 304 s.s. 1/4" x 4" x 4" (6 mm x 102 mm x 102 mm) under- deck plate, lock washer and nut; manufacturer's standard flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with Base Seal and [bituminous painted deck flange] [PVC coated deck flange]; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture







FARA-32/-42/-42U FALL ARREST ROOF ANCHORS (Adhesive Bolt) PATENTED NOTE: REFER TO PAGES I-34, I-35, I-36 FOR NON-STANDARD HEIGHT ANCHORS

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, Thaler FARA-32/-42/-42U anchors are installed by adhesive bolting (as per bolt manufacturer's instruction) the anchor to the structural concrete roof deck as per layout drawings, then placing the flashing sleeve over the anchor and roof membrane, installing the cap and cotter pin, and as follows:

BUR: Set flashing deck flange in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set flashing flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer. Do not overheat (melt) EPDM base seal.

Single Ply: Set deck flange in layer of membrane adhesive and extend single ply up sleeve to top of anchor underneath the cap. Note: for PVC membrane, specify PVC coated STACK JACK by adding suffix P to end of model number e.g. FARA-32-A-P; weld roofing to deck flange using PVC torch.

Precautions: Apply an asphaltic or other type protective coating to exposed aluminum STACK JACK Flashing to a height of 2" (51 mm) above a limestone ballast to avoid corrosive reaction. Also, if coating deck flange with bituminous paint on site, allow 24 hours for drying before applying roof membrane.

Ordering and Availability: Specify flashing material required by adding appropriate suffix to model number e.g. FARA-32-A, for aluminum, etc. Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock.

ROOF SPECIALTIES FARA-32/-42/-42U "SWIVEL EYE" FALL ARREST ROOF ANCHORS (Adhesive Bolt)

DESCRIPTION:

Thaler FARA adhesive bolt anchors consist of a urethane insulated hollow steel post (HSS) with base plate for securing to concrete roof slab using adhesive anchor bolts, flashing sleeve, and stainless steel cap assembly. The top of the anchor is available with three different eye options: 1. With yerv high strength, calvanized forged eve

- (FARA-32). All stainless steel (FARA-42SS).
- 2. With very high strength, stainless steel forged eye (FARA-42). All stainless steel (FARA-42SS).
- With high strength stainless steel U Bolt (Fara-42U). All stainless steel (FARA-42USS).

PROMINENT FEATURES:

Condensation free and maintenance free (attractive, neat flashing never needs caulking; see Thaler EPDM Flashing Seals literature). Anchor integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS:

All stainless steel, PVC coated flashing deck flange for PVC roof membrane. Bituminous painted flashing deck flange for BUR and ModBit roof membrane. See other Thaler FARA models for different securements.

RECOMMENDED USE:

Suitable for all flat roofs as fall arrest anchors for securing workers' lifelines or the tying back of suspended access equipment such as outrigger beams and parapet wall clamps. Also suitable for suspension of boatswain chair. Ideal for re-roofing.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformances include CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC, AWS, and other references. Thaler STACK JACK Flashing conforms to CSA B272-93. See Thaler FARA Systems Fall Protection literature for specific data.

WARRANTY:

20 year warranty (lifetime on all stainless steel) against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler anchors require no maintenance (maintenance free).

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

Fall arrest roof anchors: Thaler [FARA-32 with galvanized forged 1018 steel eye] [FARA-42 with Type 304 stainless steel forged eye] [FARA-42U with Type 304 stainless steel U bolt] roof anchor with Type 304 s.s. cap assembly to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: EPDM weather seal, top nut, washer, s.s. cotter pin; urethane insulated, hollow, hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) 44W base plate prepared to receive four 5/8" (16 mm) dia. adhesive anchor bolts (by others); manufacturer's standard flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz.copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Base Seal [and] [bituminous painted deck flange] [PVC coated deck flange]; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture



FARA-33/-43/-43U FALL ARREST ROOF ANCHORS (Bolt Around Beam)

PATENTED NOTE: REFER TO PAGES I-34, I-35, I-36 FOR NON-STANDARD HEIGHT ANCHORS

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, Thaler FARA-33/-43/-43U anchors are installed by bolting the anchor around a structural beam as per layout drawings, [bolt torque should not exceed 75 lbs-ft. (100 Nm) for 5/8" (16 mm) bolt and 125 lbf-ft. (169 Nm) for 1" (25 mm) bolt] then placing the flashing sleeve over the anchor and roof membrane, installing the cap and cotter pin, and as follows:

BUR: Set flashing deck flange in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set flashing flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer. Do not overheat (melt) EPDM base seal.

Single Ply: Set deck flange in layer of membrane adhesive and extend single ply up sleeve to top pf anchor underneath the cap. Note: for PVC membrane, specify PVC coated STACKJACK by adding suffix P to end of model number e.g. FARA-33-A-P; weld roofing to deck flange using PVC torch.

Precautions: Apply an asphaltic or other type protective coating to exposed aluminum STACKJACK Flashing to a height of 2" (51 mm) above a limestone ballast to avoid corrosive reaction. Also, if coating deck flange with bituminous paint on site, allow 24 hours for drying before applying roof membrane.

Ordering and Availability: Specify flashing material required by adding appropriate suffix to model number e.g. FARA-33-A, for aluminum, etc. Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock.

ROOF SPECIALTIES FARA-33/-43/-43U "SWIVEL EYE" FALL ARREST ROOF ANCHORS (Bolt Around Beam)

DESCRIPTION:

Thaler FARA bolt around beam anchors consist of a urethane insulated hollow steel post (HSS) with base plate, four stainless steel bolts and under-beam plate for securing to a steel beam, flashing sleeve, and stainless steel cap assembly. The top of the anchor is available with three different eye options:

- 1. With very high strength, galvanized forged eye (FARA-33). All stainless steel (FARA-43SS).
- With very high strength, stainless steel forged eye (EADA 42) All stainless steel forged eye
- (FARA-43). All stainless steel (FARA-43SS).
 With high strength, stainless steel U Bolt (Fara-43U). All stainless steel (FARA-43USS).

PROMINENT FEATURES:

Swivel eye follows direction of line attachment. Re-usable. Condensation and maintenance free (attractive, neat flashing never needs caulking; see Thaler EPDM Flashing Seals literature). Anchor integrity is backed by \$5,000,000.00 liability insurance.

OPTIONS:

All stainless steel anchor, PVC coated flashing deck flange for PVC roof membrane. Bituminous painted flashing deck flange for BUR and ModBit roof membrane. See other Thaler FARA models for different securements.

RECOMMENDED USE:

Suitable for all flat roofs as fall arrest anchors for securing workers' lifelines or the tying back of suspended access equipment such as outrigger beams and parapet wall clamps.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC AWS, and other references. Thaler STACKJACK Flashing conforms to CSA B272-93. See Thaler FARA Systems Fall Protection literature for specific data.

WARRANTY:

20 year warranty (lifetime on all stainless steel) against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler anchors require no maintenance (maintenance free).

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

Fall arrest roof anchors: Thaler [FARA-33 with galvanized forged 1018 steel eye] [FARA-43 with Type 304 stainless steel forged eye] [FARA-43U with Type 304 stainless steel U bolt] roof anchor with Type 304 s.s. cap assembly to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: EPDM weather seal, top nut, washer, s.s. cotter pin; urethane insulated, hollow, hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) 44W base plate; four 5/8" (16 mm) Type 304 s.s. bolts, 44W 5/8" x 8" x 8" (16 mm x 203 x 203) under-beam plate, lock washers, and nuts; manufacturer's standard flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, EPDM Base Seal and [bituminous painted deck flange] [PVC coated deck flange]; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture.





FARA-34/-44/-44U FALL ARREST ROOF ANCHORS (Weldable)

PATENTED NOTE: REFER TO PAGES I-34, I-35, I-36 FOR NON-STANDARD HEIGHT ANCHORS

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, Thaler FARA-34/-44/-44U anchors are installed by welding the anchor to a structural beam as per layout drawings, using a maximum torque of 125 lbf-ft. (169 Nm), then placing the flashing sleeve over the anchor and roof membrane, installing the cap and cotter pin, and as follows:

BUR: Set flashing deck flange in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set flashing flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer. Do not overheat (melt) EPDM base seal.

Single Ply: Set deck flange in layer of membrane adhesive and extend single ply up sleeve to top of anchor underneath the cap. Note: for PVC membrane, specify PVC coated STACK JACK by adding suffix P to end of model number e.g. FARA-34-A-P; weld roofing to deck flange using PVC torch.

Precautions: Apply an asphaltic or other type protective coating to exposed aluminum STACK JACK Flashing to a height of 2" (51 mm) above a limestone ballast to avoid corrosive reaction. Also, if coating deck flange with bituminous paint on site, allow 24 hours for drying before applying roof membrane.

Ordering and Availability: Specify flashing material required by adding appropriate suffix to model number e.g. FARA-34-A, for aluminum, etc. Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock.

ROOF SPECIALTIES FARA-34/-44/-44U "SWIVEL EYE" FALL ARREST ROOF ANCHORS (Weldable)

DESCRIPTION:

Thaler FARA weldable anchors consist of a urethane insulated hollow steel post (HSS) and base plate, flashing sleeve, and stainless steel cap assembly. The top of the anchor is available with three different eye options: 1. With very high strength, galvanized forged eye

- (FARA-43). All stainless steel (FARA-44SS).
 With very high strength, stainless steel forged eye
- (FARA-44). All stainless steel (FARA-44SS).
- 3. With high strength, stainless steel U Bolt (Fara-44U). All stainless steel (FARA-44USS)

PROMINENT FEATURES:

Swivel eye follows direction of line attachment. Re-usable. Condensation and maintenance free (attractive, neat flashing never needs caulking; see Thaler EPDM Flashing Seals literature). Anchor integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS

All stainless steel anchor, PVC coated flashing deck flange for PVC roof membrane. Bituminous painted flashing deck flange for BUR and ModBit roof membrane. See

RECOMMENDED USE:

Suitable for all flat roofs as fall arrest anchors for securing workers' lifelines or the tying back of suspended access equipment such as outrigger beams and parapet wall clamps. Also suitable for suspension of boatswain chair. Ideal for re-roofing.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AJSC, AWS, and other references. Thaler STACK JACK Flashing conforms to CSA B272-93. See Thaler FARA Systems Fall Protection literature for specific data.

WARRANTY:

20 year warranty (lifetime on all stainless steel) against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler anchors require no maintenance (maintenance free).

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

Fall arrest roof anchors: Thaler [FARA-34 with galvanized forged 1018 steel eye] [FARA-44 with Type 304 stainless steel forged eye] [FARA-44U with Type 304 stainless steel U bolt] swivel eye roof anchor with Type 304 s.s. cap assembly to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: EPDM weather seal, top nut, washer, s.s. cotter pin; urethane insulated, hollow, hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 5" x 5" (16 mm x 127 mm x 127 mm) 44W base plate; manufacturer's standard flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Base Seal and [bituminous painted deck flange] [PVC coated deck flange]; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture.



FARA-35/-45/-45U FALL ARREST ROOF ANCHORS (Cast-In-Place) PATENTED NOTE: REFER TO PAGES I-34, I-35, I-36 FOR NON-STANDARD HEIGHT ANCHORS

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, Thaler FARA-35/-45/-45U anchors are installed by casting the anchor into the structural concrete roof deck as per layout drawings, using a maximum torque of 125 lbf-ft. (169 Nm), then placing the flashing sleeve over the anchor and roof membrane, installing the cap, and as follows:

BUR: Set flashing deck flange in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set flashing flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer. Do not overheat (melt) EPDM base seal.

Single Ply: Single Ply: Set deck flange in layer of membrane adhesive and extend single ply up sleeve to top of anchor underneath the cap. Note: for PVC membrane, specify PVC coated STACKJACK by adding suffix P to end of model number e.g. FARA-35-A-P; weld roofing to deck flange using PVC torch.

Precautions: Apply an asphaltic or other type protective coating to exposed aluminum STACK JACK Flashing to a height of 2" (51 mm) above a limestone ballast to avoid corrosive reaction. Also, if coating deck flange with bituminous paint on site, allow 24 hours for drying before applying roof membrane.

Ordering and Availability: Specify flashing material required by adding appropriate suffix to model number e.g. FARA-35-A, for aluminum, etc. Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock.

ROOF SPECIALTIES FARA-35/-45/-45U "SWIVEL EYE" FALL ARREST ROOF ANCHORS (Cast-In-Place)

DESCRIPTION:

Thaler FARA cast-in-place anchors consist of a urethane insulated hollow steel post (HSS) and base plate, single stainless steel bolt for securing to concrete roof slab, flashing sleeve, and stainless steel cap assembly. The top of the anchor is available with three different eye options: 1. With yerv high strength, calvanized forged eve

- (FARA-35). All stainless steel (FARA-45SS).
- 2. With very high strength, stainless steel forged eye (FARA-45). All stainless steel (FAR-45SS).
- With high strength, stainless steel U Bolt (Fara-45U). All stainless steel (FARA-45USS).

PROMINENT FEATURES:

Swivel eye follows direction of line attachment. Re-usable. Condensation and maintenance free (attractive, neat flashing never needs caulking; see Thaler EPDM Flashing Seals literature). Anchor integrity is back by \$7,000,000.00 liability insurance.

OPTIONS:

PVC coated flashing deck flange for PVC roof membrane. Bituminous painted flashing deck flange for BUR and ModBit roof membrane. See other Thaler FARA models for different securements.

RECOMMENDED USE:

Suitable for all flat roofs as fall arrest anchors for securing workers' lifelines or the tying back of suspended access equipment such as outrigger beams and parapet wall clamps. Also suitable for suspension of boatswain chair. Ideal for re-roofing.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC, AWS, and other references. Thaler STACKJACK Flashing conforms to CSA B272-93. See Thaler FARA Systems Fall Protection literature for specific data.

WARRANTY:

20 year warranty (lifetime on all stainless steel) against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler anchors require no maintenance (maintenance free).

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

Fall arrest roof anchors: Thaler [FARA-35 with galvanized forged 1018 steel eye] [FARA-45 with Type 304 stainless steel forged eye] [FARA-45U with Type 304 stainless steel U bolt] swivel eye roof anchor with Type 304 s.s. cap assembly to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: EPDM weather seal, top nut, washer, s.s. cotter pin; urethane insulated, hollow, hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) 44W base plate; single 1" (25 mm) Type 304 s.s. bolt with EPDM weather seal, top nut and washer; 1" (25 mm) s.s. washer; manufacturer's standard flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Base Seal and [bituminous painted deck flange] [PVC coated deck flange]; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture.





FARA-36/-46/-46U FALL ARREST ROOF ANCHORS (Bolt Around OWSJ)

PATENTED NOTE: REFER TO PAGES I-34, I-35, I-36 FOR NON-STANDARD HEIGHT ANCHORS

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, Thaler FARA-36/-46/-46U anchors are installed by bolting the anchor to the top chord of the OWSJ as per layout drawings, [using a maximum torque of 75 lbf-ft. (100 Nm) for 5/8" (16 mm) bolt and 235 lbf-ft. (319 Nm) for 1" (25 mm)], reinforcing the base plates with a cross tube, then placing the flashing sleeve over the anchor and roof membrane, installing the cap, and as follows:

BUR: Set flashing deck flange in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set flashing flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer. Do not overheat (melt) EPDM base seal.

Single Ply: Set deck flange in layer of membrane adhesive and extend single ply up sleeve to top of anchor underneath the cap. Note: for PVC membrane, specify PVC coated STACK JACK by adding suffix P to end of model number e.g. FARA-36-A-P; weld roofing to deck flange using PVC torch.

Precautions: Apply an asphaltic or other type protective coating to exposed aluminum STACK JACK Flashing to a height of 2" (51 mm) above a limestone ballast to avoid corrosive reaction. Also, if coating deck flange with bituminous paint on site, allow 24 hours for drying before applying roof membrane.

Ordering and Availability: Specify flashing material required by adding appropriate suffix to model number e.g. FARA-36-A, for aluminum, etc. Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock.

ROOF SPECIALTIES FARA-36/-46/-46U "SWIVEL EYE" FALL ARREST ROOF ANCHORS (Bolt Around OWSJ)

DESCRIPTION:

Thaler FARA bolt around OWSJ anchors consist of a urethane insulated hollow steel post (HSS) with base plate, four stainless steel bolts and under-joist plate, and cross tube (supplied by others) for securing to an OWSJ, flashing sleeve, and stainless steel cap assembly. The top of the anchor is available with three different eye options:

- 1. With very high strength, galvanized forged eye (FARA-36). All stainless steel (FARA-46SS).
- 2. With very high strength, stainless steel forged eye (FARA-46). All stainless steel (FARA-46SS).
- 3. With high strength, stainless steel U Bolt (Fara-46U). All stainless steel (FARA-46USS).

PROMINENT FEATURES:

Swivel eye flows direction of line attachment. Re-usable. Condensation and maintenance free (attractive, neat flashing never needs caulking; see Thaler EPDM Flashing Seals literature). Anchor integrity is backed by \$7,000,000.00 liability

OPTIONS:

All stainless steel anchor, PVC coated flashing deck flange for PVC roof membrane. Bituminous painted flashing deck flange for BUR and ModBit roof membrane. See other Thaler FARA models for different securements.

RECOMMENDED USE:

Suitable for all flat roofs as fall arrest anchors for securing workers' lifelines or the tying back of suspended access equipment such as outrigger beams and parapet wall clamps. Also suitable for suspension of boatswain chair. Ideal for re-roofino.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC AWS, and other references. Thaler STACK JACK Flashing conforms to CSA B272-93. See Thaler FARA Systems Fall Protection literature for specific data.

WARRANTY:

20 year warranty (lifetime on all stainless steel) against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler anchors require no maintenance (maintenance free).

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

Fall arrest roof anchors: Thaler [FARA-36 with galvanized forged 1018 steel eye] [FARA-46 with Type 304 stainless steel forged eye] [FARA-46U with Type 304 stainless steel U bolt] swivel eye roof anchor with Type 304 s.s. cap assembly to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: EPDM weather seal, top nut, washer, s.s. cotter pin: urethane insulated, hollow, hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) 44W base plate; 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) under-joist plate and four 5/8" (16 mm) Type 304 s.s. bolts with lock washers and nuts; manufacturer's standard flashing of [.064" (1.6 mm) mill finish1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Base Seal and [bituminous painted deck flange] [PVC coated deck flange]; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braubfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture.



FARA-37/-47 /-47U FALL ARREST ROOF ANCHORS (Pre-Cast-Core-Bolt)

PATENTED NOTE: REFER TO PAGES I-34, I-35, I-36 FOR NON-STANDARD HEIGHT ANCHORS

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, Thaler FARA-37/-47/-47U anchors are installed by grouting the anchor bolt and core slab plate into the structural concrete core slab roof deck joints as per drawings and deforming the exposed bolt threads, using a maximum torque of 125 lbf-ft. (169 Nm), then placing the flashing sleeve over the anchor and roof membrane, installing the cap, and as follows:

BUR: Set flashing deck flange in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set flashing flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer. Do not overheat (melt) EPDM base seal.

Single Ply: Set deck flange in layer of membrane adhesive and extend single ply up sleeve to top of anchor underneath cap. Note: for PVC membrane, specify PVC coated STACKJACK by adding suffix P to end of model number e.g. FARA-37-A-P; weld roofing to deck flange using PVC torch.

Precautions: Apply an asphaltic or other type protective coating to exposed aluminum STACK JACK Flashing to a height of 2" (51 mm) above a limestone ballast to avoid corrosive reaction. Also, if coating deck flange with bituminous paint on site, allow 24 hours for drying before applying roof membrane.

Ordering and Availability: Specify flashing material required by adding appropriate suffix to model number e.g. FARA-37-A, for aluminum, etc. Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock.

ROOF SPECIALTIES FARA-37/-47/-47U "SWIVEL EYE" FALL ARREST ROOF ANCHORS (Pre-Cast Core Bolt)

DESCRIPTION:

Thaler FARA pre-cast core bolt anchors consist of a urethane insulated hollow steel post (HSS) single stainless steel bolt and core plate for securing to pre-cast concrete roof slab, flashing sleeve, and stainless steel cap assembly. The top of the anchor is available with three different eye options:

- With very high strength, galvanized forged eye (FARA-37). All stainless steel (FARA-47SS).
- With very high strength stainless steel forged eye (FARA-47). All stainless steel (FARA-47SS).
- With high strength stainless steel U Bolt (Fara-47U). All stainless steel (FARA-47USS)

PROMINENT FEATURES:

Swivel eye follows direction of line attachment. Re-usable. Condensation and maintenance free (attractive, neat flashing never needs caulking; see Thaler EPDM Flashing Seals literature). Anchor integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS:

All stainless steel anchor, PVC coated flashing deck flange for PVC roof membrane. Bituminous painted flashing deck flange for BUR and ModBit roof membrane. See other Thaler FARA models for different securements.

RECOMMENDED USE:

Suitable for all flat roofs as fall arrest anchors for securing workers' lifelines or the tying back of suspended access equipment such as outrigger beams and parapet wall clamps. Also suitable for suspension of boatswain chair. Ideal for re-roofing.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC, AWS, and other references. Thaler STACKJACK Flashing conforms to CSA B272-93. See Thaler FARA Systems Fall Protection literature for specific data.

WARRANTY:

20 year warranty (lifetime on all stainless steel) against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler anchors require no maintenance (maintenance free).

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

Fall arrest roof anchors: Thaler [FARA-37 with galvanized forged 1018 steel eye] [FARA-47 with Type 304 stainless steel forged eye] [FARA-47U with Type 304 stainless steel U bolt] roof anchor to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: urethane insulated, hollow, hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 10" x 10" (16 mm x 254 mm x 254 mm) 44W base plate; single 3/4" (19 mm) Type 304 s.s. bolt with EPDM weather seal, top nut, washer and s.s. cotter pin; galvanized 5/8" x 4" x 12" (16 mm x 102 mm x 305 mm) core slab plate, lock washer and nut; manufacturer's standard flashing of [.064" (1.6 mm) mill finish1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Base Seal and [bituminous painted deck flange] [PVC coated deck flange]; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture.



FARA-81/-91/-91U FALL ARREST WALL ANCHORS (Bolt-Through) PATENTED NOTE: REFER TO PAGES I-34, I-35, I-36 FOR NON-STANDARD HEIGHT ANCHORS

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, Thaler FARA-81/-91/-91U wall anchors are installed by drilling a hole in the concrete wall, installing the anchor and applying a caulking bead (by others) around the eye wall plate. Bolt torque should not exceed 100 lbf-ft. (135 Nm)

Ordering and Availability: Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock.

ROOF SPECIALTIES FARA-81/-91/-91U FALL ARREST WALL ANCHORS (Bolt-Through)

DESCRIPTION:

Thaler FARA bolt-through anchors consist of a single stainless steel bolt with an eye at one end and a backup plate at the other end. The anchor eye is available with three different options:

- 1. With very high strength, galvanized forged eve (FARA-81).
- 2. With very high strength, stainless steel forged eye (FARA-91).
- 3. With high strength, stainless steel U Bolt eye (FARA-91U).

PROMINENT FEATURES:

Anchor integrity is backed by \$7,000,000.00 liability insurance

OPTIONS:

See other Thaler FARA models for different securements.

RECOMMENDED USE:

For structurally adequate concrete walls as fall arrest anchors for securing workers' lifelines or the tying back of suspended access equipment such as outrigger beams and parapet wall clamps. Also suitable for suspension of boatswain chair.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformances include CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC, AWS, and other references. See Thaler Systems Fall Protection literature for specific data.

WARRANTY:

20 year warranty against defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Also, the caulking bead around the eye base plate should be inspected periodically and maintained if necessary.

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

Fall arrest wall anchors: Thaler [FARA-81 with galvanized forged 1018 steel eye] [FARA-91 with Type 304 stainless steel forged eye] [FARA-91U with Type 304 stainless steel U bolt] wall anchor to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with single 3/4" (19 mm) dia. s.s. bolt, lock washer, nut and 1/4" x 4" x 4" (6 mm x 102 mm x 102 mm) s.s. backup plate; manufactured by Thaler Metal Industries, 1-800-387-7217 Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture.





FARA-82/-92/-92U FALL ARREST WALL ANCHORS (Cast-In-Place) PATENTED NOTE: REFER TO PAGES I-34, I-35, I-36 FOR NON-STANDARD HEIGHT ANCHORS

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, Thaler FARA-82/-92/-92U wall anchors are installed by casting the anchor into the concrete wall, applying the washer and nut, and deforming the exposed threads of the anchor bolt. Bolt torque should not exceed 100 lbf-ft. (135 Nm).

Ordering and Availability: Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock.

ROOF SPECIALTIES FARA-82/-92/-92U FALL ARREST WALL ANCHORS (Cast-In-Place)

DESCRIPTION:

Thaler FARA cast-in-place anchors consist of a single stainless steel bolt with an eye. The anchor eye is available with three different options:

- 1. With very high strength, galvanized
- forged eye (FARA-82). 2. With very high strength stainless steel forged eye (FARA-92).
- With high strength stainless steel U Bolt (FARA-92U).

PROMINENT FEATURES:

Anchor integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS:

See other Thaler FARA models for different securements. **RECOMMENDED USE:**

RECOMMENDED U

For structurally adequate concrete walls such as fall arrest anchors for securing workers' lifelines or the tying back of suspended access equipment such as outrigger beams and parapet wall clamps. Also suitable for suspension of boatswain chair.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and mater -ials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC, AWS, and other references.

WARRANTY:

20 year warranty against defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Also, the caulking bead around the eye base plate should be inspected periodically and maintained if necessary.

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

HALFB

Fall arrest wall anchors: Thaler [FARA-82 with galvanized forged 1018 steel eye] [FARA-92 with Type 304 stainless steel forged eye] [FARA-92U with Type 304 stainless steel U bolt] wall anchor to [CSA 291-02] [OSHA 1910.66, Sub parts D and F] with single 3/4" (19 mm) dia. cast-in-place s.s. anchor bolt with lock washer and nut; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture.



FARA-83/-93/-93U FALL ARREST WALL ANCHORS (Adhesive Bolt) PATENTED NOTE: REFER TO PAGES I-34, I-35, I-36 FOR NON-STANDARD HEIGHT ANCHORS

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, Thaler FARA-83/-93/-93U wall anchors are installed by adhesive bolting (as per bolt manufacturer's instruction) the wall plate to the structural concrete wall as per layout drawings, deforming the exposed threads and applying a caulking bead (by others) around the eye wall plate.

Ordering and Availability: Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock. Note: The FARA-93 stainless steel forged eye has a galvanized finish over top of the stainless steel. The process of galvanizing the base plate of the anchor requires the entire anchor to be dipped in the zinc bath, thereby covering the stainless steel eye. If there is any question about a product received on site, the eye material may be checked with a magnet. Type 304 stainless steel is non-magnetic.

ROOF SPECIALTIES FARA-83/-93/-93U FALL ARREST WALL ANCHORS (Adhesive Bolt)

DESCRIPTION:

Thaler FARA Adhesive bolt anchors consist of an anchor eye welded to a wall plate which has been prepared to receive adhesive anchor bolts. The anchor eye is available with three different options:

- With very high strength, galvanized forged eye (FARA-83). All stainless steel (FARA-93SS).
- With very high strength stainless steel forge eye (FARA-93). All stainless steel (FARA-93SS).
- With high strength stainless steel U Bolt (FARA-93U). All stainless steel (FARA-93USS).

PROMINENT FEATURES:

Anchor integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS:

See other Thaler FARA models for different securements.

RECOMMENDED USE:

Retrofit product for structurally adequate concrete walls as a fall arrest anchor for securing workers' lifelines or the tying back of suspended access equipment such as outrigger beams and parapet wall clamps. Also suitable for suspension of boatswain chair.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC, AWS, and other references.

WARRANTY:

20 year warranty against defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instruction". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Also, the caulking bead around the eye base plate should be inspected periodically and maintained if necessary.

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

Fall arrest wall anchors: Thaler [FARA-83 with galvanized forged 1018 steel eye] [FARA-93 with Type 304 stainless steel forged eye] [FARA-93U with Type 304 stainless steel U bot]] wall anchor to [CSA 291-02] [OSHA 1910.66, Sub parts D and F] welded to [5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) 44W galvanized base plate] manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), Installed as per manufacture's written instructions. Provide 20 year warranty against defects in materials and/or manufacture.



FARA-84/-94/-94U FALL ARREST WALL ANCHORS (Cladding Bolt) PATENTED NOTE: REFER TO PAGES I-34, I-35, I-36 FOR NON-STANDARD HEIGHT ANCHORS

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, Thaler FARA-84/-94/-94U wall anchors are installed by drilling a hole in the concrete wall, using a maximum torque of 100 lbf.-ft (135 Nm), installing the anchor and applying a caulking bead (supplied by others) around the cladding spacer after the cladding has been installed.

Ordering and Availability: Available throughout North America. Contact Thaler for a list of distributors and current cost information. Most products are readily available from stock. Note: The FARA-94 stainless steel forged eye has a galvanized finish over top of the stainless steel. The process of galvanizing the the anchor requires the entire anchor to be dipped in the zinc bath, thereby covering the stainless steel eye. If there is any question about product received on site, the eye material may be checked with a magnet. Type 304 stainless steel is non-magnetic.

ROOF SPECIALTIES FARA-84/-94/-94U FALL ARREST WALL ANCHORS (Cladding-Bolt)

DESCRIPTION:

Thaler FARA cladding-bolt anchors consist of an anchor eye welded to an HSS cladding spacer, and a single stainless steel bolt with a backup plate. The anchor eye is available with three different options:

- 1. With very high strength, galvanized forged eye (FARA-84). All stainless steel
- (FARA-94SS). 2. With very high strength stainless steel
- forged eye (FARA-94). All stainless steel (FARA-94SS).
- 3. With high strength stainless steel U Bolt (FARA-94U). All stainless steel (FARA-94USS).

PROMINENT FEATURES:

Condensation free. Anchor integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS:

See other Thaler FARA models for different securements.

RECOMMENDED USE:

For structurally adequate concrete walls with a cladding finish (metal siding, brick, etc.) as fall arrest anchors for securing workers' lifelines or the tying back of suspended access equipment such as outrigger beams and parapet wall clamps. Also suitable for suspension of boatswain chair.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and material standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformances includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC, AWS, and other references.

WARRANTY:

20 year warranty against defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instruction. Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Also, the caulking bead around the eye base plate should be inspected periodically and maintained if necessary.

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

HAIFR

Fall arrest wall anchors: Thaler [FARA-84 with galvanized forged 1018 steel eye] [FARA-94 with Type 304 stainless steel forged eye] [FARA-94U with Type 304 stainless steel U bolt] wall anchor to [CSA 291-02] [OSHA 1910.66, Sub parts D and F] with single 3/4" (19 mm) dia. s.s. bolt and EPDM washer seal, ASTM 500C HSS cladding spacer, 1/4" x 4" x 4" (6 mm x 102 mm x 102 mm) s.s. backup plate, lock washer and nut; manufactured by Thaler Metal Industries, 1-800-387-7217 Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture.



FARA-85/-95/-95U FALL ARREST WALL ANCHORS (Pier Bolt) PATENTED NOTE: REFER TO PAGES I-34, I-35, I-36 FOR NON-STANDARD HEIGHT ANCHORS

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, Thaler FARA-85/-95/-95U wall anchor is installed by drilling a hole in the non structural wall, installing the anchor (using a maximum torque of 100 lbf-ft (135 Nm), in a structurally adequate concrete floor or roof slab, deforming the exposed threads of the pier anchor bolt, and applying a caulking bead (by others) around the eye wall plate. Adhesive bolts to be installed as per bolt manufacturer's instructions.

Ordering and Availability: Available throughout North America. Contact Thaler for a list of distributors and current cost information. Most products are readily available from stock.

ROOF SPECIALTIES FARA-85/-95/-95U FALL ARREST WALL ANCHORS (Pier Bolt)

DESCRIPTION:

Thaler FARA pier bolt anchors consist of an anchor eye and single steel bolt secured to a floor mounted steel pier located behind a non-structural wall. The anchor eye is available with three different options:

- With very high strength, galvanized forged eye (FARA-85). All stainless steel (FARA-95SS).
 With very high strength stainless steel forged
- eye (FARA-95). All stainless steel (FARA-95SS)
- 3. With high strength stainless steel U Bolt (FARA-95U). All stainless steel (FARA-95USS).

PROMINENT FEATURES:

Anchor integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS:

All stainless steel anchor, or see other Thaler FARA models for different securements

RECOMMENDED USE:

For any type non-structural wall (mechanical room, penthouse, elevator room, etc.) as fall arrest anchors for securing workers' lifelines or the tying back of suspended access equipment such as outrigger beams and parapet wall clamps. Also suitable for suspension of boatswain chair. Ideal for retrofit.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML,ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC, AWS, and other references.

WARRANTY:

20 year warranty (lifetime on all stainless steel) against defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Also, the caulking bead around the eye base plate should be inspected periodically and maintained if necessary.

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

Fall arrest wall anchors: Thaler [FARA-85 with galvanized forged 1018 steel eye] [FARA-95 with Type 304 stainless steel forged eye] [FARA-95U with Type 304 stainless steel U bolt] wall anchor to [CSA 291-02] (OSHA 1910.66, Sub parts D and F] with single 3/4" (19 mm) dia. s.s. pier bolt and s.s. 1/4" x 4" (6 mm x 102 mm x 102 mm) epoxy primed ASTM 500C HSS pier welded to a 5/8" x 8" x 6" (16 mm x 203 mm) epoxy primed 44W base plate prepared to receive four 5/8" (16 mm) anchor bolts (by others); manufactured by Thaler Metal Industries 1-800-387-721 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturers written instructions. Provide 20 year warranty against leaks, condensation and defects in materials and/or manufacture



FARA-96 FALL ARREST ANCHOR (Adhesive Bolt)

PATENTED NOTE: REFER TO FOLLOWING PAGES FOR NON-STANDARD HEIGHT ANCHORS

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, the Thaler FARA-96 anchor is installed by adhesive bolting (as per bolt manufacturer's instructions) the anchor to the structural concrete roof deck as per layout drawings, using a maximum torque of 125 lbf-ft. (169Nm), cutting and grouting over the adhesive anchor bolt ends, applying the roof membrane and flashing, and then finally installing the swivel plate and perforated enclosure box.

Ordering and Availability: Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock.

ROOF SPECIALTIES FARA-96 "SWIVEL EYE" FALL ARREST TERRACE ANCHOR (Adhesive Bolt)

DESCRIPTION:

The Thaler FARA-96 terrace anchor is a recessed roof anchor product, consisting of a special flat stainless steel swivel plate eye and galvanized base plate secured to a concrete structural deck using all types of fastening methods. The swivel plate is housed within a perforated, stainless steel box to help facilitate drainage and installation. A stainless steel cover plate, installed flush with the top of the terrace pavers, conceals the anchor when not in use.

PROMINENT FEATURES:

Anchor height is available from 3-3-4" to 14" (95 mm to 356 mm), as per site requirements. Anchor integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS:

If height of perforated stainless steel box is greater than 6" (152 mm), then a standard galvanized or stainless steel forged eye (fixed swivel) or a stainless steel U bolt eye, must be employed instead of the flat plate eye in order to meet strength requirements (see page I-20A).

RECOMMENDED USE:

Suitable for terrace, promenade, balcony, or podium type decks employing paver slab roofing surface as a fall arrest anchor for securing workers' lifelines or the tying back of suspended access equipment such as outrigger beams and parapet wall clamps. Also suitable for suspension of boatswain chair. Ideal for retrofit.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC, AWS, and other references.

20 year warranty (lifetime on all stainless steel) against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler anchors require no maintenance (maintenance free).

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

Fall arrest terrace anchors: Thaler FARA-96 anchor with 1/4" (6 mm) Type 304 stainless steel swivel plate eye to [CSA 291-02] [OSHA 1910.66, Sub parts D and F] with: hot dip galvanized, hollow, ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. welded to 5/8" x 8" x 8" (16 mm x 203 mm) 44W base plate prepared to receive four 5/8" (16 mm) dia. adhesive anchor bolts (by others); EPDM washer seal; 22 ga. x 11-1/2" x 11-1/2" (0.76 mm x 292 mm) perforated Type s.s. enclosure box with solid 1/8" x 12" x 12" (3 mm x 305 mm x 305 mm) s.s. pan formed cover; 22 ga. x 17-1/2" (0.76 mm x 445 mm) dia. s.s. flashing disc; manufactured by Thaler Metal Industries, 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture.



FARA-96A/-106A/-106AU HIGH "SWIVEL EYE" FALL ARREST TERRACE ANCHOR (Adhesive Bolt)

NOTE: SEE PAGE I-20 FOR ALTERNATIVE FASTENING METHODS







FARA-100/-101/-110 FALL ARREST "ROPE STOP" ANCHORS

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, Thaler FARA-100/-101/-110 roof stop anchors are installed by drilling a hole in the concrete roof deck or concrete parapet wall, as per bolt manufacturer's instruction, and using a maximum torque of 100 lbf-ft. (135 Nm), installing the anchor and as follows:

BUR: Set flashing deck flange in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set flashing flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer.

Single Ply: Set flashing deck flange in layer of membrane adhesive and adhere single ply to deck flange and seal as per membrane manufacturer's recommendations.

Parapet: Set anchors to depth of stop washer, apply metal parapet flashing and seal flashing to rope stop with caulking.

Ordering and Availability: Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock.

ROOF SPECIALTIES FARA-100/-101/-110 FALL ARREST "ROPE STOP" ANCHORS

DESCRIPTION:

Thaler FARA "Rope Stop" anchors are 3/4" (19 mm) diameter stainless steel anchor rods with a 90° bend at the top of the anchor. They are available in three different models:

1. Through bolt for flat roof (FARA-100)

Adhesive bolt for flat roof (FARA-101)
 Adhesive bolt for the top of parapet wall

(FARA-110)

PROMINENT FEATURES:

Anchor integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS:

See other Thaler FARA models for different securements.

RECOMMENDED USE:

For structurally adequate concrete roof decks or parapet walls to limit lifeline or boatswain chair suspension line movement and to reduce swing fall hazard (stop swing fall or going around a corner if a fall should happen). Employed at strategic locations such as building corners to counteract wind hazard.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL OSHA, AISC, AWS, and other references.

WARRANTY:

20 year warranty against defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint).

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

Rope stop roof anchor: Thaler FARA-100 through bolt 3/4" (19 mm) dia. s.s. rope stop anchor to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] complete with 9" (229 mm) dia. x 18 ga. (1.2 mm) s.s. flashing deck flange welded to rope stop, 2" (51 mm) dia. s.s. stop plug to suit roof condition and 1/4" x 4" x 4" (6 mm x 102 mm x 102 mm) s.s. back up plate, lock washer and nut; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacture's written instructions. Provide 20 year warranty against defects in materials and/or manufacture.

Rope stop roof anchor: Thaler FARA-101 adhesive bolt 3/4" (19 mm) dia. s.s. rope stop anchor to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F], complete with 9" (229 mm) dia. x 18 ga. (1.2 mm) s.s. flashing deck flange welded to rope stop, 2" (51 mm) dia. s.s. stop plug to suit roof condition; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture.

Rope stop roof anchor: Thaler FARA-110 adhesive bolt 3/4" (19 mm) dia. s.s. rope stop anchor to [CSA 291-02] [OSHA 1910.66, Sub parts D and F], complete with 1/8" x 2" (3 mm x 51 mm) dia. s.s. stop washer welded to rope stop; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture.



FARA-150 DAVIT ARM BASE PATENTED

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, the Thaler FARA-150 Davit Arm Base is installed by through bolting the base to the structural concrete roof deck as per layout drawings, using a maximum torque of 100 lbf-ft. (135 Nm), grouting over the bolt heads, then placing the flashing sleeve over the base and membrane and deforming the anchor rod threads from beneath the deck, and as follows:

BUR: Set flashing deck flange in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set flashing flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer. Do not overheat (melt) EPDM base seal.

Single Ply: Set deck flange in layer of membrane adhesive and extend single ply up sleeve to highest elevation possible and clamp membrane to STACK JACK Flashing. Note: for PVC membrane, specify PVC coated STACK JACK by adding suffix P to end of model number, e.g. FARA-150-A-P; weld roofing to deck flange using PVC torch.

Precautions: Apply an asphaltic or other type protective coating to exposed aluminum STACK JACK Flashing to a height of 2" (51mm) above a limestone ballast to avoid corrosive reaction. Also, if coating deck flange with bituminous paint on site, allow 24 hours for drying before applying roof membrane.

Davit arm: With the davitÿ arm holder in the horizontal position, insert davit mast into the holder, manually raise the arm into position and secure using the twos.s. hinge pins. When not being used for maintenance, store arm in mechanical room or other location

Ordering: Specify flashing material required by adding the appropriate suffix to model number e.g. FARA-150-A, for aluminum, etc. Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock.

ROOF SPECIALTIES FARA-150 DAVIT ARM BASE

DESCRIPTION:

The Thaler FARA-150 Davit Arm Base consists of a galvanized, urethane insulated, hollow section steel base with an galvnized davit arm holder, which is designed to receive a FARA-155 Davit Arm. A flashing sleeve that fits over base completes the assembly. See Thaler FARA-155 Davit Arm literature for davit arm data. A separate fall arrest roof anchor is required for attaching each worker's lifeline.

PROMINENT FEATURES:

Urethane insulated base prevents formation of condensation (corrosion protection). Maintenance free (attractive, neat flashing never needs caulking; see Thaler EPDM Flashing Seals literature). Structural integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS:

All stainless steel Davit Arm Base. Other base securements available. PVC coated flashing deck flange for PVC roof membrane. Bituminous painted flashing deck flange for BUR and ModBit roof membrane. See Thaler roof anchor literature for lifeline anchor options. See Thaler ARS-115 Rail Post Roof Support literature for roof edge guardrail protection.

RECOMMENDED USE:

Suitable for all flat roofs as a davit arm base used to suspend a platform or single point access equipment such as baskets (cages) and manually or power operated boatswain chairs.

APPLICABLE STANDARDS:

Thaler FARA Davit Bases conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, WCA, OSHA, CAL, OSHA, AISC, AWS, and other references. Thaler SJ-34 New-Standard STACK JACK Flashing conforms to CSA B272-93. See separate Thaler FARA Systems Fall Protection literature for specific data.

WARRANTY:

20 year warranty (lifetime on stainless steel) against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require davit bases to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler davit arm bases require no maintenance (maintenance free).

PLANNING SERVICE:

Thaler will provide layout drawings for davit bases and accompanying fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

Davit arm bases: Thaler FARA-150 Davit Arm Base designed to receive a FARA -155 Davit Arm; to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with urethane filled, hot dipped galv ASTM 500C base 9" dia. x 1/4" (229 mm x 6 mm) welded to 3/4" x 14" x 14" (19 mm x 356 mm x 356 mm) ASTM 500C base plate and bolted to 1/4" x 14" x 14" (6 mm x 356 mm x 356 mm) under-deck plate using four 3/4" (19 mm) dia. s.s. bolts; davit arm holder 1/2" x 8-7/8" I.D. (12 mm x 225 mm) ASTM 500C with weep holes, connected to steel hinge using two 3/4" (19 mm) s.s. hinge pins tethered with 1/8" (3 mm) s.s. cable; SJ-34, 7" (178 mm) high New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange]; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture



FARA-155 DAVIT ARM PATENTED

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, the Thaler FARA-155 Davit Arm is installed by friction fitting the davit arm into the davit arm base, and as follows:

Davit arm: With the davit arm holder (attached to the FARA-150 Davit Arm Base) in the horizontal position, insert davit mast into the holder, manually raise the arm into position and secure using the two s.s. hinge pins. When not being used for maintenance, store arm in mechanical room or other location

Ordering: Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock.

ROOF SPECIALTIES FARA-155 DAVIT ARM For Window Cleaning or Exterior Building Maintenance (Fixed Head)

DESCRIPTION:

The Thaler FARA-155 Davit Arm consists of a round extruded aluminum mast, and an aluminum horizontal 360° rotating I-beam arm equipped with a sliding stainless steel suspension line attachment plate, and levelling devices. The davit arm requires a Thaler FARA-150 Davit Arm Base to complete the assembly (see separate literature). Also a separate fall arrest roof anchor is required for attaching each worker's lifeline.

PROMINENT FEATURES:

Structural integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS:

See Thaler roof anchor literature for lifeline anchor options. See Thaler ARS-115 Rail Post Roof Support literature for roof edge guardrail protection.

RECOMMENDED USE:

Suitable for all flat roofs for suspending a platform or single point access equipment such as baskets (cages) and manually or power operated boatswain chairs.

APPLICABLE STANDARDS:

Thaler FARA Davit Arms conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC, AWS, and other references. See separate Thaler FARA Systems Fall Protection literature for specific data.

WARRANTY:

20 year warranty against defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require davits to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler anchors require no maintenance (maintenance free).

PLANNING SERVICE:

Thaler will provide layout drawings for davit bases, davit arms and fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

Davit arms: Thaler Fara-155 complete davit arm assembly to [CSA 291-02] [OSHA 1910.66, Sub parts D and F] for use with Thaler FARA-150 Davit Arm Base, with: mast 5/16" x 8-5/8" O.D. (8 mm x 220 mm) 6061-T6 extruded alum. with handle grips; horizontal 6061-T6 alum. I beam 1/4" x 3-1/2" x 6" (6 mm x 89 mm x 152 mm) with 3/8" (10mm) thick sliding s.s. suspension line attachment plate and handle grips; strut reinforcing 1/4" x 3" x 3" (6 mm x 76 mm) with 1/4" (6 mm) connector plates, manufactured by Thaler Metal Industries,1-800-387-7217(Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer.



FARA-150-RH DAVIT ARM BASE (Bolt Through) PATENTED

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, the Thaler FARA-150-RH Davit Arm Base is installed by through bolting the base to the structural concrete roof deck as per layout drawings, using a maximum torque of 150 ft-lbf (203 Nm), grouting over the bolt heads (inverted roof only), then placing the flashing sleeve over the base and membrane, bolting and deforming the anchor rod threads from beneath the deck, and as follows

BUR: Set flashing deck flange in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set flashing flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer. Do not overheat (melt) EPDM Base Seal.

Single Ply: Set deck flange in layer of membrane adhesive and extend single ply up sleeve to highest elevation possible and clamp membrane to STACK JACK Flashing. Note: for PVC membrane, specify PVC coated STACK JACK by adding suffix P to end of model number, e.g. FARA-150-RH-P; weld roofing to deck flange using PVC torch.

Precautions: Apply an asphaltic or other type protective coating to exposed aluminum STACK JACK Flashing to a height of 2" (51mm) above a limestone ballast to avoid corrosive reaction. Also, if coating deck flange with bituminous paint on site, allow 24 hours for drying before applying roof membrane

Davit arm: With the davit arm holder in the horizontal position, insert davit mast into the holder, insert the hinge pin, manually raise the arm into position and secure using the locking pin. When not being used for maintenance, store arm in mechanical room or other location, indoors preferably.

Ordering and Availability: Specify flashing material required by adding the appropriate suffix to model number e.g. FARA-150-RH-A, for aluminum, etc. Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock

ROOF SPECIALTIES FARA-150-RH **DAVIT ARM BASE** For Window Cleaning or **Exterior Building Maintenance**

DESCRIPTION:

The Thaler FARA-150-RH Davit Arm Base consists of a galvanized, urethane insulated, hollow section steel base with an galvanized davit arm holder, which is designed to receive a FARA-155-RH rotating head Davit Arm. A flashing sleeve that fits over base completes the assembly. See Thaler FARA-155-RH Davit Arm literature for davit arm data. A separate fall arrest roof anchor is required for attaching each worker's lifeline.

PROMINENT FEATURES:

Urethane insulated base prevents formation of condensation (corrosion protection). Maintenance free (attractive, neat flashing never needs caulking; see Thaler EPDM Flashing Seals literature. Structural integrity is backed by high \$7,000,000.00 liability insurance.

OPTIONS:

All stainless steel Davit Arm Base. Other base securements available. PVC coated flashing deck flange for PVC roof membrane. Bituminous painted flashing deck flange for BUR and ModBit roof membrane.

BECOMMENDED USE:

Suitable for all low slope/flat roofs as a davit arm base used to suspend a platform or single point access equipment such as baskets (cages) and manually or power operated boatswain chairs

APPLICABLE STANDARDS:

Thaler FARA Davit Base conforms to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, AISC, AWS, and other references. Thaler SJ-34(7) and SJ-35(13) New-Standard STACK JACK Flashing conforms to CSA B272-93.

WARRANTY:

20 year warranty (lifetime on stainless steel) against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require davit bases to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler davit arm bases require no maintenance (maintenance free).

PLANNING SERVICE:

Without obligation, Thaler will provide layout drawings for davit bases and accompanying fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes.

SPECIFICATION (SHORT FORM): Davit arm bases: Thaler FARA-150-RH Davit Arm Base designed to receive a FARA-155-RH, rotating head Davit Arm; to [CSA 291-02] [OSHA 1910.66, Sub parts D and F] with urethane insulated, hot dipped galv. ASTM 500C base 9" dia. x 1/4" (229 mm x 6 mm) welded to 3/4" x 14" x 14" (19 mm x 356 mm x 356 mm) ASTM 500C base plate and bolted to 1/4" x 14" x 14" (6 mm x 356 mm x 356 mm) under-deck plate using four 3/4" (19 mm) dia. s.s. bolts; davit arm mast holder 5/8" x 6-7/8" I.D. (16 mm x 175 mm) ASTM 500C, with weep holes, connected to steel flanges using two 3/4" (19 mm) s.s. hinge and locking pins tethered with 1/8" (3 mm) s.s. cable; $[SJ-34,\,7"\,(178\,mm)][SJ-35,\,13"\,(330\,mm)]$ high New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, (continued on left)





FARA-155-RH DAVIT ARM PATENTED

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, the Thaler FARA-155-RH Davit Arm is installed by inserting the davit arm into the davit arm base, and as follows:

Davit arm: With the davit arm holder (attached to the FARA-150-RH Davit Arm Base) in the horizontal position, insert davit mast into the holder with one s.s. hinge pin, and manually raise the arm into position and secure with other s.s. hinge pin. Rotate mast so that davit arm locking lug is in a position opposite of the working arm position (see reverse page for illustrations). When not being used for maintenance, store arm in mechanical room or other location, preferably indoors.

Ordering: Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock.

ROOF SPECIALTIES FARA-155-RH DAVIT ARM For Window Cleaning or Exterior Building Maintenance (Rotating Head)

DESCRIPTION:

The Thaler FARA-155-RH Davit Arm consists of a round extruded aluminum mast, and a rectangular aluminum horizontal 360° rotating HSS boom equipped with a sliding stainless steel suspension line attachment point and reinforcing and other devices. The davit arm requires a Thaler FARA Davit Arm Base to complete the assembly (see separate FARA-150-RH literature). Also a separate fall arrest roof anchor is required for attaching each worker's safety lifeline.

PROMINENT FEATURES:

Structural integrity is backed by high \$7,000,000.00 liability insurance.

OPTIONS:

See Thaler roof anchor literature for lifeline anchor options. See Thaler ARS-115 Rail Post Roof Support literature for roof edge guardrail protection, in lieu of horizontal lifeline.

RECOMMENDED USE:

Suitable for all low slope/flat roofs for suspending a platform or single point access equipment such as a basket (cage) and manually or power operated boatswain chair.

APPLICABLE STANDARDS:

Thaler FARA Davit Arms conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, AISC, AWS, and other references. See separate Thaler FARA Systems Fall Protection literature for specific data.

WARRANTY:

20 year warranty against defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require davits to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler anchors require no maintenance (maintenance free).

PLANNING SERVICE:

Whithout obligation, Thaler will provide layout drawings for davit bases, davit arms and fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes.

SPECIFICATION (SHORT FORM):

HALFB

Davit arms: Thaler FARA-155-RH complete davit arm assembly to [CSA 221-02] [OSHA 1910.66, Sub parts D and F] for use with Thaler FARA-150- RH Davit Arm Base, with: mast $5/16^{\circ}$ x 6-5/8° 0.D. (8 mm x 168 mm) 6061-T6 extruded alum.; horizontal 6061-T6 alum. HSS rotating boom $1/4^{\circ}$ x 4" x 6" (6 mm x 102 mm x 152 mm) with 1" (25 mm) dia. sliding s.s. suspension line attachment bolt and plates; strut reinforcing $1/4^{\circ}$ x 3" x 3" (6 mm x 76 mm); solid rubber wheel assembly; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture.





FARA-160 RECESSED DAVIT ARM BASE (Cast-In-Place) PATENTED

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, the Thaler FARA-160 Recessed Davit Arm Base with stainless steel enclosure box is installed by placing over cast-in-place cage assembly and bolting base to the structure using a maximum torque of 150 ft.-lbf. (203 Nm).

BUR: Set stainless steel under-base plate in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set under-base plate into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer.

Single Ply: Set stainless steel under-plate onto single ply membrane in embed material recommended by single ply manufacturer.

Davit arm: With the davit arm holder in the horizontal position, insert davit mast into the holder, insert the hinge pin, manually raise the arm into position and secure using the locking pin. When not being used for maintenance, store arm in mechanical room or other location, indoors preferably.

ROOF SPECIALTIES FARA-160 RECESSED DAVIT ARM BASE

DESCRIPTION:

The Thaler FARA-160 Recessed Davit Arm Base consists of a structural stainless steel base plate with two vertical locking plates welded to the base plate, large stainless steel under-base plate, EPDM divider, stainless steel enclosure box, steel davit arm holder, which is designed to receive a FARA-155-RH rotating head Davit Arm. See Thaler FARA-155-RH Davit Arm literature for davit arm data. A separate fall arrest roof anchor is required for attaching each worker's lifeline.

PROMINENT FEATURES:

EPDM divider and EPDM washer prevents leakege (corrosion protection). Maintenance free. Structural integrity is backed by high \$7,000,000.00 liability insurance.

OPTIONS:

All stainless steel Recessed Davit Arm Base.Other base securements available.

RECOMMENDED USE:

Suitable for all low slope/flat terrace roofs, as a davit arm base used for suspending a platform or single point access equipment such as baskets (cages) and manually or power operated boatswain chairs.

APPLICABLE STANDARDS:

Thaler FARA-160 Davit Base conforms to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, AISC, AWS, and other references.

WARRANTY:

20 year warranty (lifetime on stainless steel) against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require davit bases to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler davit arm bases require no maintenance (maintenance free).

PLANNING SERVICE:

Whithout obligation, Thaler will provide layout drawings for davit bases and accompanying fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes.

SPECIFICATION (SHORT FORM):

Recessed Davit arm base: Thaler FARA-160 Recessed Davit Arm Base designed to receive a FARA-155-RH, rotating head Davit Arm; to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with stainless steel 5/8" x 10" x 10" (16 mm x 254 mm x 254 mm) base plate and two s.s. 3/4" (19 mm) locking plates; 18 Ga. x 18-1/2" x 16-1/2" (1.27 mm x 457 mm x 406 mm) stainless steel enclosure box with s.s. cover; 1/8" x 22" x 24" (3 mm x 559 mm x 610 mm) s.s. under-base plate; 3/4" (19 mm) dia. s.s. cage assembly; galvanized davit arm holder 5/8' x 6-7/8" I.D. (16 mm x 175 mm) ASTM 500C, with weep holes, connected to steel flanges using two 3/4" (19 mm) s.s. hinge and locking pins tethered with 1/8" (3 mm) s.s. cable; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture





Recessed Davit Base Concealed When not in use

Illustration Showing FARA-160 Recessed Davit Arm Base With Davit Arm Holder



1. Place Davit Arm Holder over Recessed Davit Arm Base, while removing parapet side locking pin



Davit Arm

Recessed Base

FARA-160 Recessed Davit Arm Base 2. Drop Davit Arm Holder down

while using roof side locking

360

pin as hinge pin

3. Roll Davit Arm into Recessed Davit Arm Base and secure to Davit Arm Holder using locking bolt



4. Manually raise the arm using hinge pin. Once the arm is the vertical position, insert the second locking pin.

ALTERNATIVE FASTENING METHOD FOUR 3/4" (19 mm) S.S. BOLTS, LOCK WASHER AND NUTS 1/4" x 10" x 10" (6 mm x 254 mm) S.S. BOLTS, LOCK WASHER AND NUTS 1/4" x 10" x 10" (6 mm x 254 mm) 254 mm) S.S. BOLTS, LOCK WASHER AND NUTS

5. Completed davit arm installation ready for window cleaning or other exterior building maintenance.


FARA-170 SWIVEL OUTRIGGER ARM AND BASE

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, the Thaler FARA-170 outrigger is installed by through bolting the base to the structural roof deck as per layout drawings, using a maximum torque of 125 lbf-ft. (169 Nm), then placing the flashing sleeve over the base and membrane and as follows:

BUR: Set stainless steel under-base plate in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set flashing deck flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer. Do not overheat (melt) EPDM base seal.

Single Ply: Set flashing deck flange in layer of membrane adhesive and extend single ply up sleeve to highest elevation possible and clamp membrane to STACK JACK Flashing. Note: for PVC membrane, specify PVC coated STACK JACK by adding suffix P to end of model number, e.g. FARA-170-A-P; weld roofing to deck flange using PVC torch.

Precautions: Apply an asphaltic or other type protective coating to aluminum STACK JACK Flashing to a height of 2" (51 mm) above a limestone ballast to avoid corrosive reaction. Also, if coating deck flange with bituminous paint on site, allow 24 hours for drying before applying roof membrane.

Outrigger arm: Place rear of arm into the holder and secure using the single s.s. pin. Rest front of arm on a structurally adequate parapet wall or support on blocks on the roof if the parapet wall is not structurally adequate. When not being used for maintenance, store arm in mechanical room or other location.

Ordering: Specify flashing material required by adding the appropriate suffix to model number e.g. FARA-170-A, for aluminum, etc. Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock.

ROOF SPECIALTIES FARA-170 SWIVEL OUTRIGGER BEAM AND BASE

DESCRIPTION:

The Thaler FARA-170 Outrigger consists of a galvanized, urethane insulated, hollow section steel base (bolted to roof slab) rectangular hollow section steel beam complete with handle grip and stainless steel suspension line U bolt attachment. A flashing sleeve for the base completes the assembly. A separate fall arrest roof anchor is required for attaching a worker's lifeline.

PROMINENT FEATURES:

Urethane insulated base prevents formation of condensation (corrosion protection). Maintenance free (attractive, neat flashing never needs caulking; see Thaler EPDM Flashing Seals literature). Structural integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS:

All stainless steel outrigger base. Other base securements available. PVC coated flashing deck flange for PVC roof membrane. Bituminous painted deck flange for BUR and ModBit roof membrane. See Thaler roof anchor literature for fall arrest lifeline anchor options.

RECOMMENDED USE:

Suitable for all flat roofs for suspending a platform or single point access equipment such as baskets (cages) and manually or power operated boatswain chairs.

APPLICABLE STANDARDS:

Thaler FARA Outriggers and Fall Arrest Roof Anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC, AWS, and other references. Thaler SJ-34 New-Standard STACK JACK Flashing conforms to CSA B272-93. See separate Thaler FARA Systems Fall Protection literature for specific data.

WARRANTY:

20 year warranty against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require outriggers and anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler anchors require no maintenance (maintenance free).

PLANNING SERVICE:

manufacture

Thaler will provide layout drawings for outriggers and fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

Outrigger arm and base: Thaler FARA-170 complete outrigger assembly to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with urethane filled, hot dipped galv. ASTM 500C base 4" dia. x 1/4" (102 mm x 6 mm) welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) ASTM 500C base plate and bolted through roof deck to 1/4" x 4" x 4" (6 mm x 102 mm x 102 mm) back up plate using a single 1" (25 mm) dia. s.s. bolt; beam holder 1/4" (6 mm) thick galv. 44W steel with 1" (25 mm) dia. s.s. pin tethered with 1/8" (3 mm) s.s. cable; outrigger beam 5" x 7" x1/4" (127 mm x 178 mm x 6 mm) galvanized HSS with handle grip and s.s. U bolt suspension line attachment; SJ-35, 13" (330 mm) high New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange];manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty

against leaks, condensation and defects in materials and/or





FARA-175-A PORTABLE OUTRIGGER BEAM

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, the Thaler FARA-Series portable outrigger beam is installed by placing and bolting beams into position on the pedestal frame support, and pinning the tail of the beam to the tie-back (tie down) anchor. The STACK JACK flashing for the roof anchors is installed as follows:

BUR: Set stainless steel under-base plate in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set flashing deck flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer. Do not overheat (melt) EPDM Base Seal.

Single Ply: Set flashing deck flange in layer of membrane adhesive and extend single ply up sleeve to highest elevation possible and clamp membrane to STACK JACK Flashing. Note: for PVC membrane, specify PVC coated STACK JACK by adding suffix P to end of model number, e.g. FARA-170-A-P; weld roofing to deck flange using PVC torch.

Precautions: Apply an asphaltic or other type protective coating to aluminum STACK JACK Flashing to a height of 2" (51 mm) above a limestone ballast to avoid corrosive reaction. Also, if coating deck flange with bituminous paint on site, allow 24 hours for drying before applying roof membrane.

Ordering: Specify flashing material required by adding the appropriate suffix to model number e.g. FARA-175-A-A, for aluminum, etc. Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock.

ROOF SPECIALTIES FARA-170 SWIVEL OUTRIGGER BEAM AND BASE

DESCRIPTION:

The Thaler FARA-175 Series Portable Outrigger Beam consists of an aluminum hollow section extendable upper and lower beam, aluminum vertical support leg and beam holder to receive the beams, and transport wheel assembly. Outrigger beams require Thaler tie-back (tie down) anchors and separate worker lifeline anchors with Thaler STACK JACK flashing.

PROMINENT FEATURES:

Urethane insulated anchors prevent formation of condensation (corrosion protection). Maintenance free (attractive, neat flashing never needs caulking; see Thaler EPDM Flashing Seals literature). Structural integrity is backed by high \$7,000,000.00 liability insurance.

OPTIONS:

Range of models to suit various parapet heights. Range of lifeline anchors for all roof types. PVC coated flashing deck flange for PVC roof membrane. Bituminous painted deck flange for BUR and ModBit roof membrane.

RECOMMENDED USE:

Suitable for all low slope/flat roofs for suspending a platform or single point access equipment such as baskets (cages) and manually or power operated boatswain chairs, for window cleaning or other exterior building maintenance.

APPLICABLE STANDARDS:

Thaler FARA Outriggers and Fall Arrest Roof Anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL OSHA, AISC, AWS, and other references. Thaler SJ-34(7) and SJ-35(13) New-Standard STACK JACK Flashing conforms to CSA B272-93.

WARRANTY:

20 year warranty against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request. Note: leaks and condensation refer to tie-back and lifeline anchors

MAINTENANCE:

Regulatory authorities require outriggers and anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler outriggers beams require no maintenance (maintenance free).

PLANNING SERVICE:

Without obligation, Thaler will provide layout drawings for outriggers and fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes.

SPECIFICATION (SHORT FORM):

Portable Outrigger beams: Thaler [FARA-175-A] [FARA-175-B] [FARA-175-C] [FARA-175-D] Portable Outrigger Beam to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with 1/4" x 4" x 6" (6 mm x 102 mm x 152 mm) T-6061 aluminum upper and lower sliding beam; 1/4" x 4" x 6" (6 mm x 102 mm x 152 mm); pedestal to receive adjustable beam; 3/8" (10 mm) s.s. eye suspension line attachment rigging plate; aluminum T-6061 transport wheel frame; stainless steel anchor connectors; [galvanized] [stainless steel] urethane insulated tie-back (tie down) anchor and separate lifeline anchor both with [SJ-34, 7" (178 mm) high] [SJ-35,13" (330 mm) high] New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.021" (0.53 mm) 16 oz. copper] [.018" (0.46 mm) Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Top Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange];manufactured by Thaler Metal Industries,

1-800-837-7217 (Missisauga, Ontario, Canada) or 1-800-387-7217 (Missisauga, Ontario, Canada) or 1-800-576-1200 (Niagara Falls, NY), installed as per manufacturer's written instructions. Provide 20 year warranty against leaks, condensation and defects in materials and/or manufacture.

HAIFR





Rope Grab and Vertical Lifeline (by others) Note: For low parapets less than guardrail height, a horizontal lifeline is required to provide suitable fall protection at roof edge. See Thaler Horizontal Lifeline literature.



FARA-155-P PORTABLE OUTRIGGER

INSTALLATION:

"User an/or Installation Instructions" are provided with every Thaler product. Essentially, the Thaler FARA-155-M Portable Outrigger is installed by placing and bolting transport wheel beam into position on the pedestal mast support, and then bolting the suspension beam to pedestal support, bolting A frame assembly to pedestal support, tensionnig the turnbuckle assemblies at both sides, tying the tail of the wheel/carrier beam back to an anchor.

Ordering: Available throughout North America. Contact Thaler for list of distributors and current cost information.

ROOF SPECIALTIES FARA-155-P SERIES PORTABLE **OUTRIGGERS**

Worker's Independent Lifeline Anchor

Tie-Back Wall Anchor

DESCRIPTION: The Thaler FARA-155-P Portable Outrigger consists of a transportable aluminum framework with wheels, counterweights, outrigger beam, and tie-back eye. Tie-back and lifeline anchors are required somewhere farther back on the roof for tying back the outrigger. and for, workers lifeline. Also, if the parapet is less than guardrail height, 36" or 42" minimum (915 mm or 1067 mm) depending on jurisdiction, a horizontal lifeline cable will be required for safe access to the

PROMINENT FEATURES:

Easily assembled or disassembled for maintenance contractor convenience, or alternatively assembled and stored on the roof (outdoors or indoors) by the building owner. Can be easily moved around the roof from station to station using the wide, solid rubber transport wheels. Structural integrity is backed by high \$7,000,000.00 liability insurance.

roof edge (see Thaler EASY SLIDER Horizontal Lifeline System

OPTIONS

literature)

Range of models to suit various parapet heights. Range of tie-back or lifeline anchors for all roof or wall types. See Secton I of manual for anchor selection.

RECOMMENDED USE:

Suitable for all low slope/flat roofs for suspending a ground rigged platform or single point access equipment such as baskets (cages) and manually or power operated boatswain chairs, for window cleaning or other exterior building maintenance

APPLICABLE STANDARDS:

Thaler FARA Outriggers and FARA or TWA Fall Arrest Roof Anchors conform to all Canadian and U.S. standards, Provincial and State labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, AISC, AWS, and other references.

WARRANTY:

20 year warranty against defects in materials and/or manufacture when assembled and used in accordance with Thaler "User Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require outriggers and safety tie-back anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler portable outriggers require no maintenance (maintenance free).

PLANNING SERVICE:

THALER 🛛

Without obligation. Thaler will provide layout drawings for positioning of outriggers and fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes.

SPECIFICATION (SHORT FORM): Portable Outrigger(s): Thaler FARA-155-P Portable Outrigger(s) to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F], 15'-9" (4.8 m) overall length with 1/4" x 4" x 6" (6 mm x 102 mm x 152 mm) T-6061 aluminum pedestal support, suspension beam and carrier beam; 3/8" (10 mm) s.s. eye suspension line attachment rigging plate; transport wheel assembly; A frame assembly of 1/4" x 3" x 3" (6 mm 76 mm x 76 mm) aluminum tube and two 2" (51 mm) dia. alum. leg supports; s.s. turnbuckle assembly with 3/8" (10 mm) s.s. cable; s.s end caps with s.s. U-bolt turnbuckle and tie-back eyes; [galvanized] [stainless steel] tie-back anchor and separate lifeline anchor; manufactured by Thaler Meta Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture



2. Bolt A-Frame Assembly to Pedestal. Turnbuckle Assembly is Still Loose but Attached to U-Bolt Eye.

Note: To protect roof membrane, specify use of concrete pavers around perimeter of roof where window cleaning operations, etc. are being performed. At the very least, Thaler User/Installation Instructions will require maintenance contractor to place temporary plywood or similar protection under outrigger supports during use.

> 3.Place the Outrigger Beam into Pedestal Hole and Bolt Together. Bolt Cap to End of Beam. Loosely Attach Turnbuckle Assembly on Outrigger to U-Bolt Eye.

4. Properly Tension Both Turnbuckle Assemblies. Portable outrigger is ready for Window Cleaning or Other Exterior Building Maintenance



FARA-180 "ROPE DROP" ANCHOR PATENTED

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, the Thaler FARA-180 anchor is installed by adhesive bolting (as per bolt manufacturer's instructions) the anchor to the cored out structural concrete roof deck as per Thaler layout drawings, using a maximum torque of 75 lbf-ft. (100Nm), then placing the flashing sleeve over the anchor and membrane, and as follows:

BUR: Set stainless steel under-base plate in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set flashing deck flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer. Do not overheat (melt) EPDM Base Seal.

Single Ply: Set deck flange in layer of membrane adhesive and extend single ply up sleeve to highest elevation possible and clamp membrane to STACK JACK Flashing. Note: for PVC membrane, specify PVC coated STACK JACK by adding suffix P to end of model number, e.g. FARA-180-A-P; weld roofing to deck flange using PVC torch.

Precautions: Apply an asphaltic or other type protective coating to exposed aluminum STACK JACK Flashing to a height of 2" (51 mm) above a limestone ballast to avoid corrosive reaction. Also, if coating deck flange with bituminous paint on site, allow 24 hours for drying before applying roof membrane.

Ordering: Specify flashing material required by adding the appropriate suffix to model number e.g. FARA-180-A, for aluminum, etc. Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock.

ROOF SPECIALTIES FARA-180 FALL ARREST "ROPE DROP" ANCHOR

DESCRIPTION:

The Thaler FARA-180 "Rope Drop" anchor consists of a galvanized hollow section steel sleeve (HSS) with a removable cap and a flashing sleeve. Typically employed in pairs, the top interiors of the anchors are equipped with 1" (25 mm) diameter stainless steel cross bar that is used to secure platform suspension lines. A separate standard rooftop anchor is required to secure each worker's lifeline.

PROMINENT FEATURES:

Maintenance free (attractive, neat flashing never needs caulking; see Thaler EPDM Flashing Seals literature). Anchor integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS:

All stainless steel anchor and various other securements available.

RECOMMENDED USE:

Suitable for all flat roofs for attaching platform or single point suspension lines where davits, outriggers or standard anchors cannot be used, such as balconies, atriums, wide cornices or building projections and similar architectural features. Ideal for retrofit.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/ safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC, AWS, and other references. Thaler SJ-34 New-Standard STACK JACK Flashing conforms to CSA B272-93. See separate Thaler FARA Systems Fall Protection literature for specific data.

WARRANTY:

20 year warranty (lifetime on all stainless steel) against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler anchors require no maintenance (maintenance free).

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

Rope Drop anchors: Thaler FARA-180 adhesive bolt galvanized rope drop anchor to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with 4" (102 mm dia. hollow ASTM 500C steel sleeve section (HSS) 1/4" (6 mm) wall thickness x 6" (152 mm) dia., length to suit application, welded to 1/2" x 12" x 12" (12 mm x 305 mm x 305 mm) 44W base plate prepared to receive four 5/8" (16 mm) dia. adhesive anchor bolts (by others); removable cap w/set screw; 1" (25 mm) s.s. cross bar; SJ-34, 7" (178 mm) high New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange]; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture.









Window Wall Showing FARA-200 Monorail Suspended Maintenance System Affixed to Soffit Structure.



Steel Eye Mounted Onto I-Beam

ROOF SPECIALTIES FARA-200 MONORAIL SUSPENDED ACCESS MAINTENANCE SYSTEM (Exposed | Beam)

DESCRIPTION:

The Thaler FARA-200 Monorail consists of an aluminum section I-beam carrier with end stop angles, galvanized clamps, angles for attaching to structure, galvanized connector plate, stainless steel bolts, washers and nuts, and stainless steel trolleys with s.s. eyes (for safety lifeline and primary cable). Workers move along the monorail by pulling themselves foward or backward manually.

PROMINENT FEATURES:

Maintenance free. Structural integrity is backed by high \$7,000,000.00 liability insurance.

OPTIONS:

For more aesthetic applications see Concealed Trolley system, page I-32.

RECOMMENDED USE:

Suitable for all applications for suspending a platform or single point access equipment such as baskets (cages) and manually or power operated boatswain chairs, for window cleaning or other exterior/interior building maintenance.

APPLICABLE STANDARDS:

Thaler Monorail System conforms to all Canadian and U.S. standards, Provincial and State labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL OSHA, AISC, AWS, and other references.

WARRANTY:

20 year warranty against defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require the monorail system be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations. Apart from this requirement, Thaler Monorail Suspended Maintenance System requires no maintenance (maintenance free).

PLANNING SERVICE:

Without obligation, Thaler will provide layout drawings for monorail systems in compliance with all applicable standards, safety regulations and local building codes.

SPECIFICATION (SHORT FORM):

Monorail Suspended Maintenance System: Thaler FARA-200 Monorail Suspended Maintenance System to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with T-6061 aluminum I beam to suit main structure; 1/4" x 4" x 4" (12 mm x 102 mm x 102 mm) steel angles for bolting I-beam to main structure; 3/8" (10 mm) galvanized clamps; 10" (254 mm) wide steel connector plates; s.s. hanger bolts, washers and nuts of sizes shown on drawings; s.s. trolleys with s.s. eyes; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against leaks condensation and defects in materials and/or manufacture.

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, the Thaler FARA-200 Monorail Suspended Maintenance System is installed by placing and bolting I-beam to main structure using angles, clamps and bolts and then installing the stainless steel trolleys over the bottom flange of the I-beam.

ORDERING:

THALER

Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock.

FARA-200 MONORAIL SUSPENDED MAINTENANCE SYSTEM

Front View of monorail





FARA-201 MONORAIL SUSPENDED MAINTENANCE SYSTEM

DESCRIPTION:

The Thaler FARA-201Monorail consists of an aluminum section C-channel beam carrier with end stop angle, galvanized plates, connector plates, and monorail holder, stainless steel bolts, washers and nuts, trolleys with s.s. eyes (for safety lifeline and primary cable). Workers move along the monorail by pulling themselves forward or backward manually.

PROMINENT FEATURES:

Maintenance free. Structural integrity is backed by high \$7,000,000.00 liability insurance.

OPTIONS:

For more aesthetic applications, see Con-cealed Trolley system, page I-31. Other methods of securing to main structure.

RECOMMENDED USE:

Suitable for all applications for suspending a platform or single point access equipment such as baskets (cages) and manually or power operated boatswain chairs, for window cleaning or other exterior/interior building maintenance.

APPLICABLE STANDARDS:

Thaler Monorail System conforms to all Canadian and U.S. standards, Provincial and State labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, WCA, OSHA, CAL OSHA, AISC, AWS, and other references.

WARRANTY:

20 year warranty against defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require the monorail system be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations. Apart from this requirement, Thaler Monorail Suspended Maintenance System requires no maintenance (maintenance free).

PLANNING SERVICE:

Without obligation, Thaler will provide layout drawings for monorail systems in compliance with all applicable standards, safety regulations and local building codes.

SPECIFICATION (SHORT FORM):

Monorail Suspended Maintenance System: Thaler FARA-201 Monorail Suspended Maintenance System to [CSA 291-02] [OSHA 1910.66, Sub parts D and F] with T-6061 aluminum C channel beam to suit main structure; 1/4" x 5" x 7" (12 mm x 127 mm x 178 mm) galvanized hanger welded to 3/8" x 10" x 10" (10 mm x 254 mm x 254 mm) underbeam plate for bolting to main I-beam structure; 10" (254 mm) wide steel upper plate; s.s. hanger bolts, washers and nuts of sizes shown on drawings; trolleys with s.s. eyes; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against leaks, condensation and defects in materials and/or manufacture.

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, the Thaler FARA-201 Monorail Suspended Maintenance System is installed by bolting C channel-beam to main structure using bolted hangers and then installing the trolleys.

ORDERING:

THALER THALER

Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock.





FARA-710/-720 TRAVEL RESTRAINT ROOF ANCHORS PATENTED

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, Thaler FARA-710/-720 travel restraint anchors are installed by bolting the anchor to the top chord of the OWSJ as per layout drawings, using a maximum torque of 75 lbf (100 Nm), then placing the flashing sleeve over the anchor and roof membrane, and as follows:

BUR: Set flashing deck flange in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set flashing flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer. Do not overheat (melt) EPDM base seal.

Single Ply: Set deck flange in layer of membrane adhesive and extend single ply up sleeve to highest elevation possible and clamp membrane to STACK JACK Flashing. Note: for PVC membrane, specify PVC coated STACK JACK by adding suffix P to end of model number, e.g. FARA-710-A-P; weld roofing to deck flange using PVC torch.

Precautions: Apply an asphaltic or other type protective coating to exposed aluminum STACK JACK Flashing to a height of 2" (51 mm) above a limestone ballast to avoid corrosive reaction. Also, if coating deck flange with bituminous paint on site, allow 24 hours for drying before applying roof membrane.

Ordering: Specify flashing material required by adding the appropriate suffix to model number e.g. FARA-710-A, for aluminum, etc. Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock.

ROOF SPECIALTIES FARA-710/-720 TRAVEL RESTRAINT ROOF ANCHORS

DESCRIPTION:

Thaler FARA-710 (low model) and FARA-720 (high model) Travel Restraint Anchors consist of a urethane insulated, galvanized hollow steel post (HSS) welded to a mounting plate for securing to a structural roof deck, and an aluminum, copper or stainless steel flashing sleeve. The anchors are rated for a maximum applied force of 1500 lbs (6.7 kN). The top of the anchor is fitted with a very high strength, galvanized forged eye. Anchors are spaced maximum 30'-0" (9.1 m) on centers. A horizontal rope or cable is passed through the eyes and secured at terminal ends. Workers then hook their fall arrest lanyard onto the horizontal line. Travel restraint anchors are typically located minimum 6'-0" (2 m) back from the roof edge wherever there is a fall hazard e.g. low parapet or eaves, etc.

PROMINENT FEATURES:

Condensation free and maintenance free. Anchor integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS:

PVC coated flashing deck flange for PVC roof membrane. Bituminous painted flashing deck flange for BUR and ModBit roof membrane. Other securements (see Fastening Methods at left).

RECOMMENDED USE:

Suitable for all flat roofs for securing workers' fall arrest lanyard thereby limiting their movement when working near a vertical drop e.g. roof eaves or low parapet. Specify high model when required by code. These anchors are not to be used to secure vertical lifelines and suspension lines.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC, AWS, and other references. Thaler SJ-37 New-Standard STACK JACK Flashing conforms to CSA B272-93. See separate Thaler FARA Systems Fall Protection literature for specific data.

WARRANTY:

20 year warranty against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler anchors require no maintenance (maintenance free).

PLANNING SERVICE:

Thaler will provide layout drawings for anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM):

Travel restraint roof anchors: Thaler [FARA-710] [FARA-720] anchors including appropriate mounting hardware for fastening to structural roof deck; to [CSA 291-02] [OSHA 1910.66, Sub parts D and F] with: galvanized forged 1018 steel eye; urethane insulated, hollow, hot dipped galvanized ASTM 500C steel post section (HSS) 1/4" (6 mm) wall thickness x 2-3/8" (60 mm) dia. x [18" (457 mm)] [36" (915 mm)] high welded to 44W base plate: [SJ-37, 7" (178 mm) mill finish 1100-0T alloy aluminum] [.032" (0.853 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and IPVC coated deck flange] [bituminous painted deck flange]; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture.



Specify fastening method required by adding the appropriate suffix to model number e.g. FARA-710-T5

ALTERNATIVE FASTENING METHODS





FARA-1NS/-11NS/-11UNS "FIXED EYE" FALL ARREST ROOF ANCHOR (Non-Standard Height) PATENTED

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, the Thaler FARA-1NS/-11NS/-11UNS Fall Arrest Roof Anchors are installed by through-bolting the anchor to the structural concrete roof deck as per Thaler layout drawings, deforming the exposed bolt threads at both ends, using maximum torque of 125lbf-ft. (169Nm), then placing the flashing sleeve over the anchor and roof membrane, and as follows:

BUR: Set flashing deck flange in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set flashing flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer. Do not overheat (melt) EPDM base seal.

Single Ply: Set deck flange in layer of membrane adhesive and extend single ply up sleeve to highest elevation possible and clamp membrane to STACK JACK Flashing. Note: for PVC membrane, specify PVC coated STACK JACK by adding suffix P to end of model number, e.g. FARA-1NS-A-P; weld roofing to deck flange using PVC torch.

Precautions: If coating deck flange with a bituminous paint on site, allow 24 hours for drying before applying roof membrane.

Ordering: Specify flashing material required by adding appropriate suffix to model number e.g. FARA-1NS-A, for aluminum, etc. Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock. Note: The FARA-11NS stainless steel forged eye has a galvanized finish over top of the stainless steel. The process of galvanizing the lower part of the anchor requires the entire anchor to be dipped in the zinc bath, thereby covering the stainless steel eye. If there is any question about product received on site, the eye material may be checked with a magnet. Type 304 stainless steel is non-magnettic.

ROOF SPECIALTIES FARA-1NS/-11NS/-11UNS "FIXED EYE" FALL ARREST ROOF ANCHORS (Non-Standard Height, For Lightweight Fill, Bolt Through)

DESCRIPTION:

Thaler FARA Non-Standard height bolt-through anchors consist of a urethane insulated hollow steel post (HSS) with base plate, single stainless steel bolt for securing to structural concrete roof slab, and flashing sleeve. The top of the anchor is available with three different options:

- 1. With very high strength, galvanized forged eye (FARA-1NS). All stainless steel (FARA-11NSSS).
- 2. With very high strength stainless steel forged eye (FARA-11NS). All stainless steel (FARA-11NSSS).
- With high strength stainless steel U Bolt (FARA-11UNS). All stainless steel (FARA-11UNSSS).

PROMINENT FEATURES:

Extra long to accommodate lightweight concrete filled roofs. Condensation and maintenance free (attractive, neat flashing never needs caulking; see Thaler EPDM Flashing Seals literature). Anchor integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS:

All stainless steel anchor. PVC coated flashing deck flange for PVC roof membrane. Bituminous painted flashing deck flange for BUR and ModBit roof membrane. See other Thaler FARA models for different securements.

RECOMMENDED USE:

Suitable for all flat roofs employing lightweight concrete fill (crickets and saddles for roof drainage slopes) as fall arrest anchors for securing workers' lifelines or the tying back of suspended access equipment such as outrigger beams and parapet wall clamps. Also suitable for suspension of boatswain chair.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC, AWS, and other references. Thaler SJ-34 New-Standard STACK JACK Flashing conforms to CSA B272-93. See separate Thaler FARA Systems Fall Protection literature for specific data.

WARRANTY:

20 year warranty (lifetime on all stainless steel) against leaks, condensation and defects in material and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler anchors require no maintenance (maintenance free).

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest roof anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM): Fall arrest roof anchors:

Thaler [FARA-1NS with galvanized forged 1018 steel eye] [FARA-11NS with Type 304 stainless steel forged eye] [FARA-11UNS with Type 304 stainless steel U bolt] roof anchor to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: urethane insulated, hollow, hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 24" (610 mm) high welded to 3/4" x 8" x 8" (19 mm x 203 mm x 203 mm) 44W base plate; single 1" (25 mm) Type 304 s.s. bolt with EPDM weather seal, top nut and washer, and Type 304 s.s. 1/4" x 4" x 4" (6 mm x 102 mm x102 mm) underdeck plate, lock washer and nut; SJ-34, 7" (178 mm) high New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange][bituminous painted deck flange]; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture



FARA-5NS/-15NS/15UNS EPDM ROOF "FIXED EYE" FALL ARREST ROOF ANCHORS (Non-Standard Height, For Tapered Insulation, Cast-In-Place)

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, the Thaler FARA-5NS/-15NS/-15UNS Fall Arrest Roof Anchors are installed by through-bolting the anchor to the structural concrete roof deck as per Thaler layout drawings, using a maximum torque of 125 lbf-ft. (169 Nm), deforming the exposed bolt threads, then placing the counterflashing sleeve over the anchor, roof membrane, and EPDM flashing, and as follows:

EPDM: Set flashing deck flange in layer of membrane adhesive and extend single ply up sleeve to highest elevation possible as per membrane manufacturer's recommendations.

Ordering: Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock. Note: The FARA-15NS stainless steel forged eye has a galvanized finish over top of the stainless steel. The process of galvanizing the lower part of the anchor requires the entire anchor to be dipped in the zinc bath, thereby covering the stainless steel eye. If there is any question about product received on site, the eye material may be checked with a magnet. Type 304 stainless steel is non-magnetic.

ROOF SPECIALTIES FARA-5NS/-15NS/-15UNS EPDM ROOF "FIXED EYE" FALL ARREST ROOF ANCHORS (Non-Standard Height, For Tapered Insulation, Cast-In-Place)

DESCRIPTION:

Thaler FARA Non-Standard height cast-in-place anchors consist of a urethane insulated hollow steel post (HSS) with base plate, single stainless steel bolt for securing to structural concrete roof slab, and flashing sleeve. The top of the anchor is available with three different options:

- 1. With very high strength, galvanized forged eye (FARA-5NS). All stainless steel (FARA-15NSSS).
- 2. With very high strength stainless steel forged eye (FARA-15NS). All stainless steel (FARA-15NSSS).
- With high strength stainless steel U Bolt (FARA-15UNS). All stainless steel (FARA-15UNSSS).

PROMINENT FEATURES:

Extra long to accommodate tapered roof insulation. Condensation free and maintenance free (attractive, neat flashing never needs caulking; see Thaler EPDM Flashing Seals literature). Anchor integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS:

All stainless steel anchor. PVC coated flashing deck flange for PVC roof membrane. Bituminous painted flashing deck flange for BUR and ModBit roof membrane. See other Thaler FARA models for different securements.

RECOMMENDED USE:

Suitable for all flat roofs employing EPDM membrane and tapered insulation (for roof drainage slopes) as fall arrest anchors for securing workers' lifelines or the tying back of suspended access equipment such as outrigger beams and parapet wall clamps. Also suitable for suspension of boatswain chair.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC, AWS, and other references.

WARRANTY:

20 year warranty (lifetime on stainless steel) against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon reduest.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler anchors require no maintenance (maintenance free).

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest roof anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM): Fall arrest roof anchors:

Thaler [FARA-5NS with galvanized forged 1018 steel eye] [FARA-15NS with Type 304 stainless steel forged eye] [FARA-15NS with Type 304 stainless steel U bolt] roof anchor to [CSA 291-02] [OSHA 1910.66, Sub parts D and F] with: urethane insulated, hollow, hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 18" (457 mm) high welded to 3/4" x 8" x 8" (19 mm x 203 mm x 203 mm) 44W base plate; single 1" (25 mm) Type 304 s.s. bolt with EPDM weather seal, top nut and washer; manufacturer's standard counterflashing of .064" (1.6 mm) mill finish 1100-0T alloy aluminum with EPDM Triple Pressure Grommet Seal; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Braunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials



FARA-6NS/-16NS/-16UNS WOOD DECK "FIXED EYE" FALL ARREST ROOF ANCHORS (Non-Standard Height, Bolt Around OWSJ)

INSTALLATION:

"Installation Instructions" are provided with every Thaler product. Essentially, the Thaler FARA-6NS/-16UNS anchors are installed by bolting the anchor to the top chord of the OWSJ as per Thaler layout drawings, using a maximum torque of 75 lbf-ft. (100 Nm), reinforcing the base plates with a crosstube, then placing the flashing sleeve over the anchor and roof membrane, and as follows:

BUR: Set flashing deck flange in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

ModBit: Torch membrane until bitumen is fluid and set flashing flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer. Do not overheat (melt) EPDM base seal.

Single Ply: Set deck flange in layer of membrane adhesive and extend single ply up sleeve to highest elevation possible and clamp membrane to STACKJACK Flashing. Note: for PVC membrane, specify PVC coated STACKJACK by adding suffix P to end of model number, e.g. FARA-6NS-A-P; weld roofing to deck flange using PVC torch.

Precautions: If coating deck flange with a bituminous paint on site, allow 24 hours for drying before applying roof membrane.

Ordering: Specify flashing material required by adding appropriate suffix to model number e.g. FARA-6NS-A, for aluminum, etc. Available throughout North America. Contact Thaler for list of distributors and current cost information. Most products are readily available from stock. Note: The FARA-16NS stainless steel forged eye has a galvanized finish over top of the stainless steel. The process of galvanizing the lower part of the anchor requires the entire anchor to be dipped in the zinc bath, thereby covering the stainless steel eye. If there is any question about product received on site, the eye material may be checked with a magnet. Type 304 stainless steel is non-magnetic.

ROOF SPECIALTIES FARA-6NS/-16NS/-16UNS WOOD DECK "FIXED EYE" FALL ARREST ROOF ANCHORS Non-Standard Height, Bolt Around OWSJ

DESCRIPTION:

Thaler FARA Non-Standard height bolt around OWSJ anchors consist of a urethane insulated hollow steel post (HSS) with base plate, four stainless steel bolts and under-joist plate and cross tube for securing to an OWSJ, and flashing sleeve. The top of the anchor is available with three different eye options: 1. With yerv high strength, galvanized forced eve

- (FARA-6NS). All stainless steel (FARA-16NSSS). 2. With very high strength stainless steel forged eye
- (FARA-16NS). All stainless steel (FARA-16NSSS).
- With high strength stainless steel U Bolt (FARA-16UNS). All stainless steel (FARA-16UNSSS).

PROMINENT FEATURES:

Extra long to accommodate wood decks with plenum space. Condensation and maintenance free (attractive, neat flashing never needs caulking; see Thaler EPDM Flashing Seals literature). Anchor integrity is backed by \$7,000,000.00 liability insurance.

OPTIONS:

All stainless steel anchor. PVC coated flashing deck flange for PVC roof membrane. Bituminous painted flashing deck flange for BUR and ModBit roof membrane. See other Thaler FARA models for different securements.

RECOMMENDED USE:

Suitable for all flat roofs employing wood deck and OWSJ as fall arrest anchors for securing workers' lifelines or the tying back of suspended access equipment such as outrigger beams and parapet wall clamps. Also suitable for suspension of boatswain chair.

APPLICABLE STANDARDS:

Thaler FARA anchors conform to all Canadian and U.S. standards, provincial and state labour/safety codes and materials standards relating to anchor fabrication, window cleaning and other suspended maintenance operations. Conformance includes CSA, OML, ASME, ANSI, IWCA, OSHA, CAL, OSHA, AISC, AWS, and other references. Thaler SJ-37 New-Standard STACKJACK Flashing conforms to CSA B272-93. See Thaler FARA Systems Fall Protection literature for specific data.

WARRANTY:

20 year warranty (lifetime on stainless steel) against leaks, condensation and defects in materials and/or manufacture when installed in accordance with Thaler "Installation Instructions". Copy of Warranty Certificate available upon request.

MAINTENANCE:

Regulatory authorities require anchors to be inspected annually with inspection data (date, inspector's name and comments) recorded in the Fall Protection Maintenance Log Book for Window Cleaning and/or Other Suspended Access Maintenance Operations (including travel restraint). Apart from this requirement, Thaler anchors require no maintenance (maintenance free).

PLANNING SERVICE:

Thaler will provide layout drawings for fall arrest anchors in compliance with all applicable standards, safety regulations and local building codes. A nominal, low-cost fee is charged for this service (refunded if Thaler secures the contract to supply the anchors).

SPECIFICATION (SHORT FORM) Fall arrest roof anchors:

Thaler [FARA-6NS with galvanized forged 1018 steel eye] [FARA-16NS with Type 304 stainless steel forged eye] [FARA-16UNS with Type 304 stainless steel U bolt] roof anchor to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: urethane insulated, hollow, hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 26" (660 mm) high welded to 3/4" x 8" x 8" (19 mm x 203 mm x 203 mm) 44W base plate; 3/4" x 8" x 8" (19 mm x 203 mm x 203 mm) under-joist plate and 1/4" x 4" x 4" (6 mm x 102 mm x 102 mm) HSS crosstube assembly; four 3/4" (19 mm) Type 304 s.s. bolts with lock washers and nuts; SJ-37, 7" (178 mm) high New-Standard STACKJACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange]; manufactured by Thaler Metal Industries, 1-800-387-7217 (Mississauga, Ontario, Canada) or 1-800-576-1200 (New Brunfels, TX), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture. ture.(Niagara Falls, NY), installed as per manufacturer's written instructions. Provide 20 year warranty against defects in materials and/or manufacture.





ROOF SPECIALTIES CSA Z91-02 Health and Safety Code for Suspended Equipment Operations

This document contains extracts from the CSA Z91-02 Standard relating to fall protection anchorages. For complete data, refer to the actual standard.

As indicated by the title change, the scope of this edition of the Standard has been significantly expanded from the previous editions. The focus has broadened from one skilled trade group (window cleaners) to all persons whose profession demands that they work from equipment(for example, swing stages, bosun's chairs, and inspection cages) suspended from the side of buildings or large structures.

This Standard outlines the safe use of suspended equipment for the purposes of building maintenance, repairs, cleaning, renovation work, and inspections. It was prepared by knowledgeable and experienced persons employed in those areas and industries that are involved in building maintenance operations and construction trades.

The Standard is recommended for adoption by federal, provincial, and municipal authorities and by provincial safety associations. It is also recommended for use by architects, engineers, and contractors engaged in constructing commercial, industrial, residential, or multi-use buildings and by companies engaged in building maintenance operations.

PARAGRAPH REFERENCE	REQUIREMENT
Scope	
1.1	This Standard includes requirements for the safe operation of various types of suspended equipment used to gain access to interior or exterior, or both, sides of buildings or structures. Much of the equipment referred to in this Standard is designed, installed, inspected, and tested in accordance with CAN/CSA-Z271. It does not include crane-suspended platforms or baskets (see CAN/CSAZ150), multi-point bridge platforms, or hanging scaffolds.
1.2	This Standard specifies the safety requirements for suspended equipment and rolling stages normally used for (but not limited to) window cleaning operations, general cleaning, repair, painting, maintenance, inspection, and construction operations and similar work.
	Note: This coverage of a wide range of professional trades is greatly expanded from the focus on window cleaning in previous editions of the Standard.
Fall Protection	
4.9	Persons working on a surface within 2 m of an unprotected edge, where they may fall onto a hazardous substance or object, or at a height of 3 m or more above the ground, the adjacent roof level, or an acceptable landing without the protection of guardrails or other devices to guard against falls, shall wear a fall-arrest full body harness with lanyard. The fall protection system shall be attached to anchors, or to substantial members on the building, at all times.
Inspection and Maintenance Records	
5.1	Before using any suspended equipment or permanently installed support systems, operators should verify that mainte- nance or inspection logs, or both, indicate that the system has been subjected to required maintenance or inspections, or both. If the inspection logs are not present or do not indicate that the required maintenance and inspection have been performed, the equipment should not be used until these requirements can be assured.
5.2.3	Suspension lines shall be in line with the point of suspension for their entire length unless the suspension system is designed specifically for angled line work.
5.2.4	Where the suspension height exceeds 90 m, mechanical winch equipment shall be used to raise or lower the lines.



PARAGRAPH REFERENCE	
Lifeline and Tie-back Anchors	
5.4.1	Tie-back and lifeline anchors shall be in accordance with CAN/CSA-Z271
5.4.2	Lifelines and suspension system tie-backs shall be secured to separate anchors except as noted in Clouse 5.4.3
5.4.3	Double-eye anchor system may be used to secure both a tie-back and a lifeline, provided that the anchor system has been designed for the application of dual loading (both in form and in strength).
5.4.4	Lifeline and tie-back anchors for portable outriggers should be located in line with the point of suspension whenever practical but shall not be offset more than 3 m measured horizontally from running at the right angle to the building face at the point of suspension. The angle created by the offset distance shall not exceed 25° (see Figure 1).
	Note: When the tie-back is not in line with the outrigger, additional lunes may be used to secure the outrigger.
5.4.5	The tie-back anchor elevation for a portable outrigger shall not be more than 1 m above the point of suspension.
5.4.6	Where the requirements of Clouse 5.4.4 cannot be met, line deflectors attached at the perimeter of the structure may be used where the offset angle of a lifeline exceeds 25°. Deflectors shall be engineered to resist all applied loading and shall support the line(s) in a manner that does not reduce the strength of the line or cause damage to the line.
	Note: the applied loading is considered to be derived from the 22.2 kN (5000 lbf) tie-back anchpr load requrement specified in CAN/CSA-Z271.
	Figure 1 Tie-Back Angles (Plan View) (see Clause 5.4.4.)
Support Systems	
5.5.1	Roof supports, hangers, and support systems components for suspended equipment shall conform to the requirements of CAN/CSA-Z271.
5.5.2	The supports shall be located so as to maintain the structural integrity and stability of the suspended equipment.
5.5.4	Where there is a risk of equipment falling over the edge of the roof during set-up, it shall be secured before installation
5.5.5	During movement of unsecured portable equipment along the roof perimeter, the centre of gravity of the equipment shall be not higher than 1 m above the walking surface. During installation, the centre of gravity shall remain within the building or structure, and the equipment shall be secured by a safety cable prior to raising it above the 1 m level.
5.5.6	Unless protected by a parapet wall, or guardrail, not less than 1 m high, workers shall be secured by a fall-arrest system before moving within 2 m of the work surface edge.
5.5.7	Outrigger beams and parapet wall clamps shall be installed and tied back to the anchors in a secure manner. Tie-backs shall be 8 mm (5/16 in) wire rope or other lines of equivalent strength. Tie-backs shall be installed at right angles to the face of the building wherever possible.
5.5.8	Outrigger beams and other portable suspension supports shall not be made of wood and shall be counter-balanced or otherwise secured to support a mass no less than 4 times the static load, or 4 times the hoist capacity when using electrically powered hoists.
	Note: The static load for manually operated platforms is considered to be the total of the platform dead weight, including the hoists and accessories, divided by the number of suspension ropes plus the full-rated live load capacity of the platform.
5.5.9	Supports shall be labeled to indicate maximum capacity. Counterweighted systems shall be labeled to indicate counterweight requirements. The weight of each counterweight used shall be permanently marked on the body of the counterweight.
5.5.10	Where counterweights are used, they shall be securely attached to the outrigger beams and shall be made of solid, non-brittle material.
5.5.11	A parapet wall or other part of the building on which the support system is to be placed shall be verified and documented as being structurally adequate to support the suspension system loads by a professional engineer before rigging.

PARAGRAPH REFERENCE	REQUIREMENT
Suspended Working Units	
5.6.1	Suspended platforms shall be designed and constructed in accordance with CAN/CSA-Z271.
5.6.2	When equipment is used on suspension heights exceeding 45 m (148 ft), stabilization provisions in accordance with CAN/CSA-Z271 shall be used.
5.6.3	Descent control-supported bosun's chair systems shall not be used at suspension heights in excess of 46 m unless stabiliza- tion of the working unit is provided. If stabilization is provided, the suspension height shall not exceed 92 m. Workstation stabilizing devices such as suction cups are acceptable for this purpose.
5.6.4	Operating and maintenance instructions shall be provided with suspended working units. Operators shall read and understand operating instructions before using equipment.
Skylights	
6.1.1	Special safety precautions shall be followed when working on or under skylights.
6.1.2	The creation of a work plan, paying particular attention to the evaluation of the conditions, shall precede work on or under skylights.
6.1.3	Workers shall not walk on or place any significant loads on any overhead glass or frames, or both, in a skylight or atrium unless the glazing system has been engineered to safely permit this access method.
6.1.4	Complete fall protection shall be used whenever a worker is exposed to a fall of 3 m or more.
Woking from Operable Windows	
6.2.1	Reaching out of a window may be done if no more than the worker's upper body is extended out of the window and both feet are firmly on the floor.
6.2.2	The worker shall not place any body weight on the window or the window frame while reaching out.
6.2.3	Complete fall protection shall be used if the preceding conditions cannot be met.
Rigging from Sloped Roofs & from Multiple roof levels	
6.4	Complete fall protection shall be used whenever a worker is engaged in rigging or handling equipment on a sloped roof and is exposed to a fall of 3 m or more. Fall-arrest equipment shall be used when re-rigging equipment from drop to drop on sloped roofs.
Rigging over Gaurdrails	
6.5	When primary or secondary support lines are to be rigged over a guardrail (surface), the guardrail shall be engineered to support the applied loads.
Securing Equipment	All items shall be tied back to an anchor when a falling danger exists.
Transfer Techniques	
6.7	Whenever a worker is moving from one working position to another (stage to stage, stage to balcony, chair to chair, equipment to ledge) and the worker is exposed to a fall of 3 m or more, complete fall protection shall be used.
Periodic Inspection and testing of permanently installed equipment 7.2.1.1	All permanently installed systems shall be inspected and tested by a professional engineer, or a qualified person under the supervision of a professional engineer, prior to being placed in service to ensure compliance with this Standard, CAN/CSA-Z271, and the design drawings. See Clause 8.3.8.1 of CAN/CSA-Z271.
7.2.1.2	A similar inspection shall be performed following an alteration to an existing installation.

PARAGRAPH REFERENCE	REQUIREMENT
Visual Inspection Prior To Use	
7.2.2	A visual inspection of the equipment shall be performed by the user prior to assembly and use, and during use, of the equipment. Those components that have defects shall be withdrawn from service for corrective action.
7.2.3.1	Periodic inspection and/or testing of the equipment shall be in accordance with the recommendations of the manufacturer. The equipment manufacturer's recommendations shall be followed for testing, servicing, and inspection. Deficiencies shall be corrected before the equipment is put into service. See Clause 8.3.8.3.4 of CAN/CSA-Z271
Structural Components	
7.2.4.1	Structural components of the equipment and attachments to the structure shall be inspected or tested, or both, at intervals not exceeding 12 months unless more frequent inspections are required by the manufacturer of the system. See Clause 8.3.8.3.5 of CAN/CSA-Z271.
7.2.4.2	The inspection and testing shall be performed by professional engineer or a qualified person under the supervision of a professional engineer.
7.2.4.3	The inspection shall include, but not be limited to, a) a review of the design drawings to ensure compliance with current regulations, standards, and engineering standards; b) an inspection of the system to ensure compliance with the engineered drawings; and c) an inspection of all exposed, visible, and accessible components of the system for signs of distress.
Damaged Equipment	
7.2.5	Equipment involved in an accident or failure shall be inspected for damage by a qualified person. If damage or excessive wear is observed, the equipment shall be replaced.
Inspection and testing of new Anchor Systems	
7.3.1.1	All anchor systems shall be inspected and tested by a professional engineer, or a qualified person under the supervision of a professional engineer, prior to being placed in service to ensure compliance with this Standard, Clause 6.3 of CAN/CSA-Z271, and the design drawings.
7.3.1.2	A similar inspection shall be performed following an alteration to an existing installation.
Inspection and testing of existing Anchor Systems	
7.3.2.1	All anchor systems shall be inspected at intervals not exceeding 12 months.
7.3.2.2	The inspection shall include, but not be limited to, a) a review of the design drawings to ensure compliance with current regulations, standards and engineering standards; b) an assessment of the system to ensure compliance with the engineered drawings; c) an inspection of all exposed, visible, and accessible components of the system for signs of distress; and d) an inspection of all adhesive and expansion fasteners.
Special requirements for adhesive or expansive fastners	
7.3.3.1	Systems incorporating adhesive or expansion fasteners shall also have 100% of the anchors load tested at intervals not exceeding five years and in accordance with Clause 6.3.2. b) of CAN/CSA-Z271.
7.3.3.2	Load testing of adhesive or expansion fasteners shall be witnessed and documented by a professional engineer or a qualified person under the supervision of a professional engineer.
NADA- 1 800 287 7217 U.C. 1 800 57	

Inspection Reports The results of the inspection, testing, and servicing performed shall be documented and filed with the equipment log. 7.4.2 A professional engineer shall propan a report on all hepectors with findings and momendations for repairs or alterations, or both 7.4.3 A suspension system shall not be used until it has been repaired and documented. 7.4.4 A professional engineer shall provide the building-equipment owner with a signed and scaled inspection report upon satisfication in the equipment log. Equipment Log 8.1.1 8.1.2 The equipment log shall contain, but not be limited to, the following information: 8.1.2 The equipment log shall contain, but not be limited to, the following information: 9.1.9 execription and operating instructions (tappiled to permanently installed equipment, including by the owner of the equipment, including by the owner of the equipment only, including by the owner of the equipment of the instructions (tappiled to permanently installed equipment, including by the owner of the equipment, including by the owner of the equipment only, including by the owner of the equipment of the instructions (tappiled to permanently installed equipment, including by the owner of the equipment of the instructions (tappiled to permanently installed equipment), including by the owner of the equipment of the instructions (tappiled to permanently installed equipment), including by the owner of the equipment install instructions on the equipment of instructions or the equipment of the instructions or the equipment of the instruction or the instread in the instructions in the equipment instructi	PARAGRAPH REFERENCE	REQUIREMENT
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b) installation records (applied to permanently installed equipment only), including i) the original installation date; ii) the installation of the equipment; iii) the installed of the equipment; ii) the installation of bears; iii) the installation of bears; iii) the installation of bears; iii) the installation report; iii) the installation report; iii) modifications made to the equipment, including the date and nature of the modifications; iii) modifications made to the equipment; including the date and nature of the modifications; iii) modifications made to the equipment; and v) maintenance requirements of the equipment; and v) maintenance records; including the date and nature of the modifications; iii) modifications made to the equipment; and v) maintenance requirements of the equipment; and v) maintenance requirements of the equipment; and v) maintenance requirements of the equipment; and v) a plan view showing essential structural members, including anchors; b) details of the equipment and fars installation; c) the tage working loads of the equipment and any use restrictions on the equipment; and d) a plan view showing essential structures or other obstacles that impede the safe use or operation, or both, of the equipment. 8.2.2 <	0.1.2	 a) a description and operating instructions (applied to permanently installed equipment only), including i) system description ii) intended usage iii) operating instructions for the equipment; and iv) rigging plans for permanently installed equipment:
 c) records of inspection and maintenance (applied to both temporary and permanently installed equipment), including it annual inspection report(s); ii) modifications made to the equipment, including the date and nature of the modifications; iii) the name of the company performing the modifications; iv) maintenance records, including the date and nature of the modifications and the name of the company performing the modifications and the name of the company performing the maintenance. Roof Plans 8.2.1 A roof plan (see example in Figure 2) showing the location of all the permanently installed components and equipment shall be provided by the building owner. As a minimum, the plan shall include, but not be limited to, a) a plan view showing essential structural members, including anchors; b) details of the equipment and its installation; c) the safe working loads of the equipment to and any use restrictions on the equipment; and d) the safe working loads of the equipment and any use restrictions on the equipment; and d) the safe working loads of the equipment and any use restrictions on the equipment. 8.2.2 The roof plan shall be signed and sealed by professional engineer to ensure compliance with this Standard and with CAN/CSA-Z271 8.2.3 A legible copy of the roof plan shall be posted at every entrance to a roof level. 		b) installation records (applied to permanently installed equipment only), including i) the original installation date; ii) the manufacturer of the equipment; iii) the installer of the equipment; iv) equipment drawings, including, but not limited to, 1) equipment/roof plan; and 2) equipment installation details; and v) initial inspection report; and
Roof Plans 8.2.1 A roof plan (see example in Figure 2) showing the location of all the permanently installed components and equipment shall be provided by the building owner. As a minimum, the plan shall include, but not be limited to, a) a plan view showing essential structural members, including anchors; b) idetails of the equipment and its installation; c) the safe working loads of the equipment and any use restrictions on the equipment; and d) all relevant obstructions and structures or other obstacles that impede the safe use or operation, or both, of the equipment. 8.2.2 The roof plan shall be signed and sealed by professional engineer to ensure compliance with this Standard and with CAN/CSA-Z271 8.2.3		 c) records of inspection and maintenance (applied to both temporary and permanently installed equipment), including i) annual inspection report(s); ii) modifications made to the equipment, including the date and nature of the modifications; iii) the name of the company performing the modifications; iv) maintenance requirements of the equipment ;and v) maintenance records, including the date and nature of the modifications and the name of the company performing the maintenance.
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A legible copy of the root plan shall be posted at every entrance to a root level.	8.2.2	A logible same of the read along shall be posted at every extremes to a read logible

This document contains extracts from Ontario Regulation 527/88 (revised September 26, 1991.) relating to fall protection anchors. Refer also to Reg. 859 as amended by 0. Reg. 523/92

This Regulation applies to employers, including contractors and sub-contractors, who supply window cleaning services, to workers who engage in window cleaning and to owners of buildings where a worker engaging in window cleaning may fall a vertical distance of three meters or more.

Before any worker begins window cleaning at a building for which a suspended scaffold, boatswain's chair or similar single-point suspension equipment is used, every employer, contractor and sub-contractor who proposes to carry out window cleaning at the building shall give notice of the proposed window cleaning by telephone to an inspector in the office of the Construction Health and Safety Branch of the Ministry that is nearest to the building.

PARAGRAPH REFERENCE	REQUIREMENT
Safety Precautions and Requirements	
10.1	If a worker who is not working from a ladder is exposed to the hazard of falling more than three meters, the worker shall use a fall arrest system that is adequately secured to a fixed support and arranged so that the worker cannot fall freely for a vertical distance of more than 1.5 meters.
10.2	The fixed support mentioned in subsection (1) shall be able to resist all arrest forces when a worker falls.
10.3	The fall arrest system mentioned in subsection (1), shall arrest any fall by the worker without applying a peak force to the worker greater than 8 a) kilonewtons; and
10.5	A lifeline used in a fall arrest system, a) shall be used by only one worker at a time; b) shall be free from the danger of being chaffed or cut; c) shall be suspended separately and independently from any suspended scaffold, boatswain's d) chair or similar single-point suspension equipment;
Scaffolds, Boatswain Chairs and Related Equipment	
22.1	Every scaffold, a) shall be capable of supporting at least, (i) two times the maximum load to which it is likely to be subjected without exceeding the allowable unit stresses for the materials of which it is constructed, and (ii) four times the maximum load to which it is likely to be subjected without overturning;
25	Sections 26 to 30 apply in respect of every, a) suspended scaffold that is permanently installed on a building or structure; b) suspended scaffold that is transported in component form and is assembled for use at a work site; and c) boatswain's chair or similar single-point suspension equipment intended for the support of one worker.
28	Every boatswain's chair, d) shall not be used where the descent exceeds ninety meters; e) shall only be used to clean windows within arm's reach of a worker who is freely suspended on the primary support line;
29.1	Every static or horizontal line that is rigged between anchor points and to which lifelines or primary support lines are directly attached shall be used as a professional engineer directs, and the professional engineer shall certify the maximum load to be applied to the static or horizontal line.
29.2	The support capability of an anchor point shall exceed the total breaking strength of all support lines attached to it.
30.1	Every outrigger beam, cornice hook and parapet wall hook that is used to support a primary support line, a) shall be capable of supporting at least four times the maximum load to which it may be subjected, (i) without overturning, and (ii) without exceeding the allowable unit stress for the materials of which it is constructed; b) shall be constructed of steel, aluminum or equivalent material; and c) shall be tied back to a fixed support so as to prevent movement of the outrigger beam, cornice hook or parapet wall hook.
30.2	Every worker who is on, or is in the process of getting on or off a suspended scaffold or boatswan's chair or similar single-point suspension equipment shall be protected by a fall arrest system.

PARAGRAPH REFERENCE	REQUIREMENT
Duties of the Owner of a Building	
39.1	Every owner of a building where a suspended scaffold, boatswain's chair or similar single-point suspension equipment is to be used for window cleaning shall prepare a sketch or sketches showing all anchor points and related structures on the building that are suitable and adequate for the attachment of the suspended scaffold, boatswain's chair or similar single-point suspension equipment and the lifeline.
39.2	The building owner shall provide a copy of the sketch or sketches mentioned in subsection (1) to the person supplying the window cleaning services before the work is begun and no employer may permit a worker to engage in window cleaning using a suspended scaffold, boatswain's chair or similar single-point suspension equipment until the employer has received a copy of the sketches or sketches.
39.3	The building owner shall post a copy of the sketch or sketches mentioned in subsection (1) at the building near the entrance to the roof.
40.1	Every owner of a building where sill work is done shall prepare a sketch or sketches showing all anchor points and related structures on the building that are suitable and adequate for the attachment of a lifeline for a worker who performs the sill work.
40.2	The building owner shall provide a copy of the sketch or sketches mentioned in subsection (1) to the person supplying the window cleaning services before the sill work is begun and no employer may permit a worker to do sill work until the employer has received a copy of the sketches or sketches.
40.3	The building owner shall post a copy of the sketch or sketches mentioned in subsection (1) in a conspicuous place where the sketch or sketches are to come to the attention of any worker who does sill work.
41.1	 The owner of a building mentioned in section 39 or 40 shall cause all anchor points and permanently-installed suspended scaffolds to be inspected by a competent person, a) before being used for the first time; b) thereafter as often as necessary but not less frequently than recommended by the manufacturer of the anchor points or the suspended scaffolds, as the case may be, and in any case, at least once a year; and c) when informed under section 43.
41.3	The competent person making the inspection required by subsection (1) shall immediately upon completion of the inspection report to the building owner any defects or hazardous conditions detected in the anchor points and any permanently-installed suspended scaffold.
41.4	A building owner shall ensure that any faulty anchor point is repaired and is suitable for use for window cleaning and sill work before being used.
41.5	 A building owner shall keep a record of the inspections of any anchor points and any permanently installed scaffold at a building in a log book to be maintained and retained as long as the anchor points and suspended scaffold are used, showing, a) the date on which each inspection is made; b) the name and signature of the person making the inspection; and c) any modifications or repairs made to an anchor point or a suspended scaffold, including the date they are made and the name and signature of the person making the modifications or repairs.
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PARAGRAPH REFERENCE	REQUIREMENT
Duties of Employers, Supervisors and Workers	
42.1	Every employer who proposes to carry out window cleaning using suspended scaffold, boatswain's chair or similar single- point suspension equipment or to carry out sill work shall prepare a work plan in writing, signed by the employer, indicating the manner in which any primary support lines and lifelines used are to be attached to the anchor points or related structures shown on any sketch mentioned in subsection 39(1) or 40(1), and setting such other information as may be required for the safety of workers.
42.2	The employer shall cause a copy of the work plan referred to in subsection (1) to be provided to each worker who engages in window cleaning or sill work at the building and shall retain a copy for examination by an inspector.
42.3	No worker shall begin window cleaning that requires the use of a suspended scaffold, boatswain's chair or similar single-point suspension equipment and no worker may begin doing sill work until the worker has received a copy of the work plan referred to in subsection (1).
43	If an employer, supervisor or worker believes that any anchor point or related structure that is used to support a suspended scaffold, suspended work platform, boatswain's chair, similar single-point suspension equipment or lifeline is defective or inadequate, the employer, supervisor or worker shall inform the building owner of this fact immediately.
44.1	Every employer of a worker who engages in window cleaning using a suspended scaffold, boatswain's chair or similar single-point suspension equipment and every contractor and sub-contractor who proposes to carry out window cleaning in that manner shall appoint a supervisor.
44.2	A supervisor appointed under subsection (1) shall visit the location of the window cleaning operation at least once daily.
45.1	A safety training program shall be established and maintained by every employer whose workers engage in window cleaning using suspended scaffolds, boatswain's chairs or similar single-point suspension equipment to train the workers in common core skills for the safe use of such scaffolds, boatswain's chairs and similar single-point suspension equipment.
45.2	 The common core skills referred to in subsection (1) shall include, a)the proper rigging of support lines; b) the inspection for wear of primary support lines and lifelines; c) the safe use of descent control devices; d) the proper use of fall arrest body harnesses including accepted methods for attaching lifelines to buildings or structures; and e) the safe use of suspended scaffolds, boatswain's chairs or similar single-point suspension equipment.
45.3	No worker who has not successfully completed the training program referred to in subsection (1) shall be permitted to engage in window cleaning using a suspended scaffold, boatswain's chair or similar single-point suspension equipment.
45.4	Subsection (3) does not apply to a worker who, a) is being instructed in the safe use of window cleaning and fall arrest equipment; and b) is accompanied by a person who has successfully completed the training program referred to in subsection (1).
45.5	Every employer shall establish and maintain in writing a list of workers who have successfully completed the training program referred to in subsection (1).
	Note: A worker who has successfully completed the window cleaning safety course offered by the Construction Safety Association of Ontario will be deemed to have successfully completed the training program required by this section.
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ROOF SPECIALTIES CAL OSHA Title 8, Section 3291 Article 5, Window Cleaning

This document contains extracts from the California Code of Regulations, Title 8, Section 3291 (Special Design Considerations - Permanent Roof Top Installations). The applicable section is Subchapter 7 (General Industry Safety Orders) Group 1 (General Physical Conditions and Structures Orders), Article 5 (Window Cleaning).

The extracts pertain to fall protection anchors, including "rope drop" sleeves, roof davit systems, outrigger beams, and roof tie-backs.

The CAL OSHA standard is one of several OSHA standards governing window cleaning and other suspended maintenance operations; the others are OSHA 1910.28, SubPart D (Walking-Working Surfaces), OSHA 1926.500, SubPart M (Fall Protection), and Department of Labor Memorandum to Regional Administrators for Descent Control Devices.

PARAGRAPH REFERENCE	REQUIREMENT
A) General	A Civil or Mechanical Engineer registered in the State of California shall prepare calculations and/or plans substantiat- ing the structural integrity of all facets of the complete installation, including the eyebrow sleeves, roof davit systems, roof outrigger beams, and roof tie-backs. Such plans shall be available to the Division at the installation site. (Title 24, Part 2, Section 2-8505(a).)
B) Projecting Ledges or Eyebrows at Roof Level	(1) Those buildings so designed that projecting ledges or "eyebrows" at the roof or intervening levels prohibit the normal suspension of ropes supporting scaffolds, shall be provided with sleeves that extend through the ledge or eyebrow. The minimum inside diameter of the sleeve shall be 6 inches to permit the passage of shackles, sockets, clamps and other rigging devices. The centeron-center spacing of sleeves shall be consistent with the length of the suspended scaffold to be utilized, but in no case shall this spacing exceed 24 feet for transportable scaffolds. Sleeves shall not be used as a rigging point unless securely anchored to the structure and be capable of supporting the rated load with a minimum safety factor of four.
	In lieu of the use of sleeves, other means of scaffold support, such as soffit monorail systems, etc. that offer equivalent safety and are acceptable to the Division, may be provided.
	(2) Each sleeve assembly or each scaffold support system shall be provided with a securely affixed durable and readily visible metal plate bearing the rated load and installer's name in letters at least 1/4-inch in height. (Title 24, Part 2, Section 2-8505(b).)
C) Roof Davit	Roof davit systems specifically shall comply with applicable provisions of Article 6 and the following:
Systems	(1) Each davit shall be provided with a securely affixed, durable and readily visible metal plate bearing the following information in letters at least 1/4-inch in height:
	(A) The davit's rated load, based upon a safety factor of 4.
	(B) Manufacturer's name.
	(C) Precautionary warning message prohibiting use of the davit within10 feet of high-voltage lines.
	(2) Provisions shall be made to easily rotate davits while on the scaffold platform or boatswain's chair unless the platform may be safely re-positioned inboard or outboard without the necessity for personnel to stand on unguarded roofs or ledges unless protected by an approved safety belt or the equivalent.
	(3) Portable davit systems shall comply with the applicable provisions of Article 6. (Title 24, Part 2, Section 2-8505(c).)
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PARAGRAPH REFERENCE	REQUIREMENT
D) Outrigger Beams	(1) Outrigger beams shall not be employed on buildings exceeding 130 feet in height unless acceptable to the Division. All outrigger beams shall be designed to support the rated load imparted by the suspended scaffold or boatswain's chair with a safety factor of at least 4. Outrigger beams shall not extend more than 6 feet beyond the face of the building. Only steel or high strength alloy beams shall be used. The inboard end of outrigger beams, measured from the fulcrum point to the anchorage point, shall be not less than 1 1/2 times the outboard end length. The fulcrum point of the beam shall rest on leg(s) or equivalent supports securely attached to the beam and so arranged as to prevent lateral overturning of the beam. Bearing pads shall be securely affixed to each support and shall be securely anchored by means of tension members (tie-down) affixed to the structural frame of the roof in such a manner that applied forces are resisted within allowable limits affording a safety factor of at least 4. All tie-down fittings at the inboard end of the beam shall be of a type that vibration effects shall not produce accidental disengagement. Safety hooks for beam tie-down purposes shall not be used. The use of counterweights at the inboard end of mobile and fixed outrigger beams are prohibited.
	(2) The use of counterweights on the inboard end of portable or transportable outrigger beams shall be permitted only when the following conditions have been met:
	(A) The building on which the counterweight beam is to be used, was constructed prior to July 23, 1990.
	(B) The building was not designed for other suspension systems.
	(C) An Operating Procedures Outline Sheet (OPOS) shall be developed in accordance with Section 3282 (p) of these orders.
	(D) The counterweights shall be secured to the inboard ends of beams and shall consist of non-flowable/solid materials (e.g. concrete, steel, etc.).
	(E) The outrigger shall be secured with a tie-back to a verified anchorage on the building during the entire time of use. The anchorage shall be designed to have a safety factor of not less than four based on the rated capacity of the outrigger.
	(F) The counterweight shall provide a stability factor of at least 4 against overturning or upsetting of the outrigger.
	(G) Each outrigger shall be designed by a registered engineer to support a load of 4 times the rated hoist capacity or the total load whichever is greater. Outrigger beams shall have a minimum rated capacity of 1000 pounds.
	(H) The outrigger beam shall be secured against horizontal movement when in use.
	(I) Portable outriggers weighing more than 80 pounds shall be provided with a stable means for its transport (wheels or cart).
	(J) Each outrigger shall be so located that the suspension wire ropes, for two point suspended working platforms, are hung parallel.
	(K) The parts of sectional outrigger beam(s) (i.e. an outrigger beam(s) consisting of more than one piece) shall be identified (e.g. numbered, color-coded). Parts shall not be interchanged or substituted except with the approval of the manufacturer.
	(3) Each outrigger beam shall be provided with a securely affixed, durable and readily visible metal plate bearing the following information in letters at least 1/4-inch in height:
	(A) The beam's rated load.
	(B) Manufacturer's name.
	(C) Precautionary warning message prohibiting use of the beam within 10 feet of high-voltage lines. (Title 24, Part 2, Section 3105A.4.2)
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PARAGRAPH REFERENCE	REQUIREMENT
E) Portable Outrigger Beams	The use of portable outrigger beams shall comply with the applicable provisions of Article 6. (Title 24, Part 2, Section 2-8505(d).)
F) Roof Tie-Backs	(1) Every building constructed 3 stories or 36 feet or more in height, shall have eyebolts or other permanent devices installed at the roof level for the purpose of securing or tying back suspended scaffold hooks or clamps and safety lines.
	EXCEPTIONS:
	1. Roof tie-backs are not required on buildings employing other acceptable means of permanently installed roof top mainte- nance systems specified in this Article or Article 6.
	2. Eyebolts for roof tie-backs are not required on buildings constructed up to 4 stories or 48 feet in height when building maintenance can be accomplished using extension tools, ladders, approved ground equipment such as scaffolds, or aerial devices designed and used for positioning personnel.
	(2) Such devices should be spaced at approximately 12-foot intervals; however, the spacing shall depend primarily on the availability of roof structural framing members of sufficient strength to safely carry applied loads. Tie-backs may be installed in structural parapets that are of adequate strength to sustain applied loads, but placement shall be as close to the roof level as practicable. Design criteria for tie-backs shall be as follows:
	(A) Drop-forged eyebolts or other component of equivalent strength having at least a 2-inch inside diameter closed "eye."
	(B) Tie-back assembly to be hot dip galvanized or afforded equivalent corrosion resistance.
	(C) Assembly and anchorage provisions adequate to sustain a 5400 pound (tensile) load applied in any direction.
	(3) Roof tie-backs or other devices shall not be installed in a wood framing system.
	A) Suspended scaffolds shall not be permitted unless roof tie-backs or equivalent anchorages are provided. (Title 24, Part 2, Section 2-8505(e).3). Parapets of Excessive Height. Where building parapet heights exceed 42 inches, special provisions shall be employed to provide a safe means of access to the top of the parapet for rigging purposes if such access is nec essary to the safe performance of the work. If such support system as davit/sockets, parapet hooks or clamps, etc., are utilized at the top of parapets, a catwalk platform meeting the applicable sections of these orders, or other equivalent means of affording access for the safe performance of the work shall be provided. (Title 24, Part 2, Section 2-8505(f).)
	NOTE: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code; and Section 18943(b), Health and Safety Code.

PARAGRAPH REFERENCE	REQUIREMENT
Appendix A. Operating Procedures Outline Sheet (OPOS)	An OPOS establishes safe window cleaning and exterior maintenance procedures for buildings and structures. An OPOS shall include all of the necessary elements in pictorial and written form, to instruct employees in the safe use of roof supported building maintenance equpment or window cleaning procedures not covered by these Orders. An OPOS shall contain at least the following elements:
Sheet (or os)	 Isometric or plan view drawing (pictorial drawing) of the building's roof, including the buildings's name, address, and the date the OPOS was prepared; and a. The drawing shall be legible and kept with the building's written assurance; and
	Identification of drop zones, recommended drop sequences, scaffold configurations, and specific building maintenance procedures including the equipment to be used, e.g. permanent roof rigging platform, ground rigged scaffolding, davits, outrigger beams, boatswain's chair or seatboard, etc.; and
	3. Identification of all anchorage points for personal fall arrest systems and building maintenance equipment; and
	4. Identification of personal fall protection requirements and, if applicable, procedures for securing equipment; and
	5. If applicable, identification of all dangerous areas on the roof by highlighting all of the "Danger Zone (s)" on the pictorial drawings(s); and
	If applicable, description of the means and methods to be used to transfer equipment from drop location to drop location or between building levels; and
	7. Identification of equipment limitations, load ratings, and special use conditions; and
	8. Provisions for pre-operational, operation and maintenance inspections; and
	Identification of the access and egress to the work locations and the storage area(s) for the permanent or transportable building maintenance equipment; and
	10. If applicable, indication of the location and method of stabilization provided for the suspended equipment; and
	11. Emergency and rescue procedures, and means of communications to be used during such procedures; and
	12. Method(s) to be used to control employee exposure to falls while they are in the "Danger Zone".
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This document contains extracts from OSHA Standard 1910.66 SubPart F (Powered platforms for building maintenance) relating to fall protection anchors.

The standard covers powered platform installations permanently dedicated to interior or exterior building maintenance of a specific structure or group of structures. This section does not apply to suspended scaffolds (swinging scaffolds) used to service buildings on a temporary basis and covered under subpart D of OSHA 1910.28, nor to suspended scaffolds used for construction work and covered under subpart L of 29 CFR part 1926. Building maintenance includes, but is not limited to, such tasks as window cleaning, caulking, metal polishing and reglazing.

SubPart F is one of several OSHA standards governing window cleaning and other suspended maintenance operations; the others are OSHA 1910.28, SubPart D (Walking-Working Surfaces), OSHA 1926.500, SubPart M (Fall Protection), CAL OSHA, Title 8, Section 3291 (f), Article 5, Window Cleaning (General Industry Safety Order, California Code of Regulations), and Department of Labor Memorandum to Regional Administrators for Descent Control Devices.

PARAGRAPH REFERENCE	REQUIREMENT
Assurance (c)(3)	Building owners of all installations, new and existing shall inform the employer in writing that the installation has been inspected, tested and maintained in compliance with the requirements of paragraphs (g) and (h) of this section and that all protection anchorages meet the requirements of paragraph (l) (c) (10) of appendix C.
Affected Parts of Buildings (e)(1)(i)	Structural supports, tie-downs, tie-in guides, anchoring devices and any affected parts of the building included in the installation shall be designed by or under the direction of a registered professional engineer experienced in such design;
(f)(1)	"General requirements." The following requirements apply to equipment which are part of a powered platform installa- tion, such as platforms, stabilizing components, carriages, outriggers, davits, hoisting machines, wire ropes and electri- cal components.
(f)(1)(i)	Equipment installations shall be designed by or under the direction of a registered professional engineer experienced in such design;
	"Suspension methods". Elevated building maintenance equipment shall be suspended by a carriage, outriggers, davits or an equivalent method.
Affected Parts of Buildings	
(f)(3)(2)	Transportable outriggers may be used as a method of suspension for ground rigged working platforms where the point of suspension does not exceed 300 feet (91.5 m) above a safe surface. Tie-in guide system(s) shall be provided which meet the requirements of paragraph (e) (2) of this section.
(f)(3)(ii)(C)	Each transportable outrigger shall be secured with a tie-down to a verified anchorage on the building during the entire period of its use. The anchorage shall be designed to have a stability factor of not less than four against overturning or upsetting of the outrigger.
(f)(3)(ii)(E)	Each transportable outrigger shall be designed for lateral stability to prevent roll-over in the event an accidental lateral load is applied to the outrigger. The accidental lateral load to be considered in this design shall be not less than 70 percent of the rated load of the hoist.
(f)(3)(ii)(E)	Each transportable outrigger shall be designed to support an ultimate load of not less than four times the rated load of the hoist.
(f)(3)(ii)(G)	Each transportable outrigger shall be so located that the suspension wire ropes for two point suspended working platforms are hung parallel.
(f)(3)(ii)(G)	A transportable outrigger shall be tied-back to a verified anchorage on the building with a rope equivalent in strength to the suspension rope.
(f)(3)(ii)(G)	The tie-back rope shall be installed parallel to the centerline of the outrigger.
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PARAGRAPH REFERENCE	REQUIREMENT
Davits (f)(3)(iii)	Every davit installation, fixed or transportable, rotatable or non-rotatable shall be designed and installed to insure that it has a stability factor against overturning of not less than four.
Ground Rigged Davits System	The point of suspension shall not exceed 300 feet (91.5 m) above a safe surface. Guide system(s) shall be provided which meet the requirements of paragraph (e) (2) of this section;
(f)(3)(iii)(c)(1) (f)(3)(iii)(D)	A rotating davit shall not require a horizontal force in excess of 40 pounds (177.9 n) per person to initiate a rotating movement.
Transportable Davits (f)(3)(iii)(E)(1)	A davit or part of a davit weighing more than 80 pounds (36 kg) shall be provided with a means for its transport, which shall keep the center of gravity of the davit at or below 36 inches (914 mm) above the safe surface during transport:
(f)(3)(iii)(E)(2)	A davit shall be provided with a pivoting socket or with a base that will allow the insertion or removal of a davit at a position of not more than 35 degrees above the horizontal, with the complete davit inboard of the building face being serviced; and
(f)(3)(iii)(E)(3)	Means shall be provided to lock the davit to its socket or base before it is used to suspend the platform.
Two and Four-Point Suspended Working Platform (f)(3)(ii)(M)	A vertical lifeline shall be provided as part of a fall arrest system which meets the requirements of appendix C, for each employee on a working platform suspended by two or more wire ropes, if the failure of one wire rope or suspension attachment will cause the platform to upset. If a secondary wire rope suspension is used, vertical lifelines are not required for the fall arrest system, provided that each employee is attached to a horizontal lifeline anchored to the platform.
Single Point Suspended Working Platform (f)(5)(iii)	Each single point suspended working platform shall be provided with a secondary wire rope suspension system, which will prevent the working platform from falling should there be a failure of the primary means of support, or if the platform contains overhead structures which restrict the egress of the employees. A horizontal lifeline or a direct connection anchorage shall be provided, as part of a fall arrest system which meets the requirements of appendix C, for each employee on the platform.
Periodic Inspection & Tests (q)(2)(i)	Related building supporting structures shall undergo periodic inspection by a competent person at intervals not exceeding 12 months.
(g)(3)(ii)	The building owner shall keep a certification record of each inspection and test required under paragraphs (g) (2) (i) and (ii) of this section. The certification record shall include the date of the inspection, the signature of the person who performed the inspection, and the number, or other identifier, of the building support structure and equipment which was inspected. This certification record shall be kept readily available for review by the Assistant Secretary of Labor or the Assistant Secretary's representative and by the employer.
Maintenance (h)(1)	"General maintenance." All parts of the equipment affecting safe operation shall be maintained in proper working order so that they may perform the functions for which they were intended. The equipment shall be taken out of service when it is not in proper working order.
Personal Fall Protection (j)	"Personal fall protection." Employees on working platforms shall be protected by a personal fall arrest system meeting the require- ments of appendix C, Section I, of this standard, and as otherwise provided by this standard.
	END
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PARAGRAPH REFERENCE	REQUIREMENT (Section I - Mandatory)
C) Design for System Components	 (9) Horizontal lifelines, where used, shall be designed, and installed as part of a complete personal fall arrest system, which maintains a safety factor of at least two, under the supervision of a qualified person. (10) Anchorages to which personal fall arrest equipment is attached shall be capable of supporting at least 5,000 pounds (22.2 kN) per employee attached, or shall be designed, installed, and used as part of a complete personal fall arrest factor of at least two, under the supervision of a qualified person.
E) Care and Use	 (3) Personal fall arrest systems shall be rigged such that an employee can neither free fall more than six feet (1.8 m), nor contact any lower level. (7) Personal fall arrest systems or components subjected to impact loading shall be immediately removed from service and shall not be used again for employee protection unless inspected and determined by a competent person to be undamaged and suitable for reuse.
F) Inspections	(f) Personal fall arrest systems shall be inspected prior to each use for mildew, wear, damage and other deterioration, and defective components shall be removed from service if their strength or function may be adversely affected.
REFERENCE	REQUIREMENT (Section II - Non-Mandatory)
II Test Methods	(2) The anchorage should be rigid, and should not have a deflection greater than .04 inches (1 mm) when a force of 2,250 pounds (10 kN) is applied.
REFERENCE	REQUIREMENT (Section III - Additional Non-Mandatory Guidelines)
H) Tie-off Considerations	 (1) One of the most important aspects of personal fall protection systems is fully planning the system "before" it is put into use. Probably the most overlooked component is planning for suitable anchorage points. Such planning should gently be done before the structure or building is constructed so that anchorage points can be incorporated during construction for use later for window cleaning or other building maintenance. If properly planned, these anchorage points may be used "during" construction, as well as afterwards. (2) Employers and employees should at all times be aware that the strength of a personal fall arrest system is based on its being attached to an anchoring system which does not significantly reduce the strength of the system (such as a properly dimensioned eye-bolt/snap-hook anchorage). Therefore, if a means of attachment is used that will reduce the strength of the system, that component should be replaced by a stronger one, but one that will also maintain the appropriate maximum arrest force characteristics. (4) Tie-off of a rope lanyard or lifeline around an "H" or "I" beam or similar support can reduce its strength as much as force rife around the beam; or the lanyard or lifeline should be protected from the edge: or free fall distance should be greatly minimized. (6) Horizontal lifelines may, depending on their geometry and angle of sag, be subjected to greater loads than the impact force imparted to the lifeline by an attached lanyard is greatly amplified. For example, with a sag angle of 15 degrees, the force amplification is about 2:1 and at 5 degrees sag, it is about 6:1. Depending on the angle of sag, and the line's elasticity, the strength of the horizontal lifeline and the anchorages to which it is attached should be increased for each additional employee to also fail. Horizontal lifeline and anchorage strength should be increased for each additional employee to be tied-off. For these and other reasons, the design of systems using horizontal li
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REFERENCE	REQUIREMENT (Section III - Additional Non-Mandatory Guidelines)
I) Vertical Lifeline Considerations	As required by the standard, each employee must have a separate lifeline when the lifeline is vertical. The reason for this is that in multiple tie-offs to a single lifeline, if one employee falls, the movement of the lifeline during the arrest of the fall may pull other employees' lanyards, causing them to fall as well.
K) Free-Fall Consideration	The employer and employee should at all times be aware that a system's maximum arresting force is evaluated under normal use conditions established by the manufacturer, and in no case using a free fall distance in excess of six feet (1.8 m). A few extra feet of free fall can significantly increase the arresting force on the employee, possibly to the point of causing injury. Because of this, the free fall distance should be kept at a minimum, and, as required by the standard, in no case greater than six feet (1-8 m). To help assure this, the tie-off attachment point to the lifeline or anchor should be located at or above the connection point of the fall arrest equipment to belt or harness. (Since otherwise additional free fall distance is added to the length of the connecting means (i.e. lanyard)). Attaching to the working surface will often result in a free fall greater than six feet (1.8 m). For instance, if a six foot (1.8 m) lanyard is used, the total free fall distance will be the distance from the working level to the body belt (or harness) attachment point plus the six feet (1.8 m) of lanyard length. Another important consideration is that the arresting force which the fall system must withstand also goes up with greater distances of free fall, possibly exceeding the strength of the system.
M) Obstruction Considerations	The location of the tie-off should also consider the hazard of obstructions in the potential fall path of the employee. Tie-offs which minimize the possibilities of exaggerated swinging should be considered. In addition, when a body belt is used, the employee's body will go through a horizontal position to a jack-knifed position during the arrest of all falls. Thus, obstructions which might interfere with this motion should be avoided or a severe injury could occur.
	END

ROOF SPECIALTIES OSHA 1926.500, SubPart M (Fall Protection)

This document contains extracts from OSHA Standard 1926.500 (Fall Protection) relating to fall protection anchors. This subpart sets forth requirements and criteria for fall protection in construction workplaces and directs the reader to other 500 series standards governing the requirements of employers to provide fall protection systems near the edges of roofs or other walking/working surfaces.

The standard is one of several OSHA standards governing window cleaning and other suspended maintenance operations; the others are OSHA 1910.28, SubPart D (Walking-Working Surfaces), OSHA 1910.66, SubPart F (Powered Platforms), CAL OSHA, Title 8, Section 3291 (f), Article 5. Window Cleaning (General Industry Safety Order, California Code of Regulations), and Department of Labor Memorandum to Regional Administrators for Descent Control Devices.

PARAGRAPH REFERENCE	REQUIREMENT
1926.501 General (b)(1) Holes (b)(4)(i) (b)(1)	"Unprotected sides and edges." Each employee on a walking/working surface (horizontal and vertical surface) with an unprotected side or edge which is 6 feet (1.8 m) or more above a lower level hall be protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest systems.
	Each employee on walking/working surfaces shall be protected from falling through holes (including skylights) more than 6 feet (1.8 m) above lower levels, by personal fall arrest systems, covers, or guardrail systems erected around such holes.
196.502 Personal Fall Arrest systems (d)(15)	Anchorages used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds (22.2 kN) per employee attached, or shall be designed, installed, and used as follows: (d) (15) (i)
	as part of a complete personal fall arrest system which maintains a safety factor of at least two; and (d) (15) (ii) under the supervision of a qualified person.
	(d) (16) Personal fall arrest systems, when stopping a fall, shall:
	(d) (16) (i) limit maximum arresting force on an employee to 900 pounds (4 kN) when used with a body belt;
	(d) (16) (ii) limit maximum arresting force on an employee to 1,800 pounds (8 kN) when used with a body harness;
	(d) (16) (iii) be rigged such that an employee can neither free fall more than 6 feet (1.8 m), nor contact any lower level;
(d)(19)	Personal fall arrest systems and components subjected to impact loading shall be immediately removed from service and shall not be used again for employee protection until inspected and determined by a competent person to be undamaged and suitable for reuse.
(d)(21)	Personal fall arrest systems shall be inspected prior to each use for wear, damage and other deterioration, and defective components shall be removed from service.
ROOF SPECIALTIES OSHA 1910.28, SubPart D (Walking-Working Surfaces)

This document contains extracts from OSHA Standard 1926.500 (Fall Protection) relating to fall protection anchors. This subpart sets forth requirements and criteria for fall protection in construction workplaces and directs the reader to other 500 series standards governing the requirements of employers to provide fall protection systems near the edges of roofs or other walking/working surfaces.

The standard is one of several OSHA standards governing window cleaning and other suspended maintenance operations; the others are OSHA 1910.28, SubPart D (Walking-Working Surfaces), OSHA 1910.66, SubPart F (Powered Platforms), CAL OSHA, Title 8, Section 3291 (f), Article 5. Window Cleaning (General Industry Safety Order, California Code of Regulations), and Department of Labor Memorandum to Regional Administrators for Descent Control Devices.

PARAGRAPH REFERENCE	REQUIREMENT
Boatswain's Chairs 1926.501	The workman shall be protected by a safety life belt attached to a lifeline. The lifeline shall be securely attached to substantial members of the structure (not scaffold), or to securely rigged lines, which will safely suspend the worker in case of a fall.
(i)(6)	The roof irons, hooks, or the object to which the tackle is anchored shall be securely installed. Tiebacks when used shall be installed at right angles to the face of the building and securely fastened.
Float or Ship Scaffolds 1910.28(u)(6)	Each workman shall be protected by a safety lifebelt attached to a lifeline. The lifeline shall be securely attached to substantial members of the structure (not scaffold), or to securely rigged lines, which will safely suspend the worker in case of a fall.



ROOF SPECIALTIES

OSHA Department of Labor Memorandum to Regional Administrators for Descent **Control Devices**

This document contains extracts from an OSHA Standards Interpretation and Compliance Letter (04/07/1999 - Procedures and precautions for employees using descent control equipment). The extracts refer to a Memorandum to Regional Administrators (March 12, 1991) from Patricia K. Clark, Director, Directorate of Compliance Programs. The subject relates to a December 5, 1989 letter from Mr. Thomas J. Shepwich to Mr. Carl A. Pedersen regarding **Descent Control Devices.**

The purpose of the memorandum is to clarify statements made in the above-referenced letter regarding the use of descent control equipment by employees performing building exterior cleaning, inspection and maintenance. The extracts pertain to fall protection anchorages.

REQUIREMENT

Descent control equipment (friction devices such as "Sky Genies", "racks" and "figure eights") is not covered by existing Occupational Safety and Health Administration (OSHA) standards. Therefore, the Agency addresses the safety of descent control devices through its enforcement of section 5(a)(1) of the OSH Act. Under this approach, OSHA references the safety principles applicable to similar equipment (in this case, boatswains' chairs, single-point and two-point suspended scaffolds) and national consensus standards (such as ANSI A39.1-1987, with addenda A through C, "Safety Requirements for Window Cleaning") insofar as they are pertinent to the subject matter. As indicated in the December 5, 1989 letter, OSHA allows employees to use descent control equipment, provided that the equipment is used in accordance with the instructions, warnings and design limitations set by manufacturers or distributors. In addition, the Agency expects employers whose employees use descent control devices to implement procedures and precautions, as follows:

1. Training of employees in the use of the equipment before it is used;

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2. Inspection of equipment each day before use;

3. Proper rigging, including sound anchorages and tiebacks, in all cases, with particular emphasis on providing tiebacks when counterweights, cornice hooks, or similar non-permanent anchorage systems are used;

4. Use of a separate fall arrest system (including bodybelt, sit harness, or full body harness; rope grab or similar device; lifeline; and anchorage (all of which are completely independent of the friction device and its support system), so that any failure in a friction device, support seat (or harness), support line, or anchorage system will not affect the ability of the fall arrest system to operate and quickly stop the employee's fall;

5. All lines installed (such as by using knots, swages or eye splices) when rigging descent control devices shall be capable of sustaining a minimum tensile load of 5.000 pounds.

6. Provisions are made for rescue;

7. Ropes are effectively padded where they contact edges of the building, anchorage, obstructions, or other surfaces which might cut or weaken the rope;

8. Provisions are made for intermittent stabilization for descent in excess of 130 feet. In accordance with ANSI A39.1-1987 (and addenda a-c), emergency descent devices are prohibited for use in window cleaning. That statement pertains to devices designed only for emergency use. The statement would not preclude the use of descent control equipment designed to be used for window cleaning, nor would it preclude the use of devices that are designed for both window cleaning and emergency descent, provided these devices are used in accordance with the guidance outlined in this memorandum.

END



ROOF SPECIALTIES

New York State Department of Safety and Health (DOSH) Window Cleaning Fall **Protection Requirements**

This document contains extracts from Part 21 of the DOSH "Industrial Code Rules", "Protection of Persons Employed at Window Cleaning - Structural Requirements, Equipment and Procedures". The extracts pertain to fall protection anchorages.

PARAGRAPH REFERENCE	REQUIREMENT
21.0 Finding of Fact	The board finds that the trade, occupation or process of cleaning the windows of public buildings involves such elements of danger to the lives, health or safety of persons employed therein as to require special regulations for the protection of such persons, in that such trade, occupation or process necessarily involves the constant hazard of falling from dangerous heights and creates a substantial risk of serious injury to such persons and others.
21.1 Application	(a) This Part (rule) applies to the trade, occupation and process of cleaning the windows of the public buildings which are subject to the provisions of section 202 of the Labor Law; it applies also to the owners of such buildings, to the cleaners and their employers, and to all persons providing equipment required by this Part (rule).
21.3 General provisions	 (a) Owner's statement required. Before windows or window anchors are installed in a building subject to section 202 of the Labor Law a sufficient statement of the proposed means and methods of cleaning such windows shall be submitted by the owner (as defined) to the commissioner. (b) Means and methods required. (See §21.4, infra.)
	 (1) No owner shall suffer or permit a cleaner to clean a window of his building unless it has the structural features and the anchors or other fixed devices required by this Part (rule) in respect to the authorized means and methods of cleaning used by the cleaner.
	(2) No employer shall suffer or permit an employee to clean a window otherwise than in accordance with an authorized means and method. Every employer must provide or cause to be provided to a cleaner in his employ the portable equipment, devices and materials specified in respect to the authorized means and methods used by such cleaner.
	(3) No cleaner shall clean any window otherwise than in accordance with an authorized means and method.
	 (d) Defective windows and structures. (1) No owner shall suffer or permit a cleaner to clean any window installed in his building if any part of such window or surrounding structures upon which the cleaner may depend for support is so defective, damaged or deteriorated as to affect its structural strength.
	(2) The owner shall repair or replace any defective part upon which the cleaner may depend for support.
	(e) Unsafe equipment prohibited. (1) No person shall willfully sell, lend, provide or suffer or permit the use of, window cleaning equipment that is unsafe in any respect.
	(h) Installation of unapproved anchors. No person shall install an unapproved anchor.
	(i) Unauthorized installations-removal by owner. Every unapproved anchor and every unauthorized installation of an anchor, and every anchor of which the fastenings or supports are damaged or deteriorated, shall be removed or rendered unusable by detachment of the anchor head.
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PARAGRAPH REFERENCE	REQUIREMENT
21.4 Authorized means and methods	The following means and methods are authorized for window cleaning as hereinafter set forth: (a) Working from safe surfaces. (b) Working from window sills or ledges. (c) Working from ladders. (d) Working from boatswain's chairs. (e) Working from scaffolds.
21.5 Working from safe surfaces	(b) Working surface. In using this method for cleaning from the outside the cleaner shall work from a position on the ground level or on a roof, balcony or other structural part of the building which is capable of sustaining the weight of the cleaner and his equipment. The surface on which the cleaner works shall not be pitched more than one inch in 12 inches. It shall either extend six feet or more about the working position or be provided with a firm railing or parapet at least 32 inches high.
21.8 Working from boatswain's chairs	(a) Approval required over 75 feet. After October 1, 1967, a boatswain's chair which is suspended from a point with an elevation of more than 75 feet above the nearest street or ground surface shall be approved for the specific building and location where it is to be used to clean windows. Approval will not be considered unless other authorized means of cleaning the windows have been found impracticable or impossible due to the exterior features of the building.
	(b) Suspended point height of 75 feet or less. A manually operated boatswain's chair which is suspended from a point with an elevation of 75 feet or less above the nearest street or ground surface is not required to be approved but shall conform to the following requirements:
	(1) Safety belt and lifeline required. Each person working from a boatswain's chair shall be provided with and shall use an approved safety belt and a lifeline consisting of a hanging line and a tail line. The tail line shall be of minimum practical length and shall be attached to the hanging line by an approved special device to allow vertical adjustment of the point of attachment. Exception: See section 23.30 of Industrial Code Part (Rule No.) 23.
	(4) Chairs. Boatswain's chairs and all supports shall be designed and constructed to sustain without failure a minimum load of 600 pounds.
	(6) Anchorage. The object to which the tackle is anchored shall be rigid and of sample strength.
	(c) Powered boatswain's chairs. A powered boatswain's chair used for window cleaning shall be approved in respect to its hoisting machine and shall be subject to the requirements set forth in this section in subdivision (a) and paragraphs (1), (2), (3), (4), (6) and (7) of subdivision (b).
21.9 Working from scaffolds	(a) Compliance with Part (Rule No.) 23. Every scaffold used for cleaning by this method shall be designed, constructed, installed, operated and maintained in compliance with all relevant provisions of Part (Rule No.) 23, Protection of Persons Employed in Construction and Demolition Work, as amended, except as the board may otherwise provide in this Part (rule) or in a resolution of approval of a specific scaffold or type thereof.
	(b) Maintenance and inspection requirements.
	(1) The owner of the scaffold shall establish and maintain a log showing inspection and maintenance work performed on the scaffold. The maintenance schedule and log sheet, recorded on forms furnished by the commissioner, shall be available at the site for use by the commissioner or his authorized representative.
	(2) Prior to being put into operation on any day, the scaffold shall be subjected to a preliminary inspection and test to assure its safe condition. Results of this inspection shall be noted in the log. This inspection shall be performed by the foreman or other responsible person trained in the use and operation of the scaffold.
	(3) Upon discovery of any substantial defect or abnormal condition in the scaffold or any part thereof, the scaffold shall be placed out of operation until such time as the abnormality or defect has been corrected and the scaffold restored to its normal condition.
	(c) Suspended scaffolds - 75 feet or more. Every suspended scaffold so used including both manually or power operated types shall be approved if it is or is intended to be suspended from any point which has an elevation 75 feet or more above the nearest street or ground surface.
	 (d) Suspended scaffolds - not exceeding 75 feet; lifelines. (1) Every scaffold including both manually and power operated types which is suspended or is intended to be suspended from any point not exceeding 75 feet in elevation above the nearest street or ground surface is required to be approved only in respect to any hoisting machine which may be used thereon, provided that all other components comply with Part (Rule No.) 23. A block and tackle is not construed to be a hoisting machine. Any part of such scaffold assembly and suspension which is not named or described in Part (Rule No.) 23 is required to be approved pursuant to section 23.26 of said Part (rule).
	(2) Each person working on such a suspended scaffold shall be provided with and shall use an approved safety belt. Each belt shall have its own lifeline, which shall consist of a hanging line and a tail line. The tail line shall be of minimum practical length and shall be attached to the hanging line by an approved special device to allow vertical adjustment of the point of attachment. The lifeline shall be securely attached to a sufficient anchorage. Exception: See section 23.30 of Industrial Code Part (Rule No.) 23.
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The following chart contains extracts from Industrial Code Part (Rule No.) 23 that have a relationship with Part (Rule No.) 21.

PARAGRAPH REFERENCE	REQUIREMENT
23-1.16 Safety belts, harnesses, tail lines and lifelines	 (a) Approval required. Safety belts, harnesses and all special devices for attachment to hanging lifelines shall be approved. (b) Attachment required. Every approved safety belt or harness provided or furnished to an employee for his personal safety shall be used by such employee in the performance of his work whenever required by this Part (rule) and whenever so directed by his employer. At all times during use such approved safety belt or harness shall be properly attached either to a securely anchored tail line, directly to a securely anchored hanging lifeline or to a tail line attached to a securely anchored hanging lifeline. Such attachments shall be so arranged that if the user should fall such fall shall not exceed five feet. (d) Lifelines. Any hanging lifeline required by this Part (rule) shall be not more than 300 feet in length from the point of suspension to grade, building setback or other surface. Every hanging lifeline shall be securely attached to a sufficient anchorage.
	 (a) Outrigger beams. Outrigger beams shall extend not more than six feet beyond the face of the building or other structure. The inboard ends of outrigger beams, measured from the fulcrum points to the extreme inboard points of support, shall be not less than one and one-half times the outboard ends in length. (b) Inboard supports. The inboard ends of outrigger beams shall be securely supported either by means of struts bearing against the sills in contact with an overhead structure or by means of anchoring tension members such as U-bolts secured to the structural frame of the building or other structure.
23-5.8 All Suspension Scaffolds	 (a) Inspection before installation. All load-carrying parts or components and means of suspension including adequacy of anchorage or support of every suspended scaffold shall be inspected before such scaffold is installed. (b) Suspension from roof hooks or irons. No parapet, curtain wall or similar portion of a building or other structure shall be used to support the roof hooks or irons of any suspended scaffold unless a professional engineer licensed to practice in the State of New York certifies that such parapet, curtain wall or similar portion of a building or other structure is adequate to support the loads intended to be imposed thereon. Such certification shall be kept on the job site available for examination by the commissioner. (c) Installation and use. (1) The installation or horizontal change in position of every suspended scaffold shall be in charge of and under the direct supervision of a designated person. (2) The horizontal displacement of any suspended scaffold platform in a direction perpen dicular to the face of a building or other structure by means of an applied horizontal force shall not exceed one-tenth of the vertical distance from the elevation of the scaffold platform to its point of suspension. Any person who applies such horizontal force to a scaffold platform while he is located on any portion of the building or other structure at a poin more than 10 feet above the ground, grade or equivalent surface shall be provided with and shall use an approved safety belt with a lifeline in compliance with this Part (rule).
23-5.9 Two-point suspension scaffold	 (c) Roof irons. Roof irons or hooks used in connection with two-point suspension scaffolds shall be constructed of mild steel or wrought iron and shall be securely anchored. They shall be provided with tie-backs of at least three-quarters inch manila rope so installed that the tension is at right angles to the face of the building or other structure. (e) Use of two-point suspension scaffolds. (2) Every person located on any two-point suspension scaffold shall be provided with and shall be required to use an approved safety belt or harness together with a separate hanging lifeline in compliance with this Part (rule). END

This document contains extracts from the Fall Protection and Scaffolding Regulations made under Section 82 of the Occupational Health and Safety Act (S.N.S. 1996, c. 7, O.I.C. 96-14, January 3, 1996, N.S. Reg. 2/96). The extracts pertain to fall protection anchorages.

PARAGRAPH REFERENCE	REQUIREMENT
Part II: Fall Protection Fall Protection	(1) Where a person is exposed to the hazard of falling from a work area that is
	(a) 3 m or more above the nearest safe surface or water;
Required	(b) above a surface or thing that could cause injury to the person upon contact; or
	(c) above an open tank, pit or vat containing hazardous material,
	 (i) the person shall wear a fall arrest system that includes a full body harness, a lanyard and an anchor point and that otherwise complies with Section 8,
	(ii) a guardrail shall be provided that meets the requirements of Section 9,
	(iii) a personnel safety net shall be provided that meets the requirements of Section 10,
	(iv) temporary flooring shall be provided that meets the requirements of Section 14, or
	(v) a means of fall protection shall be provided that provides a level of safety equal to or greater than a fall arrest system.
	(2) Despite subsection (1)
	(a) where a person is entering or exiting a work area by a safe means of access and egress, the requirements of subsection (1) do not apply; and
	(b) where work must be performed on or from a vehicle, rail car or other mobile equipment, fall protection is required only where and to the extent reasonably practicable;
	(c) where it would not be practical to perform work other than from a ladder and it is not practical for the worker to maintain three points of contact while performing the work, fall protection is required only where and to the extent practical; and
	(d) where density of tree branches prevents an arborist from crotching, fall protection is required only where and to the extent practical.
	(3) Where a person is exposed to the hazard of falling from a work area that is in a location other than those specified in clauses (1)(a), (b) or (c) and an officer determines that fall protection is required, fall protection shall be used.
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PARAGRAPH REFERENCE	REQUIREMENT
Fall Arrest	(1) A fall arrest system shall
Systems	(a) be adequately secured to
	(i) an anchor point, or
	(ii) a lifeline that is
	(A) securely fastened to an anchor point, or
	(B) attached to a static line that is securely fastened to an anchor point that is capable of withstanding either the maximum load likely to be imposed on the anchor point or a load of 17.8 kN, whichever is greater
	(b) include a lanyard that (i) is attached to an anchor point or lifeline, where practicable, above the shoulder of the user, and
	(ii) complies with CSA Standard Z259.1-1995, "Fall Arresting Safety Belts and Lanyards for the Construction and Mining Industries";
	(c) prevent a free fall greater than 1.22 m where
	(i) the fall arrest system is not equipped with a shock absorption system that complies with CSA Standard Z259.11-M92, "Safety Belts and Lanyards", and that reduces the shock level of any fall to less than 4 kN; or
	 (ii) the combined free fall and shock absorbed deceleration distance exceeds the distance between the work area and a safe surface; and
	(d) include a full body harness that
	(i) is attached to a lanyard,
	(ii) is adjusted to fit the user of the harness, and
	(iii) complies with CSA Standard Z259.10-M90, "Full Body Harnesses".
	(2) A lifeline in a fall arrest system shall
	(d) be securely attached to an anchor point; (i) be used by no more than one person at a time;
	(5) Each component of a fall arrest system, including each lifeline, shall be inspected by a competent person prior to each use to determine whether there are any defective, or otherwise unsafe components and if a defect is observed, no person shall use or permit the use of the system until the defective components are replaced or repaired.
	(6) A fall arrest system that has arrested a fall shall
	(a) be removed from service and inspected by a competent person; and
	(b) be repaired to the original manufacturer's specifications or destroyed, when a defect is observed.
	(7) A static line shall have a nominal diameter of at least 12.7 mm and shall
	(a) be equipped with vertical supports at least every 9 m;
	(b) have a maximum deflection, when taut, of no greater than 381 mm for a 9 m span;
	(c) be equipped with turnbuckles or other comparable tightening device that provides anequivalent level of protection, at the ends of the line;
	(d) be made of Improved Plow Wire Rope;
	(e) be equipped with softeners at all sharp edges or corners to protect against cuts or chafing; and
	(f) be made only of components that are able to withstand either the maximum load likely to be imposed on the components or a load of 8 kN, whichever is greater.

REFERENCE	
Roof Work 17 (1) Where work is being done from or near the edge of a roof that has a slope of less than 3/12 in a subsection 7(1), fall protection shall be provided, in accordance with Section 7.	circumstances described
Suspended (16) Any outrigger or parapet clamp used on a suspended scaffold shall be tied to an anchor point so of the outrigger or clamp.	as to prevent movement
19) A fall arrest system, including a ropegrab and an independent life line, shall be used by all persons uspended scaffold, and by all persons entering onto or leaving a suspended scaffold.	ons working on or from a
(20) Despite subsection (19), where a suspended scaffold has more than one means of support o platform, either of which would prevent collapse of the scaffold in the event of the failure of the other is attached to an adequate anchor point on the platform may be used.	n each side of the work , a fall arrest system that
(21) Despite subsection (19), where the suspended scaffold has more than one means of support of platform, either of which would prevent displacement of the work platform and falls by persons on event of the failure of the other, persons need not use a fall arrest system.	on each side of the work the work platform in the
END	
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This document contains extracts from the Workers' Compensation Board of British Columbia Policy and Legislation, Part 11: Fall Protection/Occupational Health and Safety Regulation ('97). The extracts pertain to fall protection anchorages.

PARAGRAPH REFERENCE	REQUIREMENT
PARAGRAPH REFERENCE GENERAL REQUIREMENTS Obligation to use fall protection	 11.2 (1) Unless elsewhere provided for in this Regulation, an employer must ensure that a fall protection system is used when work is being done at a place (a) from which a fall of 3 m (10 ft) or more may occur, or (b) where a fall from a lesser height involves an unusual risk of injury. (2) The employer must ensure that guardrails meeting the requirements of Part 4 (General Conditions) or other similar means of fall restraint are used when practicable. (3) If the use of guardrails or similar means of fall restraint is not practicable, the employer must ensure that another fall restraint system is used. (4) If the use of a fall restraint system is not practicable, the employer must ensure that another fall.3 (1) The employer must have a written fall protection plan for a workplace if (a) work is being done at a location where workers are not protected by permanent guardrails, and from which a fall of 7.5 m (25 ft) or more may occur,
	 a fall of 7.5 m (25 ft) or more may occur, (b) the employer uses a safety monitor and control zone or other work procedures as the means fall protection, or (c) the board so directs, because a fall may involve an unusual risk of injury. (2) The fall protection plan must be available at the workplace before work with a risk of falling begins. (3) The plan must specify (a) the fall hazards expected in each work area, (b) the fall protection system or systems to be used in each area, (c) the procedures to assemble, maintain, inspect, use and disassemble the fall protection system or systems, and (d) the procedures for rescue of a worker who has fallen and is suspended by a personal fall protection system or system



PARAGRAPH REFERENCE	
ANCHORS	11.13
General Requirements	(1) A lifeline, or a lanyard used without a lifeline, must be secured to an anchor.
	(2) An anchor plate with multiple attachment points designed to support combinations of suspension lines, tie-back lines and lifelines must be certified in writing by a professional engineer.
	(3) A temporary anchor must be removed upon completion of the work for which it was intended.
Fall Arrest Anchors	11.15
	In a fall arrest system, an anchor for a vertical lifeline or for a lanyard used without a lifeline must
	(a) have an ultimate load capacity of at least 22 kN (5 000 lbs), in any direction required to resist a fall, and,
	(b) if permanent, be certified in writing by a professional engineer as having the required load capacity.
VERTICAL	11.22
LIFELINES Free fall limits	(1) A personal fall arrest system without a shock absorber must limit the free fall of a worker to 1.2 m (4 ft).
	(2) A personal fall arrest system with a shock absorber may allow a free fall of up to 2 m (6.5 ft), or the limit specified in the manufacturer's instructions, whichever is less.
Swing-fall hazard	11.23
	A vertical lifeline must be installed and used in a manner that minimizes the swing-fall hazard.
Independent	11.24
Anchorage	Each vertical lifeline used for fall arrest must be secured to an independent point of anchorage.
Number of workers	11.25
	Only one worker may be attached to a vertical lifeline, unless the vertical lifeline is part of a ladder safety device.
Double line	11.27
systems	A double line system, where the lifeline and equipment suspension line are rigged through a common control descent device, must not be used unless the system and procedures for its use are acceptable to the board.
Permanent systems	11.30
	Before a permanent horizontal lifeline system is used the employer must ensure that a professional engineer supplies to the workplace a signed and dated drawing and instructions for the lifeline system showing
	(a) the layout in plan and elevation, including anchor locations, installation specifications, anchor design and detailing,
	(b) horizontal lifeline system specifications, including permissible free fall distance, clearance to obstructions below, and rope size, breaking strength, termination details and initial sag or tension,
	(c) the number of workers permitted to connect to the lifeline, and maximum arrest force to each worker, and
	(d) written certification that the lifeline system has been installed in accordance with the design documents.
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PARAGRAPH REFERENCE	
INSPECTION AND	11.31
MAINTENANCE	Safety belts, harnesses, lanyards, lifelines, connecting hardware, anchors and other similar devices must be
General Requirement	(a) inspected by a qualified person before use on each workshift,
	(b) kept free from substances and conditions that could contribute to their deterioration, and
	(c) maintained in good working order.
Suspended	11.32
Scarrolus	(1) A device or part that is defective in condition or function must be removed from service.
	(2) After a fall protection system has arrested the fall of a worker, it must
	(a) be removed from service, and
	(b) not be returned to service until it has been inspected and recertified as safe for use by the manufacturer or its authorized agent, or by a professional engineer.
	END

ROOF SPECIALTIES IWCA I-14.1 2001 WINDOW CLEANING SAFETY STANDARD

This document contains extracts from the "I-14" Standard, an American National Standard (ANSI), relating to fall protection anchorages. For complete data, refer to the actual standard.

The purpose of the Standard is to provide safety to window cleaners and to others, such as a passerby, where window cleaning operations are in progress, by specifying equipment with practical and adequate factors and features, and requiring safe use, design and maintenance of such equipment.

The Standard is also designed for reference by regulatory governmental agencies or to serve these agencies as a guide in the formation of safety rules and regulations and is for use by registered professional engineers and architects and by manufacturers of window cleaning equipment and devices.

PARAGRAPH REFERENCE	REQUIREMENT
Fall Protection 3.8	Fall protection, perimeter guarding, personal fall arrest systems or a personal fall restraint system (as applicable) shall be provided for all work areas (with the exception of working from a ladder supported at grade or using a window cleaner's belt and window cleaner's belt anchors) that expose a worker to a fall hazard when approaching within 6 feet (1800 mm) of an unguarded edge or unguarded skylight. The means or methods used shall comply with the requirements found in Section 9.2 of this Standard
Anchorages 3.9	Building owners and window cleaning contractors shall not allow suspended work to be performed unless it has been determined that the building has provided, identified and certified anchorages complying with Section 9 or 10 for: independent safety lines; tie-backs for outriggers, parapet clamps and cornice hooks; primary support anchorages for powered and manual boatswain's chairs; primary support anchorages for rope descent systems; horizontal (rope) lines or lifelines; and wherever else required
Building Requirements 7.1.1	All buildings where window cleaning is performed in accordance with Section 1.3 and employing suspended equipment shall be equipped with roof anchorages or other approved devices that will provide for safe use of the equipment in conformance with the provisions of this Standard.
7.1.2	Window cleaning performed that employs other methods than those complying with Section 4.1.1 shall have or utilize approved devices that will provide for safe working procedures in conformance with the provisions of this Standard.
7.1.6	Existing buildings without provisions for a window cleaning system may provide a combination of building supplied fall protection and anchorages plus window cleaning contractor supplied transportable equipment or a window cleaner's belt anchor system. Where such a decision is selected, roof anchorages, supporting fixtures, window cleaner's belt anchors and/or transportable equipment shall be designed, manufactured, installed, operated and maintained in accordance with applicable portions of Part B. Fall protection provisions shall comply with Section 9.2. Wind sway protection, where required, shall comply with Section 15.14.
Anchorages and Fall Protection 9.2.1	Anchorages shall be capable of sustaining a 5000 pound (2268 kg) minimum load or a minimum 4-to-1 safety factor, whichever is greater, in any direction that a load may be applied.
9.1.9	Anchorages shall be inspected annually by a qualified person. Anchorages shall be re-certified when re-roofing or renovating (pertinent to the window cleaning system) or at periods not to exceed 10 years. The report of this inspection shall be included in the building's log book. If during the anchorage's inspection an area of suspicion is identified, a test procedure, if necessary, shall be performed under the approval of a registered professional engineer.
9.1.10	Certification and re-certification of anchorages shall be under the supervision of a registered professional engineer.
9.1.11	A horizontal (rope) line may be used as an anchorage or may be a fundamental part of a fall arrest system. In all cases, horizontal lines shall be designed by or under the direct supervision of a registered professional engineer experienced in such designs.



PARAGRAPH REFERENCE	REQUIREMENT
Personal Fall Arrest System 9.2.2 (f) 9.2.2 (g)	 Personal fall arrest systems shall not be attached to guardrail systems, nor shall they be attached to hoists. Personal fall arrest systems, when stopping a fall shall: limit maximum arresting force on an employee to 1800 pounds (8 kN) when used with a body harness; be rigged such that an employee can neither free fall more than 6 feet (1800 mm), nor contact any lower level; bring an employee to a complete stop and limit maximum deceleration travel distance of an employee to 42 inches (1067 mm); have sufficient strength to withstand twice the potential impact energy of an employee free falling a distance of 6 feet (1800 mm), or the free fall distance permitted by the system, whichever is less.
Boatswain Chair Roof Anchorages 13.2.1	When manual swinging scaffold and boatswain's chairs are used for window cleaning, building owners shall provide anchor- ages conforming to Sections 9 and 17 of this Standard. All anchorages shall be designed, installed and located under the supervision of a registered professional engineer. Window cleaners are not permitted to use anchorages for any other purpose that the one identified in the plan of maintenance for the building. An anchorage used for a personal fall arrest system shall be independent from the anchorage used for the suspension system.
Transportable Suspended Powered Platforms (single and multiple suspensions) 1.2.1 15.2.2	Fall arrest anchorages shall be provided by the building owner and comply with Sections 9 and 17 of this Standard. Occupants of powered platforms shall have means to prevent them from falling more than 6 feet (1800 mm) in the event one or more suspension point fails. When operating a platform suspended from a single point system with two wire rope support, means shall be provided for an independent vertical lifeline attached to a certified anchorage on the roof. When operating a platform suspended from a two point system with two wire rope support, means shall be provided for an independent vertical lifeline attached to a certified anchorage on the roof. When operating a platform suspended from a two point system with four rope support, means shall be provided for an independent vertical lifeline attached to a certified anchorage on the roof or to an engineered horizontal lifeline (dog line) structurally affixed to the work platform.
Ground Rigid Platforms 15.15.1 15.15.2	Ground rigged scaffolding may be suspended from roof support equipment (complying with Section 17), providing the height of suspension does not exceed 300 feet (91m) unless continuous engagement is employed to provide wind sway protection. Where suspension heights exceed 130 feet (40 m) and where rigging must be suspended by hand , mechanical means shall be provided for raising and lowering lines (wire rope, fiber and cable) when the entire line's weight exceeds 55 pounds (25 kg).
Single Point Suspended Working Platforms 15.16	In addition to complying with all applicable provisions of Section 15, powered, single point suspended working platforms shall be equipped with a secondary wire rope separate from the suspension rope which will prohibit the work platform from falling should there be a failure of the primary means of support. Except for powered cages with an overhead obstruction, the operator shall be either secured to the work platform by a full body harness and lanyard or to an independent vertical lifeline.
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PARAGRAPH REFERENCE	REQUIREMENT
(Note: Powered	
similar)	Horizontal lines constructed of wire rope are permissible for use as a tie-back provided:
Roof Support	a) the line(s) is (are) permanently left in place;
Equipments	b) they are attached to certified anchorages, excluding parapet clamps;
/. .4	c) its wire rope and wire rope end attachments comply with Section.9.1.1;
	d) the wire is inspected prior to each use in accordance with Section 9.1.9.
Davits and Davit	Davits may be used to support window cleaning activities providing they are no used within 10 feet (3 m) of high-voltage lines an
17.2.1	a) the davit is designed by a registered professional engineer;
	b) the davit has a stability factor of at least 4 to 1 against overturning. Each davit shall be designed to support an ultimate load of not less than 4 times the rated load (based upon the rated load of the hoist when supporting a powered access platform);
	c) the davit has a load rating plate permanently affixed to it stating the davits weight, the manufacturer's name, da of manufacture and maximum allowable load and that the working load is not to be exceeded during its use;
	d) the suspension rope (s) shall be attached to the davit with a safety hook or screw pin shackle;
	e) the davit is not craned to the roof level where it is to be used;
	f) the davit's butt or base fixture mates to the building's socket;
	g) means are provided to lock the davit to its socket or base before it is used to suspend the platform;
	h) the roof socket meets all requirements of Section 17.3:
	i) the davit weighs less than 80 pounds (36.2 kg) or is equipped with wheels.
17.2.2	Portable davits shall not have an arm reach exceeding eight (8) foot, six (6) inches (2.6 m) measured from the primary represented to the centerline of the davits' mast.
Sockets	Roof or parapet mounted sockets may be used to support portable davits providing:
17.3.1	a) the socket has a load rating plate and that the load is not exceeded;
	 b) the socket allows for the davit to be tipped down for insertion of the davit butt into the socket and the angle of down shall not exceed a maximum of 15 degrees above the horizon;
	 c) if the direction of tip down is parallel to the parapet, provisions shall be provided so as to prohibit the davit from being accidentally dropped over the side of the building;
	d) any parapet exceeding six feet in height, to which a socket is mounted, shall provide means for the:
	1) safe access of personnel to rig the tip of the davit;
	2) davit erection;
	3) rotation of the davit arm is necessary for the specific application;
	4) safe boarding of the suspended unit.
17.3.2	When portable sockets are used they shall:
	a) be designed to be used with the davit and the roof fixture to which it mates;
	b) be fitted with wheels to allow ready movement from pedestal to pedestal;
	c) not require lifting to mate with the pedestal;
	d) shall have a pedestal pin attachment connection or positive locking pin connection to the pedestal;
	e) socket/pedestal connections requiring bolts or other threaded fasteners shall not be used.

PARAGRAPH REFERENCE	REQUIREMENT
Counterweight	
17.5.1	Iransportable, counterweighted outriggers may be used to support ground rigged window cleaning activities and RDS, providing:
	a) the outrigger is designed by a registered professional engineer;
	b) the outrigger has a stability factor of four against overturning or upsetting of the outrigger. Each outrigger shall be designed to support an ultimate load of not less than 4 times the rated load (based upon the rated load of the hoist when supporting a pow ered access platform). The fulcrum point of the beam shall rest on leg(s) or equivalent supports securely attached to the beam and so arranged as to prevent lateral overturning of the beam. Each outrigger shall be designed for lateral stability to prevent rollover in the event an accidental lateral load is applied to the outrigger. The accidental lateral load to be considered in this design shall not be less than 15% of the rated load;
	c) the inboard end of outrigger beams, measured from the fulcrum point to the anchorage point, shall be not less than 1-1/2 times the outboard end in length;
	d) solid counterweights are secured to the inboard end of the outrigger;
	e) the outrigger has a load rating plate permanently affixed to it and readily visible, bearing the following information in letters at least 1/4 inch (6.4 mm) in height:
	1) the beam's rated load;
	2) manufacturer's name;
	3) precautionary warning message prohibiting use of the beam within 10 feet of high voltage lines:
	f) the suspension rope(s) shall be attached to the outrigger with a safety hook or screw pin shackle;
	g) the outrigger is not craned to the roof level where it is to be used;
	h) each outrigger shall be tied back to a certified anchorage on the building with a wire rope equivalent in strength to the suspension rope, but in no case less than 5/16 inch (8mm) in diameter. The tie-back rope shall be installed parallel to the center line (longitudinal axis) of the outrigger. All tie-down fittings at the inboard end of the beam shall be of a type that vibration effects shall not produce accidental disengagement. Safety hooks for beam tie-down shall not be used.
	i) the outrigger shall be so located that the suspension wires for a two point suspended working platform are hung parallel and any portion of the outrigger or its counter weights weighing more than 80 pounds (36 kg) shall be equipped with a stable means for its transport
Parapet Clamps and Cornice Hooks 17.6.1 (f)	Each clamp/hook shall be tied back to a certified anchorage on the building with rope equivalent in strength to the suspension rope but in no case less than 5/16 inch (8 mm) in diameter. The tie-back rope shall be installed parallel to the center line (longitudinal axis) of the clamp/hook
Overhead Monorail Tracks and Trolleys	Transportable trolleys may be used on overhead tracks permanently affixed to the building to support window cleaning activities providing:
17.7.1	 a) the monorail tracks have end stops and the system is equipped with independent trolleys from which the operator's vertical lifeline is suspended;
	b) the primary support trolley(s) and the safety line trolley(s) are designed by a registered professional engineer and has a stability factor of at least 4 to 1 against the causation of structural damage to its supporting track. Each trolley and its supporting track struc ture shall be designed to support an ultimate load of not less than 4 times the rated load (based upon the rated load of the hoist when supporting a powered access plat form) plus the safety line load for each operator suspended from the track;
	c) the trolley's wheel diameter and wheel gauge have been verified by a registered professional engineer for specific use on the monorail beam and the beam will safely support the loads applied;
	d) the trolley system is designed in accordance with ASME A120.1;
	e) the trolley and track are inspected and tested in strict accordance with Section 8 of this Standard.
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PARAGRAPH REFERENCE	REQUIREMENT
Appendix C - Anchor Placement for Working Lines, Lifelines and Tie-Back Lines	NOTE: These appendices are intended to be used only as a reference or guideline and are not to be considered a part of the ANSI/IWCA I-14.1 Window Cleaning Safety Standard. The following recommendations are a guideline for the placement and installation of permanent anchorages on buildings where workers will be using suspended access equipment to perform window cleaning. The ANSI/IWCA I-14.1 Standard presently requires that working lines lifelines and the anchorage of permandicular.
New Construction	Newly constructed buildings compliance with the requirement of "in line" is easily done during the design phase of the building. Anchors should be placed in line to the work area so as to prevent displacement of lines under load and/or a fall greater than 6 feet (1800 mm). Placement of anchors shall not be within 6 feet (1800 mm) of the roof edge unless fall protection is provided to access those anchors safely. In no case should anchor spacing exceed 12 feet (3.6 m). In essence, the risk to the worker is greatly reduced by placing the anchors further back from the roof edge. (12 feet [3.6 m] to 50 feet [15.2 m]).
Existing Buildings	The installation or identification of anchorages on existing buildings will vary from that of new buildings. Existing buildings can present obstacles that will prevent ideal anchor placement. However, the safety of the worker(s) shall be of utmost importance when designing an anchor system to be installed on an existing building in compliance with Section 14.6. Ideally, anchors are to be placed in line with the suspended worker(s). Where this is impracticable, anchors may be offset no more than 15 degrees from in line (perpendicular) provided displacement of the rope under load can be prevented. (see Fig. AP-1)
	Fig. AP-1 Suggested Anchor Placement
	with new construction, placement of anchors shall not be within 6 feet (1800 mm) of the roof edges unless fall protection is provided to access those anchors safely. In no case should anchor spacing exceed 12 feet (3.6 m). As stated for new buildings, the state to the worker(s) is greatly reduced by placing the anchors further back from the roof edge. (12 feet [3.6 m] to 50 feet [15.2 m])

This document contains extracts from the CSA-Z259.13-04. Standard relating to horizontal lifeline fall protection systems. This is the first edition of CSA Z259.13, Flexible horizontal lifeline systems. It is part of the Z259 series of Standards for components of personal fall-arrest systems.

The purpose of this Standard is to specify requirements related to the performance, design, testing, labeling, and provision of instructions for every element of flexible horizontal lifeline systems, including every element of the system from anchorage connector to anchorage connector, it does not, however, cover anchorages or anchor design.

This Standard was prepared by the Technical Committee on Fall Protection, under the Jurisdiction of the Strategic Steering Committee on Occupational Health and Safety, and has been formally approved by the Technical Committee. It will be submitted to the Standards Council of Canada for approval as a National Standard of Canada.

PARAGRAPH REFERENCE	REQUIREMENT
FScope 1.1	This Standard specifies requirements related to the performance, design, testing, labeling, and provision of instructions for pre-engineered flexible horizontal lifeline systems (FHLSs) for the attachment of personal protective equipment for protection against falls from a height. These systems are used for arresting falls and may be used for work positioning and travel restraint.
Minimum Strength Requirement 4.4	The minimum strength of a newly assembled FHLS shall be at least twice the anticipated MAL when the system is installed and used in accordance with the manufacturer's instructions. The minimum strength shall be verified by the test procedures described in Clause 7.3.An FHLS should not be used under conditions that could diminish the strength of the system, such as with worn, broken, missing, altered, or corroded components, or after the system has arrested a fall or been exposed to the forces equivalent to those created by arresting a fall.
End Anchorage Strength Requirement 4.5	The manufacturer of an FHLS shall provide data on maximum arrest loads (MALs) to enable the certification organiza- tion to accurately assess the minimum strength requirements for the end anchorages. Each end anchorage shall be rated at a minimum strength at least twice the MAL in the direction of intended loading when the FHLS is installed and used in accordance with the manufacturer's instructions.
Minimum Clearance Requirement 4.6	An FHLS shall be designed, tested, and installed in a manner that will provide adequate clearance in the potential path of a fall for those foreseeable conditions of use intended by the manufacturer of the system. FHLS manufacturers shall give FHLS owners data that is sufficient for accurately assessing the minimum clearance required for each FHLS configuration when the system is installed and used in accordance with the manufacturer's instructions (including a safety margin of 1 m (3.3 ft or more).
Wire Rope Lines 4.6	The minimum breaking strength of a terminated wire rope shall be at least twice the MAL but not less than 28.9 kN (6500 lbf). The minimum rope diameter shall be 8 mm (5/16 in). Wire rope lines shall comply with CSA G4.

PARAGRAPH REFERENCE	REQUIREMENT
In-Line Fittings 5.2.4	The minimum breaking strength of all in-line fittings shall be at least twice the MAL but not less than 22.2 kN (5000 lbf). Personal fall arrest systems shall not be attached to guardrail systems, nor shall they be attached to hoists.
Horizontal Life Energy Absorbers 5.2.5.1	The minimum breaking strength of a horizontal lifeline energy absorber at maximum extension shall be at least twice the MAL but not less than 22.2 kN (5000 lbf).
Intermediate Anchorage Connectors 5.3.2	Every intermediate anchorage connector and its related hardware shall be designed to (a) allow the line to pass through the connector aperture; and (b) resist and transfer to the intermediate anchorage a minimum load of 4.0 kN (900 lbf) for each worker permitted on the system, but not less than 16.0 kN (3600 lbf) in all potential directions of loading.
Mobile Attachment Devices 5.5	 Mobile attachment devices shall (a) be capable of resisting a static force of 16.0 kN (3600 lbf): and b) be either (i) impossible for workers to remove from the lifeline: or (ii) removable only by two consecutive deliberate actions. The manufacturer shall supply specific instructions for the inspection of all the wear elements of the mobile attachment device. Pulleys, snap hooks, and carabiners should be selected for both the suitability of the material from which they are made and the thickness of material to resist wear from frequent travelling along the lifeline. The finish on these devices should be such as not to damage the line or fittings. The instructions for systems installed by the manufacturer or by an installer authorized by the manufacturer shall contain the same information as is provided for systems supplied in kit form, except that a bill of material shall be supplied in place of a complete list of kit components
Instructions 8.3.1	 Essentially, clear instructions in both English and French shall be supplied. The following shall be included in the instructions: (a) the required end anchorage strength and stiffness; (b) the required intermediate anchorage strength and stiffness; (c) the recommended height above the platform for installation of the horizontal lifeline; (d) a method for determining the configurations in which the system may be used; (e) a method for determining, setting, adjusting, and checking the specified line tension; (f) a method for determining the required minimum clearances; (g) the maximum number of workers allowed to be on the system at one time, and where they shall be positioned on the system (this is especially important in cases where the number of allowable workers on the same span is different from the total recommended number of workers; (h) the specifications of the appropriate connecting subsystems; (i) instructions for workers for maintaining continuous attachment to the system (including an instruction that mobile attachment devices should be removed from the lifeline only in a safe area such as an entry/exit point; (i) appropriate warnings concerning environments that pose a hazard, as well as guidelines for selecting environments that are suitable for use; (k) a warning that if a fall occurs or an inspection reveals an unsafe condition, the system is to be taken out of service until an inspector authorized by the manufacturer's representative can determine whether the system is safe for continued use; (h) the recommended maintenance and inspection procedure; (m) a warning that only suitably trained people should be allowed to use the system; (n) a warning that only suitably trained people should be allowed to use the system; (n) a warning to inspect the system provided by the manufacturer's prior written consent; (o) a complete list of the contents of t



PARAGRAPH REFERENCE	REQUIREMENT
Labeling 8.2.2	The labeling for systems installed by the manufacturer or by an installer authorized by the manufacturer shall contain the same information as is provided for systems in kit form, except that the name, address, and telephone number of the installer shall be supplied in addition to the name, address, and telephone number of the manufacturer.
	Essentially the following information, in both English and French, shall be indelibly marked on labels permanently attached at the intended entry points or at one end of the lifeline:
	(a) the manufacturer's name, address, and telephone number;
	(b) the year of manufacture;
	(c) the serial number, if applicable;
	(d) the mark of a certification organization accredited by the Standards Council of Canada indicating that the system conforms to this Standard;
	(e) the required end anchorage strength;
	(f) the required intermediate anchorage strength;
	(g) a method for determining the required minimum clearances;
	(h) the maximum number of workers allowed to be on the system at one time, and where they shall be positioned on the system;
	(i) the specifications of the appropriate connecting subsystems;
	(j) appropriate warnings concerning environments that pose a hazard, as well as guidelines for selecting environments that are suitable for use;
	(k) a warning that if a fall occurs or an inspection reveals an unsafe condition, the system is to be taken out of service until an inspection authorized by the manufacturer or the manu facturer's representative can determine whether the system is safe for continued use;
	(I) the recommended maintenance and inspection procedure;
	(m) a warning that only suitably trained workers should be allowed to use the system;
	(n) a warning against alterations or additions to the system without the manufacturer's prior written consent;
	(o) a warning to inspect the system before each use;
	(p) the permissible direction of loading on the system; and
	(q) a recommendation that a plan be put in place and the means be at hand for prompt rescue of workers following a fall arrest occurrence, including any use of the FHLS in effecting the rescue.

This document contains extracts from the OBC relating to anchor system used for fall protection when performing exterior building maintenance or window cleaning operations.

PARAGRAPH REFERENCE	REQUIREMENT
Anchor System on Building Exterior	(1) Where maintenance and window cleaning operations are intended to be carried out on the exterior of a building described in Article 2.1.1.2, anchor systems shall be provided where any portion of the roof is more than 8 m (26 ft 3 in) above adjacent ground level.
4.1.10.0	(2) Except as provided in Sentence (3), the anchor system in Sentence (1) shall be designed, installed and tested in conformance with CSA Standard Z91, "Safety Code for Window Cleaning Operations".
	(3) Other anchor systems may be used where such systems provide an equal level of safety
	(4) The anchor system material shall be made of stainless steel, aluminum, or other corrosoin resistant base material, or from steel that is hot dipped galvanized, in accordance with CSA Standard G164-M81, "Hot Dip Galvanizing of Irregularly Shaped Articles".
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ROOF SPECIALTIES FALL ARREST ROOF ANCHORS, ETC SPECIFICATION

Note: This fall arrest roof anchors specification, with minor editing, has been written as a separate section of work. Alternatively, the appropriate clauses may be incorporated as part of a roofing specification in regions where this feature is desired.

PART 1: GENERAL

1.01 SECTION INCLUDES

- A. Supply and installation of roof accessories, including:
 - 1. Roof anchors
 - 2. Wall anchors
 - 3. Davit beams and bases
 - 4. Outrigger arms and bases
 - 5. Monorails

1.02 RELATED SECTIONS

- A. Section 03300 Cast-in-Place Concrete
- B. Section 05210 Steel Joists
- C. Section 05300 Metal Deck
- D. Section 06100 Rough Carpentry
- E. Section 07200 Thermal Protection
- F. Section 07500 Membrane Roofing
- G. Section 07900 Joint Sealers

1.03 REFERENCES

A. The work of this Section to conform to:

Canadian

1. National Standards of Canada

- A. CAN/CSA-Z91-02 (Safety Code for Window Cleaning Operations).
- B. CAN/CSA- Z271-98 (Safety Code for Suspended Elevating Platforms).

2. Canadian Standards Association

A. CSA G40.21-M1987, M350W and M300W (Structural Quality Steels).



1. "Fixed Eye" Roof Anchors (Bolt-Through), Non-Standard Height

Fall arrest roof anchors: Thaler [FARA-1NS with galvanized forged 1018 steel eye] [FAR11NS with Type 304 stainless steel forged eye] [FARA-11UNS with Type 304 stainless steel U bolt] roof anchor to [CSA Z91-M90] [OSHA 1910.66, Sub parts D and F] with: urethane insulated hollow hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 14" and up (356 mm) high welded to 3/4" x 8" x 8" (19 mm x 203 mm x 203 mm) 44W base plate; single 1" (25 mm) Type 304 s.s. bolt with EPDM weather seal, top nut and washer, and Type 304 s.s. 1/4" x 4" x 4" (6 mm x 102 mm x 102 mm) underdeck plate, lock washer and nut; SJ-34(9), 9" (229 mm) high New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum][.021" (0.53 mm) 16 oz. copper] [.018" (0.46 mm) Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

Note: Specify 2. 02. A. 1. for all stainless steel anchor.

1. Fall arrest roof anchors: Thaler [FARA-11SS with Type 304 stainless steel forged eye] [FARA-11USS with Type 304 stainless steel U bolt] roof anchor to [CSA Z91-M90] [OSHA 1910.66, Sub parts D and F] with: urethane insulated hollow s.s. type 304 steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) s.s. type 304 base plate; single 1" (25 mm) Type 304 s.s. bolt with EPDM weather seal, top nut and washer, and type SJ-34(9), 9" (229 mm) 304 s.s. 1/4" x 4" x 4" (6 mm x 102 x 102 x mm) under deck plate, lock washer and nut; SJ-34(9), 9" (229 mm) high New-Standard STACK JACK flashing of .018" (0.46 mm) Type 304 stainless steel to CSA B272-93, with EPDM Triple Pressure Grommet Seal and base seal and [PVC coated deck flange] [bituminous painted deck flange].

"Fixed Eye" Roof Anchors (Adhesive Bolt)

B. Fall arrest roof anchors: Thaler [FARA-2 with galvanized forged 1018 steel eye] [FARA-12 with Type 304 stainless steel forged eye] [FARA-12U with Type 304 stainless steel U bolt] roof anchor to [CSA Z91-M90] [OSHA 1910.66, Sub parts D and F] with: urethane insulated hollow hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) 44W base plate prepared to receive four 5/8" (16 mm) dia. adhesive anchor bolts (by others); SJ-34(9), 9" (229 mm) high New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.021" (0.53 mm) 16 oz. copper] [.018" (0.46 mm) Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

Note: Specify 2. 02. B. 1. for all stainless steel anchor.

1. Fall arrest roof anchor: Thaler [FARA-12SS with type 304 stainless steel forged eye] [FARA-12USS with type 304 stainless steel U bolt] roof anchor to [CSA Z91-M90] [OSHA 1910.66, Sub parts D and F] with: urethane insulated hollow type 304 s.s. post 1/4" (6 mm) wall thickness x 4-1/2" (114) dia. x 12" (305) high welded to 5/8" x 8" x 8" (16 mm x 203 x 203 mm) Type 304 s.s. base plate prepared to receive four 5/8" (16 mm) dia. adhesive anchor bolts (by others); SJ-34(9), 9" (229 mm) high New-Standard STACK JACK flashing .018" (0.46 mm) type 304 stainless steel to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

"Fixed Eye" Roof Anchors (Bolt Around Beam)

C. Fall arrest roof anchors: Thaler [FARA-3 with galvanized forged 1018 steel eye] [FARA-13 with Type 304 stainless steel forged eye] [FARA-13U with Type 304 stainless steel U bolt] roof anchor to [CSA Z91-M90] [OSHA 1910.66, Sub parts D and F] with: urethane insulated hollow hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) 44W base plate: four 5/8" (16 mm) Type 304 s.s. bolts and 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) under-beam



1. Fall arrest roof anchors: Thaler [FARA-13SS with Type 304 stainless steel forged eye] [FARA-13USS with stainless steel U bolt] roof anchor to [CSA 1910.66, Sub parts D and F] with; urethane insulated hollow Type 304 s.s. post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" x 8" (16 mm x 203 mm x 203 mm) Type 304 s.s. base plate; four 5/8" (16 m mm) Type 304 s.s. bolts and 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) under-beam s.s. plate; SJ-37(9), 9" (229 mm) high New-Standard STACK JACK flashing .018" (0.46 mm) type 304 stainless steel to CSA B27293, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange][bituminous painted deck flange].

"Fixed Eye" Roof Anchors (Weldable)

D. Fall arrest roof anchors: Thaler [FARA-4 with galvanized forged 1018 steel eye] [FARA-14 with Type 304 stainless steel forged eye] [FARA-14U with Type 304 stainless steel U bolt] roof anchor to [CSA Z91-M90] [OSHA 1910.66, Sub parts D and F] with: urethane insulated hollow hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 5" x 5" (16 mm x 127 mm x 127 mm) 44W base plate; SJ-37(9), 9" (229 mm) high New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.021" (0.53 mm) 16 oz. copper] [.018" (0.46 mm) Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

Note: Specify 2. 02. D.1. for all stainless steel anchor.

1. Fall arrest roof anchors: Thaler [FARA-14SS with Type 304 stainless steel forged eve] [FARA-14USS with stainless steel U bolt] roof anchor to [CSA 1910.66, Sub parts D and F] with; urethane insulated hollow Type 304 s.s. post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114) dia. x 12" (305 mm) high welded to 5/8" x 5" x 5" (16 mm x 127 mm) Type 304 s.s. base plate; SJ-34(9), 9" (229 mm) high New-Standard STACK JACK flashing .018" (0.46 mm) type 304 stainless steel to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

"Fixed Eye" Roof Anchors (Cast-In-Place)

E. Fall arrest roof anchors: Thaler [FARA-5 with galvanized forged 1018 steel eye] [FARA-15 with Type 304 stainless steel forged eye] [FARA-15U with Type 304 stainless steel U bolt] roof anchor to [CSA Z91-M90] [OSHA 1910.66, Sub parts D and F] with: urethane insulated hollow hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) 44W base plate; single 1" (25 mm) Type 304 s.s. anchor bolt with EPDM weather seal, top nut and washer; SJ-34(9), 9" (229 mm) high New- Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.021" (0.53 mm) 16 oz. copper] [.018" (0.46 mm) Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

"Fixed Eye Roof Anchors (Cast-In-Place), Non-Standard Height

CANADA: 1.800.387.7217 U.S.: 1.800.576.1200 WEB: www.thalermetal.com EMAIL: info@thalermetal.com

1. Fall arrest roof anchors: Thaler [FARA-5NS with galvanized forged 1018 steel eye] [FARA-15NS with Type 304 stainless steel forged eye] [FARA-15UNS with Type 304 stainless steel U bolt] roof anchor to [CSA Z91-M90] [OSHA 1910.66, Sub parts D and F] with: urethane insulated hollow hot dipped gavanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 14"



"Fixed Eye" Roof Anchors (Pre-cast Core Bolt)

G. Fall arrest roof anchors: Thaler [FARA-7 with galvanized forged 1018 steel eye] [FARA-17 with Type 304 stainless steel forged eye] [FARA-17U with Type 304 stainless steel U bolt] roof anchor to [CSA Z91-M90] [OSHA 1910.66, Sub parts D and F] with: urethane insulated hollow hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 10" x 10" (16 mm x 254 mm x 254 mm) 44W base plate; single 1" (25 mm) Type 304 s.s. bolt with EPDM weather seal, top nut and washer; galvanized 5/8" x 4" x 12" (16 mm x 102 mm x 305 mm) core slab plate, lock washer and nut; SJ-34(9), 9" (229 mm) high New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.021" (0.53 mm) 16 oz. copper] [.018" (0.46 mm) Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

Note: Specify 2. 02. G. 1. for all stainless steel anchor.

1. Fall arrest roof anchors: Thaler [FARA-17SS with Type 304 stainless steel forged eye] [FARA-17USS with stainless steel U bolt] roof anchor to [CSA 1910.66, Sub parts D and F] with; urethane insulated hollow Type 304 s.s. post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114) dia. x 12" (305 mm) high welded to 5/8" x 10" x 10" (16 mm x 254 mm) Type 304 s.s. base plate SJ-34(9), 9" (229 mm) high New-Standard STACK JACK flashing .018" (0.46 mm) type 304 stainless steel to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange][bituminous painted deck flange].

"Swivel Eye" Roof Anchors (Bolt Through)

H. Fall arrest roof anchors: Thaler [FARA-31 with galvanized forged 1018 steel eye] [FARA-41 with Type 304 stainless steel forged eye] [FARA-41U with Type 304 stainless steel U bolt] swivel eye roof anchor with Type 304 s.s. cap assembly to [CSA Z91-M90] [OSHA 1910.66, Sub parts D and F] with urethane insulated hollow hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) 44W base plate; single 1" (25 mm) Type 304 s.s. bolt with: EPDM weather seal, top nut, washer, s.s. cotter pin; Type 304 s.s. 1/4" x 4" x 4" (6 mm x 102 mm x102 mm) underdeck plate, lock washer and nut; manufacturer's standard flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum][.021" (0.53 mm) 16 oz. copper] [.018" (0.46 mm) Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange [bituminous painted deck flange].

Note: Specify 2. 02. H. 1. for all stainless steel anchor.

1. Fall arrest roof anchors: Thaler [FARA-41SS with Type 304 stainless steel forged eye] [FARA-41USS with stainless steel U bolt] roof anchor to [CSA 1910.66, Sub parts D and F] with; urethane insulated hollow Type 304 s.s. post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) Type 304 s.s. base plate SJ-34(9), 9" (229 mm) high New-Standard STACK JACK flashing .018" (0.46 mm) type 304 stainless steel to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange][bituminous painted deck flange].

"Swivel Eye" Roof Anchors (Adhesive Bolt)

I. Fall arrest roof anchors: Thaler [FARA-32 with galvanized forged 1018 steel eye] [FARA-42 with Type 304 stainless steel forged eye] [FARA-42U with Type 304 stainless steel U bolt] roof anchor with Type 304 s.s. cap assembly to [CSA Z91-M90] [OSHA 1910.66, Sub parts D and F] with: EPDM weather seal, top nut, washer, s.s. cotter pin; urethane insulated hollow hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) 44W base plate prepared to receive four 5/8" (16 mm) dia. adhesive anchor bolts (by others); manufacturer's standard flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.021" (0.53 mm) 16 oz. copper] [.018" (0.46 mm) Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange][bituminous painted deck flange].



Note: Specify 2. 02. I. 1. for all stainless steel anchor.

1. Fall arrest roof anchors: Thaler [FARA-42SS with Type 304 stainless steel forged eye] [FARA-42USS with stainless steel U bolt] roof anchor with Type 304 s.s. cap assembly to [CSA Z91-M90][OSHA 1910.66, Sub parts D and F] with: EPDM weather seal, top nut, washer, s.s. cotter pin; insulated hollow Type 304 s.s. post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) Type 304 s.s. base plate; SJ-34(9), 9" (229 mm) high New-Standard STACK JACK flashing of .031" (0.79 mm) 22 ga. Type 304 stainless steel to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

"Swivel Eye" Roof Anchors (Bolt Around Beam)

J. Fall arrest roof anchors: Thaler [FARA-33 with galvanized forged 1018 steel eye] [FARA-43 with Type 304 stainless steel forged eye] [FARA-43U with Type 304 stainless steel U bolt] roof anchor with Type 304 s.s. cap assembly to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: EPDM weather seal, top nut, washer, s.s. cotter pin; urethane insulated hollow hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) 44W base plate; four 5/8" (16 mm) Type 304 s.s. bolts, 5/8" x 8" x 8" (16 mm x 203 x 203 mm) under-beam steel plate, lock washers and nuts; SJ-37 (9) 9" (229 mm) high New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

Note: Specify 2. 02. J. 1. for all stainless steel anchor.

1. Fall arrest roof anchors: Thaler [FARA-43SS with Type 304 stainless steel forged eye] [FARA-43USS with stainless steel U bolt] roof anchor to [CSA 1910.66, Sub parts D and F] withType 304 s.s. cap assembly to [CSA Z91-02][OSHA 1910.66, Sub parts D and F] with: EPDM weather seal, top nut, washer, s.s. cotter pin; insu; urethane insulated hollow Type 304 s.s. post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) Type 304 s.s. base plate; four 5/8" (16 mm) Type 304 s.s. bolts; 5/8" x 8" x 8" (16 mm x 203 x 203 mm) under-beam stainless steel plate, lock washers and nuts; SJ-37(9), 9" (229 mm) high New-Standard STACK JACK flashing .031" (0.79 mm) 22 ga. Type 304 stainless steel to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange][bituminous painted deck flange].

"Swivel Eye" Roof Anchors (Weldable)

K. Fall arrest roof anchors: Thaler [FARA-34 with galvanized forged 1018 steel eye] [FARA-44 with Type 304 stainless steel forged eye] [FARA-44U with Type 304 stainless steel U bolt] swivel eye roof anchor with Type 304 s.s. cap assembly to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: EPDM weather seal, top nut, washer, s.s. cotter pin; urethane insulated hollow hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 5" x 5" (16 mm x 127 mm x 127 mm) 44W base plate; SJ-37 (9) 9" (229 mm) high New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper][.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

Note: Specify 2. 02. K. 1. for all stainless steel anchor.

1. Fall arrest roof anchors: Thaler [FARA-44SS with Type 304 stainless steel forged eye] [FARA-44USS with stainless steel U bolt] roof anchor to [CSA 1910.66, Sub parts D and F] with Type 304 s.s. cap assembly to [CSA Z91-02][OSHA 1910.66, Sub parts D and F] with: EPDM weather seal, top nut, washer, s.s. cotter pin; urethane insulated hollow Type 304 s.s. post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114) dia. x 12" (305 mm) high welded to 5/8" x 5" x 5" (16 mm x 127 mm) Type 304 s.s. base plate SJ-37(9), 9" (229 mm) high New-Standard STACK JACK flashing .031" (0.79 mm) 22 ga. Type 304 stainless steel to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].



"Swivel Eye" Roof Anchors (Cast-In-Place)

L. Fall arrest roof anchors: Thaler [FARA-35 with galvanized forged 1018 steel eye] [FARA-45 with Type 304 stainless steel forged eye] [FARA-45U with Type 304 stainless steel U bolt] swivel eye roof anchor with Type 304 s.s. cap assembly to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: EPDM weather seal, top nut, washer, s.s. cotter pin; urethane insulated hollow hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) 44W base plate; single 1" (25 mm) Type 304 s.s. bolt ; manufacturer's standard SJ-34 (9) flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

Note: Specify 2. 02. L.1. for all stainless steel anchor.

1. Fall arrest roof anchors: Thaler [FARA-45SS with Type 304 stainless steel forged eye] [FARA-45USS with stainless steel U bolt] roof anchor to [CSA 1910.66, Sub parts D and F] with Type 304 s.s. cap assembly to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: EPDM weather seal, top nut, washer, s.s. cotter pin; urethane insulated hollow Type 304 s.s. post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) Type 304 s.s. base plate; single 1" (25 mm) Type 304 s.s. bolt; SJ-34(9), 9" (229 mm) high New-Standard STACK JACK flashing .031" (0.79 mm) 22 ga. Type 304 stainless steel to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

"Swivel Eye" Roof Anchors (Bolt Around OWSJ)

M. Fall arrest roof anchors: Thaler [FARA-36 with galvanized forged 1018 steel eye] [FARA-46 with Type 304 stainless steel forged eye] [FARA-46U with Type 304 stainless steel U bolt] swivel eye roof anchor with Type 304 s.s. cap assembly to [CSA Z91-M90] [OSHA 1910.66, Sub parts D and F] with: EPDM weather seal, top nut, washer, s.s. cotter pin; urethane insulated hollow hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) under-joist steel plate and 1/4" x 4" x 4" (6 mm x 102 mm x 102 mm) HSS crosstube assembly; four 5/8" (16 mm) Type 304 s.s. bolts with lock washers and nuts; manufacturer's standard flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper][.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

Note: Specify 2. 02. M.1. for all stainless steel anchor.

1. Fall arrest roof anchors: Thaler [FARA-46SS with Type 304 stainless steel forged eye] [FARA-46USS with stainless steel U bolt] roof anchor to [CSA 1910.66, Sub parts D and F] with ; with Type 304 s.s. cap assembly to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: EPDM weather seal, top nut, washer, s.s. cotter pin; urethane insulated hollow Type 304 s.s. post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) Type 304 s.s. base plate; 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) under-joist Type 304 s.s. plate and 1/4" x 4" x 4" (6 mm x 102 mm x 102 mm) HSS crosstube assembly; four 5/8" (16 mm) Type 304 s.s. bolts with lock washers and nuts; SJ-37(9), 9" (229 mm) high New-Standard STACK JACK flashing .031" (0.79 mm) 22 ga. Type 304 stainless steel to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange]. (HSS)



"Swivel Eye" Roof Anchors (Pre-Cast Core Bolt)

N. Fall arrest wall anchors: Thaler [FARA-37 with galvanized forged 1018 steel eye][FARA-47 with Type 304 stainless steel forged eye][FARA-47U with Type 304 stainless steel U bolt] roof anchor to [CSA Z91-M90] [OSHA 1910.66, Sub parts D and F] with: urethane insulated hollow hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 10" x 10" (16 mm x 254 mm x 254 mm) 44W base plate; single 1" (25 mm) Type 304 s.s. bolt with EPDM weather seal, top nut, washer and s.s. cotter pin; galvanized 5/8" x 4" x 12" (16 mm x 102 mm x305 mm) core slab plate, lock washer and nut; manufacturer's standard flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.021" (0.53 mm) 16 oz. copper] [.018" (0.46 mm) Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

Note: Specify 2. 02. N.1. for all stainless steel anchor.

1. Fall arrest roof anchors: Thaler [FARA-47SS with Type 304 stainless steel forged eye] [FARA-47USS with stainless steel U bolt] roof anchor to [CSA 1910.66, Sub parts D and F] with; urethane insulated hollow Type 304 s.s. post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 10" x 10" (16 mm x 254 mm x 254 mm) Type 304 s.s. base plate; single 1" (25 mm) Type 304 s.s. bolt with EPDM weather seal, top nut, washer and s.s. cotter pin; s.s. Type 304 5/8" x 4" x 12" (16 mm x 102 mm x305 mm) core slab plate, lock washer and nut; SJ-34(9), 9" (229 mm) high New-Standard STACKJACK flashing .018" (0.46 mm) Type 304 stainless steel to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

Wall Anchors (Bolt Through)

0. Fall arrest wall anchors: Thaler [FARA-81 with galvanized forged 1018 steel eye] [FARA-91 with Type 304 stainless steel forged eye] [FARA-91U with Type 304 stainless steel U bolt] wall anchor to [CSA Z91-M90] [OSHA 1910.66, Sub parts D and F] with single 3/4" (19 mm) dia. s.s. bolt, lock washer, nut and 1/4" x 4" x 4" (6 mm x 102 mm x 102 mm) s.s. Type 304 back up plate.

Wall Anchors (Cast-In-Place)

P. Fall arrest wall anchors: Thaler [FARA-82 with galvanized forged 1018 steel eye] [FARA-92 with Type 304 stainless steel forged eye] [FARA-92U with Type 304 stainless steel U bolt] wall anchor to [CSA Z91-M90] [OSHA 1910.66, Sub parts D and F] with single 3/4" (19 mm) dia. cast-in-place s.s. anchor bolt with lock washer and nut.

Wall Anchors (Adhesive Bolt)

Q. Fall arrest wall anchors: Thaler [FARA-83 with galvanized forged 1018 steel eye] [FARA-93 with Type 304 stainless steel forged eye] [FARA-93U with Type 304 stainless steel U bolt] wall anchor to [CSA Z91-M90] [OSHA 1910.66, Sub parts D and F] welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) 44W galv. base plate.

Note: Specify 2. 02. Q.1. for all stainless steel anchor

CANADA: 1.800.387.7217 U.S.: 1.800.576.1200 WEB: www.thalermetal.com EMAIL: info@thalermetal.com

1. Fall arrest wall anchors: Thaler [FARA-93SS with Type 304 stainless steel forged eye] [FARA-93USS with Type 304 stainless steel U bolt eye] wall anchor to [CSA 1910.66, Sub parts D and F] welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) Type 304 s.s. base plate.

Wall Anchors (Cladding Bolt)

R. Fall arrest wall anchors: Thaler [FARA-84 with galvanized forged 1018 steel eve] [FARA-94 with Type 304 stainless steel forged eve] [FARA-94U with Type 304 stainless steel U bolt] wall anchor to [CSA Z91-M90] [OSHA 1910.66, Sub parts D and F] with single 3/4" (19 mm) dia. s.s. bolt and EPDM washer seal, ASMT 500C HSS cladding spacer 1/4" x 4-1/2" (6 mm x 114 mm), 1/4" x 4" x 4" (16 mm x 102 mm) s.s. back up plate, lock washer and nut.



Note: Specify 2. 02. R. 1. for all stainless steel anchor.

1. Fall arrest wall anchors: Thaler [FARA-94SS with Type 304 stainless steel forged eye] [FARA-94USS with Type 304 stainless steel U bolt eye] wall anchor to [CSA Z91-02] [0SHA 1910.66, [Sub parts D and F] with single 3/4" (19 mm) dia. s.s.bolt and EPDM washer seal, s.s. cladding spacer HSS 1/4" x 4-1/2"; 1/4" x 4" x 4" (6 mm x 102 mm) s.s. back up plate, lock washer and nut.

Wall Anchors (Pier Bolt)

S. Fall arrest wall anchors: Thaler [FARA-85 with galvanized forged 1018 steel eye] [FARA-95 with Type 304 stainless steel forged eye] [FARA-95U with Type 304 stainless steel U bolt] wall anchor to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with single 3/4" (19 mm) s.s. pier bolt and s.s. 1/4" x 4" x 4" (6 mm x 102 mm x 102 mm) s.s. back up plate; 1/4" x 4" x 4" (6 mm x 102 mm) galv. ASTM 500C HSS pier welded to a 5/8" x 8" x 8" (16 mm x 203 mm) galv. 44W base plate prepared to receive four 5/8" (16 mm) anchor bolts (by others).

Note: Specify 2. 02. S. 1. for all stainless steel anchor.

1. Fall arrest wall anchors: Thaler [FARA-95SS with Type 304 stainless steel forged eye] [FARA-95USS with Type 304 stainless steel U bolt eye] wall anchor to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with single 3/4" (19 mm) s.s pier bolt and s.s. 1/4" x 4" x 4" (6 mm x 102 mm x 102 mm) Type 304 s.s. back up plate; 1/4" x 4" x 4" (6 mm x 102 mm x 102 mm) Type 304 s.s. HSS pier welded to 5/8" x 8" x 8" (16 mm x 203 mm) Type 304 s.s. base plate prepared to receive four 5/8" (16 mm) anchor bolts (by others).

"Swivel Eye" Terrace Anchor (Adhesive Bolt)

Fall arrest terrace anchors: Thaler FARA-96 anchor with 1/4" (6 mm) Type 304 stainless steel swivel plate eye to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: hot dip galvanized hollow ASTM 500C steel low post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. welded to $5/8" \times 8" \times 8"$ (16 mm x 203 mm) 44W base plate prepared to receive four 5/8" (16 mm) dia. adhesive anchor bolts (by others); two EPDM washer seals; 22 ga. x $11-1/2" \times 11-1/2"$ (0.76 mm x 292 mm) zeforated Type 304 s.s. enclosure box with solid $1/8" \times 12" \times 12"$ (3 mm x 305 mm) s.s. pan formed cover; 22 ga. x 17-1/2" (0.76 mm x 445 mm) dia. s.s. flashing disc.

Note: Specify 2. 02. T. 1. for all stainless steel anchor.

1. Fall arrest terrace anchors: Thaler FARA-96SS anchor with 1/4" (6 mm) Type 304 stainless steel swivel plate eye to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: hollow type 304 s.s.low post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) Type 304 s.s.base plate prepared to receive four 5/8" (16 mm) dia.adhesive anchor bolts (by others); two EPDM washer seals; 22 ga. x 11-1/2" x 11-1/2" (0.76 mm x 292 mm x 292 mm) perforated Type 304 s.s.enclosure box with solid 1/8" x 12" x 12" (3 mm x 305 mm) s.s.pan formed cover; 22 ga. x 17-1/2" (0.76 mm x 445 mm) dia. s.s. flashing disc.

"Swivel Eye" High Terrace Roof Anchors (Adhesive Bolt)

T 1. Fall arrest roof anchors: Thaler [FARA-96A with galvanized forged 1018 steel eye] [FARA-106A with Type 304 stainless steel forged eye] [FARA-106AU with Type 304 stainless steel U bolt] roof anchor with Type 304 s.s. cap assembly to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: EPDM weather seal, top nut, washer, s.s. cotter pin; urethane insulated hollow hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) 44W base plate prepared to receive four 5/8" (16 mm) dia. adhesive anchor bolts (by others); 22 ga. (0.76 mm) manufacturer's flashing Type 304 stainless steel; 22 ga. x 11-1/2" x 11-1/2" (0.76 mm x 292 mm x 292 mm) perforated Type 304 stainless steel enclosure box with solid 1/8" x 12" x 12" (3 mm x 305 mm x 305 mm) s.s. pan formed cover, and [PVC coated deck flange] [bituminous painted deck flange].



ROOF SPECIALTIES FALL ARREST ROOF ANCHORS SPECIFICATION

"Fixed Eye" High Terrace Roof Anchors (Adhesive Bolt)

T 2. Fall arrest roof anchors: Thaler [FARA-96B with galvanized forged 1018 steel eye] [FARA-106B with Type 304 stainless steel forged eye] [FARA-106BU with Type 304 stainless steel U bolt] to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with: urethane insulated hollow hot dipped galvanized ASTM 500C steel post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) 44W base plate prepared to receive four 5/8" (16 mm) dia. adhesive anchor bolts (by others); 22 ga. x 8" x 8" (0.76 mm x 203 mm x 203 mm) perforated Type 304 stainless steel enclosure box with solid 1/8" x 8-1/2" x 8-1/2" (3 mm x 216 mm x 216 mm) s.s. pan formed cover; SJ-37, 7" (178 mm) high New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

Note: Specify 2. 02. T 2. 1. for all stainless steel anchor.

1. Fall arrest roof anchors: Thaler [FARA-106BSS with Type 304 stainless steel forged eye] [FARA-106BUSS with stainless steel U bolt] roof anchor to [CSA 1910.66, Sub parts D and F] with; urethane insulated hollow Type 304 s.s. post (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114) dia. x 12" (305 mm) high welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) Type 304 s.s. base plate; SJ-37 7" (178 mm) high .031 (0.79 mm) 22 ga. Type 304 stainless steel New Standard STACK JACK flashing to CSA B272-93; 22 ga. x 8" x 8" (0.76 mm x 203 mm x 203 mm) perforated Type 304 stainless steel enclosure box with solid 1/8" x 8-1/2" x 8-1/3" (3 mm x 216 mm x 216 mm) s.s. pan formed cover; with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

"Rope Stop" Anchors

U. Rope stop roof anchors: Thaler FARA-100 through bolt 3/4" (19 mm) dia. Type 304 s.s. rope stop anchor to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F], complete with 9" (229 mm) dia. x 18 ga. (1.2 mm) s.s. flashing deck flange welded to rope stop, 2" (51 mm) dia. s.s. stop plug to suit roof condition and 1/4" x 4" x 4" (6 mm x 102 mm x 102 mm) s.s. back up plate, lock washer and nut.

Davit Arm and Base

V. Davit arms and bases: Thaler FARA-150 Davit Arm Base and FARA-155 Davit Arm complete davit assembly to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F], with urethane filled, hot dipped galv. ASTM 500C base 9" dia. x 1/4" (229 mm x 6 mm) welded to 3/4" x 14" x 14" (19 mm x 356 mm x 356 mm) 44W base plate and bolted to 1/4" x 14" x 14" (6 mm x 356 mm x 356 mm) under-deck plate using four 3/4" (19 mm) dia. s.s. bolts; davit arm holder 1/2" x 8-7/8" I.D. (12 mm x 225 mm) hot deep galvanized ASTM 500C with weep holes, connected to steel hinge using two 3/4" (19 mm) s.s. hinge pins tethered with 1/8" (3 mm) s.s. cable; mast upright 5/16" x 8-5/8" 0.D. (8 mm x 220 mm) 6061-T6 extruded alum. with handle grips; horizontal 6061-T6 alum. I-beam 1/4" x 3-1/2" x 6" (6 mm x 89 mm x 152 mm) with 1" (25 mm) thick sliding s.s. suspension line attachment plate and handle grips; Type 304 rotatable s.s. head with levelling devices; strut reinforcing 1/4" x 3" x 3" (6 mm x 76 mm x 76 mm) with 1/4" (6 mm) connector plates: SJ-34(9), 9" (229 mm) high New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper][.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].



ROOF SPECIALTIES FALL ARREST ROOF ANCHORS SPECIFICATION

Davit Arm and Base

W. Davit arms and bases: Thaler FARA-150-RH Davit Arm Base and FARA-155-RH Rotating Head Davit Arm complete davit assembly to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F], with urethane filled, hot dipped galv. ASTM 500C base 9" dia. x 1/4" (229 mm x 6 mm) welded to 3/4" x 14" x 14" (19 mm x 356 mm x 356 mm) 44W base plate and bolted to 1/4" x 14" x 14" (6 mm x 356 mm x 356 mm) under-deck plate using four 3/4" (19 mm) dia. s.s. bolts; davit arm mast holder 5/8" x 6-7/8" I.D. (16 mm x 175 mm) hot deep galvanized ASTM 500C with weep holes, connected to steel hinge using two 3/4" (19 mm) s.s. hinge pins tethered with 1/8" (3 mm) s.s. cable; mast upright 5/16" x 8-5/8" 0.D. (8 mm x 220 mm) 6061-T6 extruded alum.; Horizontal 6061-T6 alum. HSS rotating boom 1/4" x 4" x 6" (6 mm x 102 mm x 152 mm) with 1" (25 mm) dia. sliding s.s. suspension line attachment bolt and plates; strut reinforcing 1/4" x 3" x 3" (6 mm x 76 mm x 76 mm); solid rubber wheel assembly; SJ-34(9), 9" (229 mm) high New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper][.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

Reccessed Davit Base

X. Davit arm bases: Thaler FARA-160 Recessed Davit Arm Base designed to receive a FARA-155-RH, rotating head Davit Arm; to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with stainless steel 5/8" x 10" x 10" (16 mm x 254 mm x 254 mm) base plate and two s.s. 3/4" (19 mm) locking plates; 18 Ga. x 18-1/2" x 16-1/2" (1.27 mm x 457 mm x 406 mm) stainless steel enclosure box with s.s. cover; 1/8" x 22" x 24" (3 mm x 559 mm x 610 mm) s.s. under-base plate; 3/4" (19 mm) dia. s.s. cage assembly; galvanized davit arm holder 5/8" x 6-7/8" I.D. (16 mm x 175 mm) ASTM 500C, with weep holes, connected to steel flanges using two 3/4" (19 mm) s.s. hinge and locking pins tethered with 1/8" (3 mm) s.s. cable; 1/16" x 10" x 10" (1.59 mm x 254 mm x 254 mm) EPDM plate and [PVC coated deck flange] [bituminous painted deck flange].

Swivel Outrigger Arm and Base

Y. Outrigger arm and base: Thaler FARA-170 complete outrigger assembly to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F], with urethane filled, hot dipped galv. ASTM 500C base 1/4" x 4-1/2" (6 mm x 114 mm) welded to 5/8" x 8" x 8" (16 mm x 203 mm x 203 mm) ASTM 500C base plate and bolted through roof deck to 1/4" x 4" x 4" (6 mm x 102 mm x 102 mm) back-up plate using a single 1" (25 mm) dia. s.s. bolt; arm holder 1/4" (6 mm) thick stainless steel steel with 1" (25 mm) dia. s.s. pin tethered with 1/8" (3 mm) s.s. cable; outrigger arm beam 1/4" x 5" x 7" (5 mm x 127 mm x 178 mm) hollow 6063-T6 mill finish alum. or galvanized steel with handle grip and s.s. U bolt suspension line attachment plate; SJ-34(9), 9" (229 mm) high New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

Portable Outrigger Beams

Z. Portable outrigger beams: Thaler [FARA-175-A] [FARA-175-B] [FARA-175-C] [FARA-175-D] Portable Outrigger Beam to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with 1/4" x 4" x 6" (6 mm x 02 mm x 152 mm) T-6061 aluminum upper and lower sliding beam; 1/4" x 4" x 6" (6 mm x 102 mm x 152 mm); pedestal to receive adjustable beam; 3/8" (10 mm) s.s. eye suspension line attachment rigging plate; aluminum T-6061 transport wheel frame; stainless steel anchor connectors; [galvanized] [stainless steel] urethane insulated tie-back (tie down) anchor and separate lifeline anchor both with [SJ-34, 7" (178 mm) high] [SJ-35,13" (330 mm) high] New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Top Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].



Portable Outriggers

AA. Portable Outriggers: Thaler FARA-155-P Portable Outrigger(s) to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F], 15'-9" (4.8 m) overall length with 1/4" x 4" x 6" (6 mm x 102 mm x 152 mm) T-6061 aluminum pedestal support, suspension beam and carrier beam; 3/8" (10 mm) s.s. eye suspension line attachment rigging plate; transport wheel assembly; A frame assembly of 1/4" x 3" x 3" (6 mm 76 mm x 76 mm) aluminum tube and two 2" (51 mm) dia. alum. leg supports; s.s. turnbuckle assembly with 3/8" (10 mm) s.s. cable; s.s end caps with s.s. U-bolt turnbuckle and tie-back eyes; [galvanized] [stainless steel] tie-back anchor and separate lifeline anchor.

"Rope Drop" Anchors

BB. Rope drop roof anchor: Thaler FARA-180 adhesive bolt galvanized rope drop anchor to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F], with: 6" (152 mm) dia. hollow ASTM 500C steel sleeve section (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia., length to suit application, welded to 5/8" x 12" x 12" (16 mm x 305 mm x 305 mm) 44W base plate prepared to receive four 5/8" (16 mm) dia. adhesive anchor bolts (by others); removable stainless steel 18 ga. cap w/ set screw tethered to 1/8" (3 mm) s.s. cable; 1" (25 mm) s.s. cross bar; SJ-34(9), 9" (229 mm) high New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

Note: Specify 2. 02. BB.1. for all stainless steel anchor.

1. Rope drop roof anchor: Thaler FARA-180SS adhesive bolt Type 304 s.s. rope drop anchor to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F], with: 4-1/2" (114 mm) dia. hollow s.s. steel sleeve section (HSS) 1/4" (6 mm) wall thickness x 6" (152 mm) dia., length to suit application, welded to 5/8" x10" x 10" (16 mm x 254 mm x 254 mm) s.s. base plate prepared to receive four 5/8" (16 mm) dia. adhesive anchor bolts (by others); removable stainless steel 18 ga. cap w/ set screw tethered to 1/8" (3 mm) s.s. cable; 1" (25 mm) s.s. cross bar; SJ-34(9), 9" (229 mm) high New-Standard STACK JACK flashing of .031" (0.79 mm) 22 ga. Type 304 stainless steel to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

Monorail Susupended Maintenance System

CC. Monorail Maintenance System (Exposed I Beam): Thaler FARA-200 Monorail Suspended Maintenance System to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with T-6061 aluminum I-beam to suit main structure; 1/4" x 4" x 4" (12 mm x 102 mm x 102 mm) steel angles for bolting I-beam to main structure; 3/8" (10 mm) galvanized clamps; 10" (254 mm) wide steel connector plates; s.s. hanger bolts, washers and nuts of sizes shown on drawings; s.s. trolleys with s.s. eyes.

1. Monorail Maintenance System (Bolt Around Beam): Thaler FARA-201 Monorail Suspended Maintenance System to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with T-6061 aluminum C channel beam to suit main structure; 1/4" x 5" x 7" (12 mm x 127 mm x 178 mm) galvanized hanger welded to 5/8" x 10" (16 mm x 254 mm) underbeam plate for bolting to main I-beam structure; 10" (254 mm) wide steel upper plate; s.s. hanger bolts, washers and nuts of sizes shown on drawings; trolleys with s.s. eyes.

Travel Restraint roof anchors

DD. Travel restraint roof anchors: Thaler [FARA-710] [FARA-720] anchors including appropriate mounting hardware for fastening to structural roof deck; to [CSA Z9-02] [OSHA 1910.66, Sub parts D and F], with galvanized forged 1018 steel eye; urethane insulated, hollow, hot dipped galvanized ASTM 500C steel post section (HSS) 1/4" (6 mm) wall thickness x 2-3/8" (60 mm) dia. x [18" (457 mm)] [36" (915 mm)] high welded to 44W base plate; [SJ-37, 7" (178 mm) high] [SJ-38, 13" (330 mm) high] [SJ-39, 19" (483 mm) high] New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 2 ga. Type 304 stainless steel;] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].



3.02 PREPARATION

Note: The following clauses apply to re-roofing or retrofit installations only.

A. For re-roofing or retrofit work, remove existing roof assembly as necessary to allow for installation of roof anchors.

B. In the event of structural deficiencies, deck corrosion or deterioration, ensure that a structural engineer has assessed and approved all surfaces upon which the work of this Section depends. Institute repairs and/or reinforcement where necessary.

C. If necessary, protect building interior and contents against ingression of water, dust, debris or other deleterious material.

3.03 INSTALLATION

Note: [Roof Anchors] [Davits] [Outriggers]

A. Roof Supports

1. Install anchors or equipment in accordance with manufacturer's printed instructions, shop drawings and as specified.

2. Ensure anchors or equipment is installed under the direct supervision of a Professional Engineer [and Roofing Consultant].

3. Where necessary, provide protection against deterioration due to contact of dissimilar materials.

4. Where bolting is used for fastening anchors, no fewer than two threads is to be exposed and the nut is to be positively locked by deforming threads, welding, pinning or equivalent method.

- 5. Ensure work is inspected prior to application of roofing.
- B. Flashing
- 1. Install roof support flashing in accordance with manufacturer's printed instructions.

BUR

2. Set flashing deck flange in layer of plastic cement and flash in with 3 overlapping layers of felt flashing.

Modified Bitumen

3. Torch membrane until bitumen is fluid and set flashing deck flange into fluid. Flash in flange with two overlapping layers of ModBit and seal with asphalt sealer. Do not overheat (melt) EPDM Base Seal.

Single Ply

4. Set deck flange in layer of membrane adhesive and extend single ply up sleeve to highest elevation possible and clamp membrane to STACKJACK Flashing.

Note: For PVC membrane, specify PVC coated flashing; weld roofing to deck flange using PVC torch.

PVC Single Ply

5. Set deck flange in layer of membrane adhesive and extend single ply up sleeve to highest elevation possible and clamp membrane to flashing. Weld roofing to deck flange using PVC torch



RT 3: EXECUTION

3.01 EXAMINATION

A. Report to the Contractor in writing, defects of work prepared by other trades and other unsatisfactory site conditions. Verify site dimensions. Commencement of work will imply acceptance of prepared work.

Note: Review design criteria for tapered roof insulation systems if necessary for specific projects.

B. For roofs employing tapered insulation systems, height adjustments may be necessary i.e. ensure anchor eye is minimum 9" (229 mm) above roof surface.

C. Retrofit Work

1. Remove sufficient area of roofing down to deck level to facilitate anchor installation.

2. Where possible and as directed by Roofing Consultant, reuse any salvageable materials and restore roofing system to match original.

3. Structural adequacy of a parapet or other part of the building on which the support system is placed shall be verified by a professional engineer before rigging.

3.04 FIELD QUALITY CONTROL

A. Comply with the requirements of Section [01400 - Quality Control].

B. All anchor work to be inspected by a qualified testing agency, Professional Engineer [and Roof Consultant] upon completion of work.

Note: Field testing of roof and wall anchor products is not required. Only the field testing of adhesive fasteners is required. In rare instances where adhesive fasteners must be tested after roof anchors have been roofed in, consult a Professional Engineer for calculation of the load requirement prior to testing.

3.05 ADJUSTING AND FINAL INSPECTION

A. Verify that all manufactured units have been installed in accordance with specifications and details, and will function as intended. Adjust any items where necessary to ensure proper operation.

B. Provide necessary documentation certifying system is acceptable for service (Engineer's Certificate of Acceptance).

3.06 CLEANING

A. Clean manufactured units using materials and methods approved by manufacturer. Do not use cleaners or techniques which could impair performance of the roofing system.

End of Section



Portable Outriggers

AA. Portable Outriggers: Thaler FARA-155-P Portable Outrigger(s) to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] , 15'-9" (4.8 m) overall length with 1/4" x 4" x 6" (6 mm x 102 mm x 152 mm) T-6061 aluminum pedestal support, suspension beam and carrier beam; 3/8" (10 mm) s.s. eye suspen sion line attachment rigging plate; transport wheel assembly; A frame assembly of 1/4" x 3" x 3" (6 mm 76 mm x 76 mm) aluminum tube and two 2" (51 mm) dia. alum. leg supports; s.s. turnbuckle assembly with 3/8" (10 mm) s.s. cable; s.s end caps with s.s. U-bolt turnbuckle and tie-back eyes; galvanized] [stainless steel] tie-back anchor and separate lifeline anchor.

"Rope Drop" Anchors

BB. Rope drop roof anchor: Thaler FARA-180 adhesive bolt galvanized rope drop anchor to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F], with: 6" (152 mm) dia. hollow ASTM 500C stee sleeve section (HSS) 1/4" (6 mm) wall thickness x 4-1/2" (114 mm) dia., length to suit application, welded to 5/8" x 12" x 12" (16 mm x 305 mm x 305 mm) 44W base plate prepared to receive four 5/8" (16 mm) dia. adhesive anchor bolts (by others); removable stainless steel 18 ga. cap w/ set screw tethered to 1/8" (3 mm) s.s. cable; 1" (25 mm) s.s. cross bar; SJ-34(9), 9" (229 mm) high New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 22 ga. Type 304 stainless steel] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

Note: Specify 2. 02. BB.1. for all stainless steel anchor.

1. Rope drop roof anchor: Thaler FARA-180SS adhesive bolt Type 304 s.s. rope drop anchor to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F], with: 4-1/2" (114 mm) dia. hollow s.s. steel sleeve section (HSS) 1/4" (6 mm) wall thickness x 6" (152 mm) dia., length to suit application, welded to 5/8" x10" x 10" (16 mm x 254 mm x 254 mm) s.s. base plate prepared to receive four 5/8" (16 mm) dia. adhesive anchor bolts (by others); removable stainless steel 18 ga. cap w/ set screw tethered to 1/8" (3 mm) s.s. cable; 1" (25 mm) s.s. cross bar; SJ-34(9), 9" (229 mm) high New-Standard STACK JACK flashing of .031" (0.79 mm) 22 ga. Type 304 stainless steel to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

Monorail Suspended Maintenance System

CC. Monorail Maintenance System (Exposed I Beam): Thaler FARA-200 Monorail Suspended Maintenance System to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with T-6061 aluminum I-beam to suit main structure; 1/4" x 4" x 4" (12 mm x 102 mm x 102 mm) steel angles for bolting I-beam to main structure; 3/8" (10 mm) galvanized clamps; 10" (254 mm) wide steel connector plates; s.s. hanger bolts, washers and nuts of sizes shown on drawings; s.s. trolleys with s.s. eyes.

1. Monorail Maintenance System (Bolt Around Beam): Thaler FARA-201 Monorail Suspended Maintenance System to [CSA Z91-02] [OSHA 1910.66, Sub parts D and F] with T-6061 aluminum C channel beam to suit main structure; 1/4" x 5" x 7" (12 mm x 127 mm x 178 mm) galvanized hanger welded to 5/8" x 10" (16 mm x 254 mm) underbeam plate for bolting to main I-beam structure; 10" (254 mm) wide steel upper plate; s.s. hanger bolts, washers and nuts of sizes shown on drawings; trolleys with s.s. eyes.

Travel Restraint roof anchors

DD. Travel restraint roof anchors: Thaler [FARA-710] [FARA-720] anchors including appropriate mounting hardware for fastening to structural roof deck; to [CSA Z9-02] [OSHA 1910.66, Sub parts D and F], with galvanized forged 1018 steel eye; urethane insulated, hollow, hot dipped galvanized ASTM 500C steel post section (HSS) 1/4" (6 mm) wall thickness x 2-3/8" (60 mm) dia. x [18" (457 mm)] [36" (915 mm)] high welded to 44W base plate; [SJ-37, 7" (178 mm) high] [SJ-38, 13" (330 mm) high] [SJ-39, 19" (483 mm) high] New-Standard STACK JACK flashing of [.064" (1.6 mm) mill finish 1100-0T alloy aluminum] [.032" (0.831 mm) 24 oz. copper] [.031" (0.79 mm) 2 ga. Type 304 stainless steel;] to CSA B272-93, with EPDM Triple Pressure Grommet Seal and EPDM Base Seal and [PVC coated deck flange] [bituminous painted deck flange].

