
FACILITY FALL PROTECTION

PART 1 GENERAL

1.1 INTENT OF SECTION

- .1 Work supplied under this section includes design (the Contractor is expected to provide the design including exact number and location of roof anchors required) supply and installation of roof anchor system and rooftop attachment system. The Contract drawings are for reference and discussion.

1.2 RELATED SECTIONS

- .1 Sections of Division 1 apply to work of this Section.
- .2 Section 07 52 10 - MBM - Torch Applied Roofing

1.3 QUALITY ASSURANCE

- .1 Installation and Design Responsibility: Work of this Section to be executed by a firm thoroughly conversant with laws, by-laws and regulations which govern, and capable of workmanship of best modern shop and field practice known to recognized manufacturers specializing in this work.
- .2 Have work of this Section designed by a Professional Engineer licensed in the Province of Ontario. The work shall meet the Ministry of Labour requirements for fall arrest anchor systems. The Engineer shall be responsible for designing:
 - .1 Layouts and quantities, to requirements of the authorities having jurisdiction, and CSA-Z91.
 - .2 Co-ordination and ensure compatibility with building structure.
- .3 Obtain all necessary permits and approvals from the authorities having jurisdiction.
- .4 Installer Qualifications: Trained and approved by the manufacturer and having a minimum three years experience in the installation of the work described in this Section and can show evidence of satisfactory completion of projects of similar size, scope and type. If requested, provide letter of certification from manufacturer stating that installer is

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certified applicator of its products, and is familiar with proper procedures and installation requirements required by the manufacturer.

- .5 Maintenance Seminars: Engage a factory authorized service representative to train Owner's maintenance personnel on proper procedures and schedules for adjusting, operating, troubleshooting, servicing, and maintaining the work.
- .6 Pre-Installation Meeting: Two weeks prior to commencing work of roofing sections, arrange for manufacturer's technical representative to visit the site and review preparatory and installation procedures to be followed, conditions under which the work will be done, and inspect the surfaces to receive the work of this Section. Advise the Consultant of the date and time of the meeting.
- .7 Manufacturer's Site Inspection: Have the manufacturer's technical representative inspect the Work at suitable intervals during application and at conclusion of the work of this Section, to ensure the Work is correctly installed. Submit manufacturer's inspection reports and verification that the work of this Section is correctly installed.
- .8 Source Limitations: Obtain each type of product from a single manufacturer.

1.4 SUBMITTALS

- .1 Shop Drawings: Bearing professional seal and signature of a Professional Engineer responsible for the engineering design work of this Section. Show anchor profile, layout, materials, construction, and securement method to building structure.
- .2 Samples: Duplicate full size samples of each anchor type.
- .3 Maintenance Manuals: Include complete written and illustrated instruction manuals relative to the care, adjustment and operation of all parts of the equipment, a complete description and listing of components, with recommended frequency of service and maintenance to ensure maximum efficiency, reliability and long life of the equipment.
- .4 Fall Arrest Anchor Reports: Include approved roof layout plan, anchor details, test reports, special liability insurance certificate, warranty certificate, and authorized Letter of Acceptance from the Ministry of Labour:

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- .1 Special Liability Insurance: Currently dated and duly authorized certificate, indicating that the subcontractor has valid, special liability insurance policy in place to warranty the fabrication and installation of the work of this Section.

1.5 PROTECTION

- .1 Protect the structure and its finishes from damage due to installation, testing and operation of work of this Section.
- .2 Make good components or surfaces soiled or otherwise damaged in connection with the work of this section.

1.6 MAINTENANCE INSPECTIONS

- .1 Provide three (3) years of anchor maintenance inspections as part of the Contract, from the date of the Substantial Performance, at no additional cost to the Owner. Maintenance inspections shall include but not limited to pull tests, flashing inspection and weld inspections.

PART 2 PRODUCTS

2.1 MATERIALS

- .1 Stainless Steel Plates, Round Bars and Flat Bars: Structural quality with $F_y = 50,000$ psi.
- .2 Stainless Steel Sheet: 18 gauge, AISI type 304 stainless steel with No.4 finish.
- .3 Stainless Steel Plates: New stock (not weathered or rusted), to CAN/CSA-G40.21, Grade 300W. Hot-dip galvanize steel plates after fabrication to CAN/CSA-G164.
- .4 Galvanized Steel Sheet: Commercial quality, stretcher levelled, 6 mm (0.24") thick to ASTM A446 with minimized spangle zinc coating Z275 to ASTM A526.
- .5 Stainless Steel Welding Materials: CAN/CSA-W59. Use electrodes compatible with and of the same properties as the stainless steel.
- .6 Isolation Coating: Alkaline and acid resistant bituminous paint.

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- .7 Stainless Steel Lock Washers and Hex Nuts: High strength AISI 300 or 400 Series austenitic grade stainless steel types.

2.2 ACCEPTABLE PRODUCTS

- .1 Roof Fall Arrest Roof Anchors:
 - .1 Around joist bolted type, urethane insulated, hollow steel post with base plate, four steel bolts and under joist plate, flashing sleeve, and forged stainless steel fixed eye assembly, FARA-16 by Thaler Metal Products or Agency Approved Equal.
 - .2 Bolts around the steel beams, urethane insulated, hollow steel post with base plate, four steel bolts and under joist plate, flashing sleeve, and forged stainless steel fixed eye assembly, FARA-13 by Thaler Metal Products or Agency Approved Equal.
 - .3 Bolt through the metal decking, urethane insulated, hollow steel post with base plate, four steel bolts and under joist plate, flashing sleeve, and forged stainless steel fixed eye assembly, FARA-11 by Thaler Metal Products or Agency Approved Equal.
- .2 Rooftop Equipment System:
 - .1 Engineered, attachment system specifically designed for installation without the need for exposed roof penetrations, ballast or flashings, and without causing damage to the roofing membrane, U-Anchor U2600 or Agency Approved Equal.

PART 3 EXECUTION

3.1 PREPARATION

- .1 Examine work of other sections where such work influences the work of this Section and report unsuitable conditions to the Consultant.
- .2 Supply anchors, inserts, rough-in dimensions and templates required to be built-in by other Sections, in adequate time.
- .3 Have a senior, qualified manufacturer's representative on site to direct and supervise the installation of materials which are installed by other trades.

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- .4 Apply isolation coating of approximately 0.76mm (30 mils) dry film thickness, or other suitable permanent separator on concealed contact surfaces of dissimilar materials, before assembly or installation where there is possibility of corrosive or electrolytic action with concrete, masonry, mortar, or steel.

3.2 INSTALLATION - EQUIPMENT

- .1 Install work by the manufacturer or its authorized representative.
- .2 Perform pull test on one out four anchors, in accordance with the requirements of the authorities having jurisdiction.
- .3 Replace defective equipment at no cost to the Owner.
- .4 Adjust operating parts to ensure smooth, efficient operation.

3.3 INSTALLATION – ROOF WORK PLANS

- .1 Securely install copies of roof work plans in clear acrylic covers and all roof access locations, in accordance with the requirements of the authorities having jurisdiction.

3.4 WARRANTY

- .1 Roof Anchor System
 - .1 Provide a written and signed warranty in the name of the Owner, that work of this Section shall be free of defects in materials, workmanship and installation for a period of three (3) years from the date of Substantial Performance of the Work.
 - .2 Defects shall include but not be limited to:
 - .1 Flashing failure.
 - .2 Weld failure.
 - .3 Excessive deformation of anchors or part of anchors while under imposed loading.
 - .4 Metal fatigue.

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.2 Rooftop Attachment System

- .1 Provide a written and signed warranty in the name of the Owner, that work of this Section shall be free of defects in materials, workmanship and installation for a period of twenty (20) years from the date of Substantial Performance of the Work.

END OF SECTION