

Roofing Repairs

Section revised and reissued by Addendum 01
Section revised and reissued by Addendum 03

PART 1 - GENERAL

1.1 Summary

.1 Section includes:

- .1 _____ Roofing repairs to the roofing systems where indicated on drawings.
- ~~.4.2 _____ Precast concrete floating pads for roof walkways.~~

1.2 Administrative Requirements

.1 Coordination

- .1 Coordinate with Divisions 21, 22, and 23 to ensure that roof drains are suitable for roofing system design.
- .2 Coordinate with installers of roof mounted items, equipment, and mechanical and electrical work at roof so that installation will not subvert the integrity of the roofing system.
- .3 Coordinate with installation of air barrier at walls to ensure complete continuity of air barrier system for building.

.2 Conduct a pre-installation meeting in accordance with Section 01 31 19.

- .1 Independent inspection and testing company shall attend the pre-installation meeting.
- .2 The manufacturer shall meet with the necessary parties at the jobsite to review and discuss project conditions as it relates to the integrity of the roofing assembly.
- .3 Meet with *Consultant*, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, and installers whose work interfaces with or affects roofing including installers of roof accessories and roof-mounted equipment.
- .4 Review methods and procedures related to roofing installation, including manufacturer's written requirements.
- .5 Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
- .6 Examine substrates and existing conditions for compliance with requirements, including flatness and fastening.
- .7 Review structural loading limitations of roof deck during and after roofing.
- .8 Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
- .9 Review governing regulations and requirements for insurance and certificates if applicable.
- .10 Review temporary protection requirements for roofing system during and after installation.

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- .11 Review roof observation and repair procedures after roofing installation.
- .12 Forecasted weather conditions.

1.3 Submittals

- .1 Submit required submittals in accordance with Section 01 33 00.
- .2 *Product* data sheets:
 - .1 Submit manufacturer's *Product* data sheets for *Products* proposed for use in the work of this section.
- .3 Design calculations; for wind (uplift) loads:
 - .1 Submit under seal, calculations prepared by a professional engineer that clearly indicate the following:
 - .1 Design assumptions.
 - .2 Codes and standards to which calculations are based upon.
 - .3 Materials.
 - .4 Maximum and minimum tolerances for proposed materials including anchors and spacing.
 - .4.5 Testing data to substantiate paver requirements and details to resist wind uplift, or displacement of new walkways.
- .4 Roofing manufacturer's wind uplift compliance reports:
 - .1 Roofing assembly wind uplift compliance reports: Submit roof system assessment reports for applicable CSA A123.21 compliant roof assemblies required to meet requirements for indicated wind uplift pressures and indicated roofing assembly configurations.

1.4 Closeout Submittals

- .1 Submit closeout submittals in accordance with Section 01 78 00.
- .2 Operation and maintenance data:
 - .1 Submit manufacturer's maintenance instructions for incorporation into the operation and maintenance manuals.

1.5 Quality Assurance

- .1 Qualifications:
 - .1 Installers / applicators / erectors:
 - .1 Installers: Shall have 5 years' experience, minimum, in application of *Products*, systems and assemblies specified and with approval and training of *Product* manufacturers.
 - .2 *Subcontractor*: Shall be a member in good standing of the Canadian Roofing Contractors Association (CRCA) and Ontario Industrial Roofing Contractors Association (OIRCA), for at least 5 years.

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- .3 *Subcontractor* must be approved by the membrane manufacturer. Submit *Subcontractor's* certification letter prepared by the membrane manufacturer.
- .4 Execute work of this section only under full time supervision of qualified *Subcontractor's* site supervisor.
- .2 Manufacturers: Company specializing in manufacturing the *Products* specified in this section, with 10 years' experience, minimum.

1.6 Product Handling

- .1 Product handling shall be in accordance with Section 01 60 00 as supplemented by the requirements of Section 07 01 50.
- .2 Do not store roofing materials on roof.

1.7 Site Conditions

- .1 Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written requirements and warranty requirements.

1.8 Warranty

- .1 Warrant work of this section in accordance with Section 01 78 36.
- .2 Extended warranty:
 - .1 Labour, materials, and workmanship for work of this section.
 - .2 Duration: 2 years.

PART 2 - PRODUCTS

2.1 Performance/Design Requirements

- .1 The roofing system shall include roofing system materials required to achieve wind uplift load requirements and roofing membrane manufacturer's warranty.
- .2 Wind uplift:
 - .1 Roofing system assemblies shall have been successfully tested by a qualified testing agency to resist project roofing uplift pressures in accordance with the building code.
 - .1 Roofing system shall exceed wind load requirements as determined by the design calculations specified in 1.3.3 above.
- .3 Roof covering classification: Roof assembly shall have a Class A classification as determined in conformance with CAN/ULC S107-10 "Standard Methods of Fire Tests of Roof Coverings".
- .4 Roofing system: Prevent water from entering building and roofing assembly through roofing membrane.

2.2 Materials

- .1 General:

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- .1 Roofing system materials shall be sourced from one manufacturer unless otherwise specified.
- .2 Roofing repair materials: new materials, to match grade and quality of existing roofing systems.
- .3 Insulation: Thickness and type to match existing insulation.
- .4 Penetration sealer and form system:
 - .1 Compatible with roofing systems.
 - .2 Primer as recommended by sealer manufacturer.
 - .3 Acceptable *Products*:
 - .1 Chem Link Inc. 'ChemCurb System'.
- .5 Flashings: prefinished; to match existing flashings.
- .6 Fasteners and adhesives:
 - .1 Roofing nails: galvanized steel to CSA B111-1974, Table 12, and length sufficient to penetrate wood substrate 25 mm (1") minimum.
 - .2 Metal discs: flat caps of 25 mm (1") minimum diameter, 0.6 mm (0.023") sheet metal, formed to prevent dishing. No discs are required with roofing nails having 25 mm (1") diameter solid cap heads.
 - .3 Adhesives and primers as recommended by roofing system manufacturer.
 - .4 Fastening bars: Z275 galvanized or AZ150 galvalume steel, or extruded aluminum, 14 gauge, slot holes 25 mm (1") on centre.
- .7 Rough carpentry in accordance with Section 06 10 53.
- .8 Joint sealants in accordance with Section 07 92 00.
- .9 Metal flashings in accordance with Section 07 62 00.
- .10 Precast paver walkways; with insulation support pads (concrete floating pads):
 - .1 Location: Walkways and equipment service areas.
 - .2 610 mm (24") square x 45 mm (1-3/4") thick, to meet specified requirements of CSA A231.1-14/A231.2-14, medium sandblasted finish.
 - ~~.3~~ Support pads: 25 mm (1") thick, extruded expanded polystyrene insulation, to CAN/ULC S701.1-17, Type 4, Class B, self-extinguishing, 35 psi at 5% deflection compressive strength, thermal conductivity (k) factor of 0.029 at 23.8°C.
- .11 Self adhered membrane: Blueskin SA by Henry.

PART 3- EXECUTION

3.1 Examination

- .1 Before proceeding with roofing application, verify that:
 - .1 Roof deck is constructed smoothly; in true planes; and level, or sloped to drains, whichever is design intent.

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- .2 Roof deck is clean and sufficiently dry for application under specified warranty.
- .3 Adjacent construction and installation of work of other sections to be incorporated with roof is completed.
- .4 Roofing surfaces are free of cracks that are wider than bridging ability of roofing materials.
- .5 Preparations have been made for bases on which equipment will be installed.
- .6 Work that penetrates roof has been installed.

3.2 Preparation

- .1 Remove existing roofing and flashing assemblies.
- .2 Sweep roof deck completely free of dust, dirt and debris. Remove foreign materials.
- .3 Ensure that stored porous materials absorb no moisture. Remove wet materials from *Place of the Work*.
- .4 Protect surrounding work, and adjacent building and other property from damage during roofing operations, and weather damage, taking particular care to prevent droppings and discolouration of surrounding buildings by smoke from kettles. Prevent solvents and smoke from entering building intake vents.
- .5 This section shall make payment for repair of damage caused by its work.
- .6 Install temporary blocking and otherwise protect drains during roofing operations, and remove at completion of roofing work.

3.3 Installation

- .1 General:
 - .1 Apply roofing in accordance with the *Contract Documents*, requirements of jurisdictional authorities, and of material manufacturer's written directions which shall establish minimum requirements not otherwise specified.
 - .2 Make adjustments to specified roofing procedures caused by weather and site conditions only when approved.
 - .3 Verify that each part of the roofing system is completely bonded to the other unless otherwise specified.
 - .4 Lay roofing free from wrinkles, air pockets, fishmouths, tears, and prominent lap joints. Embed them in a uniformly spread layer of adhesive, as applicable.
 - .5 Complete entire roofing system up to line of termination of each day's work.
 - .6 Install self-adhering membrane in a continuous manner, to tie-in and overlap onto existing wall membranes.
 - .7 Obtain *Consultant* review prior to re-instating metal flashing and other components.

3.4 Paver Installation

- .1 Roof pavers:

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- .1 Install concrete paver ballast in accordance with reviewed engineered shop drawings for wind uplift restraint.
- .5 Place each concrete roof paver on one-piece extruded expanded polystyrene insulation pads, cut short 50 mm (2") from edge of paver.

3.43.5 Field Quality Control

- .1 Conduct quality control in accordance with Section 01 45 00.
- .2 Manufacturer's field review to be in accordance with Section 01 45 00.

END OF SECTION