

Part 1 General

1.1 SECTION INCLUDES

- .1 Liquid applied, cementitious, self-leveling floor underlayment.

1.2 RELATED REQUIREMENTS

- .1 Section 01 33 00 – Submittal Procedures.
- .2 Section 01 45 00 – Quality Control.
- .3 Section 09 68 16 – Sheet Carpeting.

1.3 ADMINISTRATIVE REQUIREMENTS

- .1 Coordination:
 - .1 Carpet Replacement: by others.
 - .1 Coordinate with carpet contractor.
- .2 Pre-Installation Meetings:
 - .1 Convene pre-installation meeting one (1) week prior to beginning on-site installation, with Departmental Representative to:
 - .1 Verify project requirements and areas of Work.
 - .2 Review installation and substrate conditions.
 - .3 Review heritage fabric protection measures.
 - .4 Review Manufacturer's written installation instructions and warranty requirements.

1.4 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit product data sheets for underlayment. Include product characteristics, performance criteria and limitations.
- .3 Submit WHMIS MSDS – Material Safety Data Sheets where applicable. Indicate VOC content.
- .4 Submit Manufacturer's mixing and application instructions.
- .5 Certificates: submit product certificates signed by Manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.5 QUALITY ASSURANCE

- .1 Installation of cementitious underlayment shall be by an applicator authorized by the Manufacturer using Manufacturer approved mixing and pumping equipment.

1.6 QUALITY CONTROL

- .1 Prior to application of cementitious underlayment, submit written application to Departmental Representative identifying areas that are to receive installation of products.
- .2 Identify area by floor and corridor number. Indicate approximate number of square meters to be covered and approximate thickness of installed product for each space.
- .3 Departmental Representative will review structural design capacity of existing floor structure in each space. Do not proceed with application of any product until written authorization is received from Departmental Representative.

1.7 MOCK-UP

- .1 Construct a mock-up in accordance with Section 01 45 00 - Quality Control.
- .2 Construct mock-up a minimum of 20 square meters. Locate where directed by Departmental Representative. Demonstrate application techniques and protection measures.
- .3 Allow to cure for a minimum of 48 hours before requesting inspection and approval from Departmental Representative.
- .4 Allow for inspection of mock-up by Departmental Representative before proceeding with additional flooring work. When accepted, mock-up will demonstrate minimum standard for this work. Approved mock-up may remain as part of the Work.

1.8 DELIVERY STORAGE AND HANDLING

- .1 Deliver materials in their original, unopened packages. Protect from exposure to the elements in accordance with Manufacturer's written instructions. Remove damaged or deteriorated materials.
- .2 Notify Departmental Representative 24 hours in advance of material deliveries to site.
- .3 Store materials in location approved by Departmental Representative.

1.9 SITE CONDITIONS

- .1 Maintain interior temperature at a minimum of 10 degrees Celsius for a minimum of 72 hours before, during and after installation of cementitious underlayment.
- .2 During the curing process, ventilate area of Work to remove excess moisture as directed by Departmental Representative by use of approved portable supply and exhaust fans with HEPA filters. Provide continuous ventilation during and after installation.

1.10 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with the Waste Reduction Workplan.
- .2 Place used hazardous containers in areas designated for hazardous materials. Place materials defined as hazardous or toxic waste in designated containers.
- .3 Collect and separate plastic, paper packaging and corrugated cardboard in accordance with Waste Management Plan.

Part 2 Products

2.1 MATERIALS

- .1 Underlayment: cementitious, polymer modified, self-leveling, poured floor underlayment.
 - .1 Specifically formulated to cap rough, pitted, cracked or out-of-level concrete slabs or new concrete floor slabs.
 - .2 Application from feather edge to 38 mm maximum thickness.
 - .3 Compressive strength: 48 MPa at 28 days, 24 MPa after 24 hours.
 - .4 Flexural Strength: 9.0 MPa at 28 days.
 - .5 Dry Density: approximately 2,003 kg/m³.
 - .6 Tensile Strength: 6.0 MPa at 28 days.
 - .7 Surface Burning Characteristics: Flame Spread: 0; Fuel Contribution: 0; Smoke Development: 0.
- .2 Mix Water: Potable, free from impurities.
- .3 Primer: by Manufacturer of cementitious underlayment, designated for use on existing and new concrete floor slabs.
- .4 Joint and Crack Filler: Latex Based, Self Leveling.
- .5 Polyethylene Film: 0.15 mm thick.

Part 3 Execution

3.1 PREPARATION

- .1 Confirm areas requiring cementitious underlayment with Departmental Representative and in accordance with Section 09 68 16 – Sheet Carpeting. Indicate areas of Work on Drawings.
- .2 Do not install underlayment until floor penetrations and peripheral work are complete. Ensure services are installed and inspected prior to installation of underlayment.
- .3 Verify condition of existing subfloor. Subfloor shall be structurally sound. Report any defects that would affect application of underlayment to Departmental Representative.
- .4 Protect adjacent heritage fabric from staining and from being coated by with concrete leakage from cementitious underlayment operations in accordance with Section 01 00 10 – General Instructions.
- .5 Clean existing concrete subfloor to approval of Departmental Representative and to remove all old floor coverings, mud, oil, grease, and other contaminating factors before application of primer.
- .6 Remove substrate surface irregularities. Fill cracks and voids with a self-leveling, quick setting patching or caulking material to prevent leakage of underlayment into spaces below. Finish smooth.
- .7 Vacuum clean surfaces. Close duct openings and chases through floor structure with watertight temporary forms and fillers.

- .8 Protect wall surfaces and adjacent finishes from splashing and damage with layer or polyethylene.
- .9 Apply primer to existing concrete subfloor in accordance with Manufacturer's written instructions. Apply multiple coats depending on the porosity of the existing concrete and as required to ensure maximum adhesion of the new underlayment.
- .10 Allow existing expansion joints to continue through the new topping at the same width.

3.2 MIXING

- .1 Site mix materials in accordance with Manufacturer's written instructions.
- .2 Mix to self-leveling consistency and to achieve specified properties.

3.3 APPLICATION

- .1 Install underlayment to Manufacturer's instructions in a single uninterrupted operation.
- .2 Place to required thickness in accordance with Manufacturer's instructions and as required to obtain flat level transitions.
- .3 Apply underlayment to fill any existing gaps and troughs.
- .4 Apply underlayment over existing concrete floor slabs and new floor slabs to achieve level flat floor surfaces.
- .5 Spread and screed to a smooth surface. Place as continuously as possible until application is complete so that no slurry is placed against material that has obtained its initial set.
- .6 Feather edge joints to existing areas in low traffic areas and to approval of Departmental Representative.
- .7 Arrange with Departmental Representative to provide continuous ventilation and adequate heat to rapidly remove moisture from the area until the underlayment is dry. Provide additional mechanical ventilation as necessary.
- .8 Allow underlayment to dry for minimum 5 days or as approved by Manufacturer.
- .9 Tolerance: Top Surface: level to less than 3.0 mm in 3.000 m (1:1000).

3.4 CURING

- .1 Allow underlayment to cure without the application of applied sealers or curing compounds. Moist cure the underlayment in accordance with Manufacturer's written instructions.

3.5 FIELD QUALITY CONTROL

- .1 Perform slump test as material is being pumped using a 50 x 101 mm cylinder resulting in a patty size of 203 mm plus or minus 25 mm diameter.

- .2 Obtain field samples of a minimum of one set of 3 molded cube samples from each day's pour. Perform testing of samples in accordance with Manufacturer's recommendations.
- .3 Provide written copies of test results to Departmental Representative within 14 days of application.

3.6 PROTECTION

- .1 During remainder of construction operations, place temporary plywood sheets over underlayment wherever it will be subject to heavy wheeled or concentrated loads.

END OF SECTION