

Mn/DOT Approval of Special Surface Finish Systems

Texture Coating System

The products described below shall consist of three components: a cementitious plaster mix, a polymer modified bonding agent, and an acrylic masonry paint. The acrylic masonry paint is used both within the plaster mix to give it an initial tint, and it is used to coat the plaster mix, after it has cured.

The plaster mix should be composed of approximately 1 part white cement, two parts Type I portland cement, and nine parts silica sand, of which 95% passes the 600 µm sieve (no. 30) and 95% is retained on the 212 µm sieve (no. 70).

Plaster Mix and Bonding Agent Product Description: Provide cement-based, polymer-modified, waterproof, tinted textured plaster mix and bonding agent for concrete surfaces formulated for exterior application. Product shall be permeable to water vapor pressure release through the plaster without blistering or delaminating.

- Adhesive Strength.....2.0 Mpa after 28 days
(Shear Bond Adhesion Testing Method)
- Freeze-thaw Resistance.....No cracks or delamination after 300
cycles
(ASTM C 666, Method B)
- Accelerated Weathering.....No visible defects (5000 hour
exposure)
- Water Absorption.....3½% maximum (ASTM C 67 Testing Method)
- Tensile Strength.....Minimum 2.0 MPa after 28 days (ASTM C 190)
- Flexural Strength.....Minimum 6.2 MPa after 28 days (ASTM C 348)
- Compressive Strength.....Minimum 27.0 MPa after 28 days (ASTM C 109)

Acrylic Masonry Paint Product Description: Provide 100% acrylic masonry paint. It shall be compatible with the plaster mix and bonding agent, and meet the requirements of Mn/DOT Specification 3584.

Submittals

a. General: Submit all required information and data to the Concrete Engineer in a coordinated and timely fashion so as to avoid delays in reviewing the specifications for the material. Allow sufficient time so that construction will not be delayed as a result of the time required to properly process submittals, including time for resubmittal, if necessary.

No extension of time will be authorized because of the Contractor’s failure to transmit submittals to the Engineer sufficiently in advance of the work.

b. Product Data: Submit manufacturer’s technical information, label analysis, and application instructions for each material proposed for use.

Texture Coating System (cont.)

c. Laboratory Test Reports: Submit test reports in accordance with Mn/DOT Specification 1603 for concrete finishing products. Reports shall be certified by an independent testing laboratory.

In the absence of tests by an independent testing laboratory, approved products shall have a minimum of five consecutive years of in-service field testing, monitored by Mn/DOT, demonstrating successful protection from the damaging effects of deicing chemicals.

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Protective Coating System

The products described below shall consist of two components: a cementitious plaster mix and a polymer modified bonding agent.

Plaster Mix and Bonding Agent Product Description: Provide cement based, acrylic polymer modified, waterproof coating textured plaster mix and bonding agent coating for concrete and masonry surfaces formulated for exterior application. Product shall be permeable to water vapor pressure release through the plaster without blistering or delaminating and offer superior resistance to chloride ion penetration.

- Adhesive Strength.....2.2 Mpa after 28 days
(Shear Bond Adhesion Testing Method)
- Freeze-thaw Resistance.....No cracks or delamination after 300
cycles
(ASTM C 666, Method B)
- Chloride Ion Resistance.....At 0-1/2” depth Base Concrete – 0.275% chloride
(AASHTO-T-259-801)
- Tensile Strength.....Minimum 7.2 MPa after 28 days (ASTM C 190)
- Salt Scaling Resistance.....After 50 freeze-thaw cycles 0 rating, no scaling
(ASTM C 673)
- Flexural Strength.....Minimum 13.5 Mpa after 28 days (ASTM C 348)
- Compressive Strength.....Minimum 49.6 Mpa after 28 days (ASTM C 109)

Submittals

a. General: Submit all required information and data to the Concrete Engineer in a coordinated and timely fashion so as to avoid delays in reviewing the specifications for the material. Allow sufficient time so that construction will not be delayed as a result of the time required to properly process submittals, including time for resubmittal, if necessary.

No extension of time will be authorized because of the Contractor’s failure to transmit submittals to the Engineer sufficiently in advance of the work.

b. Product Data: Submit manufacturer’s technical information, label analysis, and application instructions for each material proposed for use.

c. Laboratory Test Reports: Submit test reports in accordance with Mn/DOT Specification 1603 for concrete finishing products. Reports shall be certified by an independent testing laboratory.

In the absence of tests by an independent testing laboratory, approved products shall have a minimum of five consecutive years of in-service field testing, monitored by Mn/DOT, demonstrating successful protection from the damaging effects of deicing chemicals.