This specification has been developed by AWCI’s Technical Subcommittee on Portland Cement Plaster (TSC 2) combining the efforts of many individuals and firms involved either in the application or manufacture of aggregated polymer finishes. Neither the information contained, nor the opinions expressed in this document are intended to constitute a warranty, either expressed or implied, as to the suitability or performance of any technique, material or method described herein.

This specification is intended to serve as a guide for the application of trowellable, aggregated polymer finish to new portland cement scratch and brown coats. Polymer finish coats, when properly applied to scratch and brown coat plaster, can provide a more flexible and crack-resistant finish, an increased resistance to moisture penetration and a deeper, richer finish color. Four levels of finishing are described. The proper level should be selected during the specification process. This specification may also be appropriate for use when existing portland cement has had its color coat removed to the point that the original brown coat plaster is exposed. Appropriate remedial work should be performed on the existing brown coat where necessary.

GUIDE SPECIFICATION
SECTION 09220

RECOMMENDED SPECIFICATION FOR THE APPLICATION OF TROWELLABLE, AGGREGATED POLYMER FINISH TO NEW PORTLAND CEMENT SCRATCH AND BROWN COAT

PART 1: GENERAL

1.01 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections apply to this Section.

1.02 RELATED SECTIONS
A. Section 09205 Furring and Lathing
B. Section 09220 Portland Cement Plaster

1.03 QUALITY ASSURANCE
A. All material, unless otherwise indicated, shall be by one manufacturer and shall be installed in accordance with its current printed directions.
B. Performance requirements; polymer finish shall comply with the following:

1. Surface Burning Characteristics
   Class A
   ASTM E84

2. Tensile Bond Strength Before and After Freeze/Thaw
   5 psi (10 cycles/ EIFS ICBO-AC24)
   ASTM C297

3. Mildew Fungus Resistance
   No growth after 28 days
   MIL STAN 810

4. Accelerated Weathering
   2000 hours. No deterioration
   ASTM G23

5. Water Vapor
   <20 grains/hr/ft²
   ASTM E96

6. Abrasion Resistance
   Surface smoothing only, at 500 liters
   ASTM E968

7. Salt Spray
   No deterioration 300 hours
   ASTM B117

1.04 DELIVERY AND STORAGE OF MATERIALS
A. All materials shall be delivered in their original, unopened container and stored in an enclosed shelter providing protection from damage and exposure to the elements. Damaged or deteriorated material shall be removed from the premises.

1.05 ENVIRONMENTAL CONDITIONS
A. In cold weather and during application of basecoat and finish, air temperature must be at least 45° F (7° C) and must remain at this temperature or higher for at least 24 hours after application. Basecoat and finish shall not be applied to portland cement scratch and brown coats that are wet, frozen or contain frost. After application, and until set and cured, finishes shall be effectively protected from rain and...
excessive moisture. Under rapid drying conditions, dampening of the portland cement scratch and brown coat surface may be required to improve workability of the basecoat. Protect the surface from direct exposure to water during the application of the basecoat and finish.

1.06 APPLICATION BASE
A. The portland cement scratch and brown coats shall have been installed per industry standard specifications:
   1. ASTM C1063 Installation of Lathing and Furring for Portland Cement-Based Plaster.
   2. ASTM C926 Application of Portland Cement-Based Plaster.
B. Portland cement scratch and brown coats shall have been mixed and applied in accordance with ASTM C926. Portland cement scratch and brown coats shall have been mixed and applied in two coats to indicated thickness. Surfaces shall have been left flat, free of trowel, darby or other marks or ridges and moist cured per ASTM C926 (except where polymer modified brown coats are applied, which do not require moist curing). After moist curing new portland cement scratch and brown coats shall have been aged a minimum of seven days or have had a dry (safe) reading achieved with a stucco moisture meter before proceeding with polymer basecoat and finish application.
C. Portland cement scratch and brown coats shall have been applied to a tolerance within 1/4" in 10'0" in all directions.

PART 2: PRODUCTS

2.01 BASECOAT
A. Basecoat: Ready-to-mix portland cement mortar containing dry latex polymers, or a liquid polymer and aggregate mixed with Type I portland cement. Basecoats are designed for application thicknesses less than 1/8".

2.02 FINISH
A. Finish: Ready-mixed, aggregated polymer coating, trowel applied that can produce various textures (fine, medium, coarse); colored per 1 specification.
B. Primer: (optional, based on level of finish) Ready-mixed, polymer coating, roller or spray applied, meeting performance criteria 2, 3 and 5 of Section 1.03 B. (Use is suggested to provide better hide, water resistance and color uniformity of the finish.)

2.03 EXTERIOR REINFORCING MESH
A. Reinforcing Mesh: A fiberglass mesh with a polymer coating to provide alkali resistance, available in various weights, 4-12 oz./yd².

PART 3: EXECUTION

3.01 POLYMER FINISH APPLICATION
A. General Application Recommendations:
   1. Fog spray the portland cement brown coat or basecoat (except where polymer modified brown coats are applied which do not require moist curing) with clean water on hot, windy or dry days to cool the wall and prevent rapid drying of polymer finish coat.
   2. Locate scaffolding a minimum of 18" from the surface of the wall to prevent staging lines.
   3. Provide sufficient manpower and scaffolding to apply the polymer finish continuously to a natural break such as a comer, expansion joint or control joint.
   4. Avoid application in direct sunlight. Work should either precede the sun or be shaded.

3.02 LEVEL 1 FINISH (Specified where finish color cannot be achieved with a conventional mineral finish and color uniformity is not of primary concern.)
A. Apply polymer finish directly to properly prepared and aged portland cement scratch and brown coats to a minimum 1/16" thickness using a stainless steel trowel. Texture with conventional plastering tools (plastic or wooden floats). Do not use a steel trowel to float. Portland cement scratch and brown coats must be in an acceptable surface condition for direct application of polymer finish.

3.03 LEVEL 2 FINISH: ONE COAT WITH PRIMER (Specified where finish color cannot be achieved with a conventional mineral finish and color uniformity is a concern.)
A. Apply primer to properly prepared and cured portland cement scratch and brown coats with brush, roller or spray per manufacturer’s instructions.
B. Apply polymer finish per section 3.02.

3.04 LEVEL 3 FINISH: TWO COAT POLYMER SYSTEM (Specified where finish color cannot be achieved with a conventional mineral finish; color uniformity and improved crack resistance and water resistance is desired.)
A. Mix basecoat per manufacturer’s instruction. Apply an initial coat by tightly scratching the material into the portland cement scratch and brown coat surface. Immediately double up with a second coat to bring the material thickness to a minimum of 1/16". Leave surface smooth and even. This is especially critical for fine finishes.
B. Allow basecoat to cure a minimum of 24 hours and apply polymer finish per section 3.02.

3.05 LEVEL 4 FINISH: TWO COAT POLYMER SYSTEM WITH MESH (Specified where finish color cannot be achieved with a conventional mineral finish; color uniformity, greater crack resistance and water resistance is desired.)
A. Mix basecoat per manufacturer’s instruction. Apply a thin initial coat by tightly scratching the material into the portland cement scratch and brown coat surface. Embed exterior reinforcing mesh into the basecoat and immediately apply a second (double up) coat, to completely embed the mesh. Total basecoat thickness should be 3/32" and the mesh should not be visible on the basecoat surface. Leave surface smooth and even. This is especially critical for fine finishes.
B. Allow basecoat to cure a minimum of 24 hours and apply polymer finish per section 3.02.
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This specification is intended to serve as a guide for the application of trowellable, aggregated polymer finish over existing conventional mineral stucco finish. Polymer finish coats, when properly applied to existing mineral stucco finishes, can provide a more flexible and crack-resistant finish, an increased resistance to moisture penetration and a deeper, richer finish color. Four levels of finishing are described. The proper level should be selected during the specification process. Appropriate remedial work, including sandblasting or waterblasting, should be preformed on the existing stucco finish prior to application of the polymer finish.

GUIDE SPECIFICATION
SECTION 09220

RECOMMENDED SPECIFICATION FOR THE APPLICATION OF TROWELLABLE, AGGREGATED POLYMER FINISH TO EXISTING PORTLAND CEMENT FINISH

PART 1: GENERAL

1.01 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections apply to this Section.

1.02 RELATED SECTIONS
A. Section 09205 Furring and Lathing
B. Section 09220 Portland Cement Plaster

1.03 QUALITY ASSURANCE
A. All materials, unless otherwise indicated, shall be by one manufacturer and shall be installed in accordance with its current printed directions.
B. Performance requirements; polymer finish shall comply with the following:

1. Surface Burning Characteristics Class A ASTM E84
2. Tensile Bond Strength Before and After Freeze/Thaw 5 psi (10 cycles/ EIFS ICBO-AC24) ASTM C297
3. Mildew Fungus Resistance No growth after 28 days MIL STAN 810
4. Accelerated Weathering 2000 hours. No deterioration ASTM G23
5. Water Vapor <20 grains/hr/ft² ASTM E96
6. Abrasion Resistance Surface smoothing only, at 500 liters ASTM E968
7. Salt Spray No deterioration 300 hours ASTM B117

1.04 DELIVERY AND STORAGE OF MATERIALS
A. All materials shall be delivered in their original, unopened container and stored in an enclosed shelter providing protection from damage and exposure to the elements. Damaged or deteriorated material shall be removed from the premises.

1.05 ENVIRONMENTAL CONDITIONS
A. In cold weather and during application of basecoat and finish, air temperature must be at least 45° F (7° C) and must remain at this temperature or higher for at least 24 hours after application. Basecoat and finish shall not be applied to portland cement finish that is wet, frozen or contains frost. After application, and until set and cured, finishes shall be effectively protected from rain and excessive moisture. Under rapid drying conditions, dampening of the portland cement finish surface may be required to improve workability of the basecoat. Protect the surface from direct exposure to water during the application of the basecoat and finish.
1.06 APPLICATION BASE
   A. The existing portland cement finish shall have been installed per industry standard specifications:
      1. ASTM C1063 Installation of Lathing and Furring for Portland Cement-Based Plaster.
      2. ASTM C926 Application of Portland Cement-Based Plaster.
   B. Existing portland cement surfaces shall be cleaned of loose materials or other coatings that could adversely affect the bond of the new troweled aggregated polymer finish.

PART 2: PRODUCTS

2.01 BASECOAT
   A. Basecoat: Ready-to-mix portland cement mortar containing dry latex polymers, or a liquid polymer and aggregate mixed with Type I portland cement. Basecoats are designed for application thicknesses less than 1/8”.

2.02 FINISH
   A. Finish: Ready-mixed, aggregated polymer coating, trowel applied that can produce various textures (fine, medium, coarse); colored per specification.
   B. Primer: Ready-mixed, polymer coating, roller or spray applied, meeting performance criteria 2, 3 and 5 of Section 1.03 B. (Use is suggested to provide better hide, water resistance and color uniformity of the finish.)

2.03 EXTERIOR REINFORCING MESH
   A. Reinforcing Mesh: A fiberglass mesh with a polymer coating to provide alkali resistance, available in various weights, 4-12 oz./yd².

PART 3: EXECUTION

3.01 POLYMER FINISH APPLICATION
   A. Surface Cleaning:
      1. Clean portland cement finish surface to remove dirt and all foreign materials that will interfere with bonding. Use low pressure (1000-1500 psi) water washing and brushing. Do not use cleaning agents that will interfere with bonding.
      2. If efflorescence is present or excessive, acid wash to remove.
   B. Portland Cement Finish Repair
      1. Remove all loose material and fill all voids with similar portland cement finish material and texture to match existing wall.
      2. Fill all cracks with similar portland cement finish material or compatible patching material as required.
   C. General Application Recommendations:
      1. Fog spray the portland cement finish or basecoat with clean water on hot, windy or dry days to cool the wall and prevent rapid drying of polymer finish coat.
      2. Locate scaffolding a minimum of 18” from the surface of the wall to prevent staging lines.
      3. Provide sufficient manpower and scaffolding to apply the polymer finish continuously to a natural break such as a corner, expansion joint or control joint.
      4. Avoid application in direct sunlight. Work should either precede the sun or be shaded.

3.02 LEVEL 1 FINISH (Specified where finish color cannot be achieved with a conventional mineral finish and color uniformity is not of primary concern.)
   A. Apply polymer finish directly to properly prepared and aged portland cement finish to a minimum 1/16” thickness using a stainless steel trowel. Texture with conventional plastering tools (plastic or wooden floats). Do not use a steel trowel to float. Portland cement finish must be in an acceptable surface condition for direct application of polymer finish.

3.03 LEVEL 2 FINISH: ONE COAT WITH PRIMER (Specified where finish color cannot be achieved with a conventional mineral finish and color uniformity is a concern.)
   A. Apply primer to properly prepared and cured portland cement finish with brush, roller or spray per manufacturer’s instructions.
   B. Apply polymer finish per section 3.02.

3.04 LEVEL 3 FINISH: TWO COAT POLYMER SYSTEM (Specified where finish color cannot be achieved with a conventional mineral finish; color uniformity and improved crack resistance and water resistance is desired.)
   A. Mix basecoat per manufacturer’s instruction. Apply an initial coat by tightly scratching the material into the existing portland cement finish surface. Immediately double up with a second coat to bring the material thickness to a minimum of 1/16”. Leave surface smooth and even. This is especially critical for fine finishes.
   B. Allow basecoat to cure a minimum of 24 hours and apply polymer finish per section 3.02.

3.05 LEVEL 4: TWO COAT POLYMER SYSTEM WITH MESH (Specified where finish color cannot be achieved with a conventional mineral finish; color uniformity, greater crack resistance and water resistance is desired.)
   A. Mix basecoat per manufacturer’s instruction. Apply a thin initial coat by tightly scratching the material into the existing portland cement finish surface. Embed exterior reinforcing mesh into the basecoat and immediately apply a second (double up) coat, to completely embed the mesh. Total basecoat thickness should be 3/32” and the mesh should not be visible on the basecoat surface. Leave surface smooth and even. This is especially critical for fine finishes.
   B. Allow basecoat to cure a minimum of 24 hours and apply polymer finish per section 3.02.