

*SPEC NOTE: Notes in italics, such as this one, are explanatory and intended to guide the design/construction professional and user in the proper selection and use of materials. This specification should be modified where necessary to accommodate individual project conditions.*

## PART 1 GENERAL

### 1.1 SUMMARY

- .1 Provide acrylic-based primer and finish coating for vertical, above-grade, new, uncoated concrete, stucco, and masonry walls.

*SPEC NOTE: IMPORTANT: This guide specification covers installation of a coating and primer over building code compliant wall construction. It does not address air sealing, construction detailing, flashing and other important aspects of design and construction that must be taken into consideration to prevent water infiltration, to prevent condensation caused by air leakage or water vapor diffusion, and to comply with applicable fire safety requirements. Consult with a qualified design professional for overall design of the wall assembly.*

- .2 Related Sections: Other specification sections which relate directly to the work of this section include the following:
  - .1 Section 033000 Cast-In-Place Concrete
  - .2 Section 034000 Precast Concrete
  - .3 Section 042200 Concrete Unit Masonry
  - .4 Section 092400 Portland Cement Plastering

### 1.2 SUBMITTALS

- .1 Product Data: Submit manufacturer's product data and installation instructions for each material and product used. Include manufacturer's Material Safety Data Sheets.

### 1.3 REFERENCES

- .1 ASTM International (ASTM)
  - ASTM D 412 Tensile Strength
  - ASTM D 522 Mandrel Bend Flexibility
  - ASTM D 2247 Moisture Resistance
  - ASTM D 3273 Mold Resistance
  - ASTM D 4541 Direct Tensile Bond
  - ASTM D 6904 Resistance to Wind Driven Rain
  - ASTM E 84 Flame Spread and Smoke Developed
  - ASTM E 96 Water Vapor Permeability

- .2 U.S. Environmental Protection Agency (USEPA)  
EPA Method 24                      VOC
- .3 South Coast Air Quality Management District (SCAQMD)  
Rule 1113
- .4 European Standards  
EN 1062                              Carbon Dioxide Diffusion
- .5 National Cooperative Highway Research Program (NCHRP)  
NCHRP 244                          Chloride Ion Penetration Reduction

#### 1.4            **QUALITY ASSURANCE**

- .1 **Manufacturer's Qualifications:** The manufacturer shall be a company with at least thirty-five years of experience in manufacturing specialty coatings and regularly engaged in the manufacture and marketing of products specified herein. The manufacturer shall have an ISO 9001:2008 certified quality system and ISO 14001:2004 certified environmental management system.
- .2 **Installer's Qualifications:** The contractor shall be qualified to perform the work specified by reason of experience. Contractor shall have at least 5 years experience in commercial coating application, and shall have completed at least 3 projects of similar size and complexity. Contractor shall provide proof before commencement of work that he will maintain and supervise a qualified crew of applicators through the duration of the work. When requested Contractor shall provide a list of the last three comparable jobs including the name, location, and start and finish dates for the work.
- .3 **Mock-ups:** The contractor shall install a mock-up using proposed application means and methods to a wall area of at least 25 sq. ft. (2.32 sq.m.) for evaluation and approval by the design professional, building owner, or owner's representative/quality assurance agent. Mock-up shall be sufficient size to adequately demonstrate proposed application means and methods.
  - .1 Conduct tests in accordance with ASTM D 4541 on mock-up to verify adhesion of installed primer and top coat to prepared substrate. Test at least 3 specimens and report results to design professional, building owner, or owner's representative/quality assurance agent.
  - .2 Conduct tests during coating installation as directed by design professional, building owner, or owner's representative/quality assurance agent to verify adhesion throughout the course of the installation.

#### 1.5            **DELIVERY, STORAGE AND HANDLING**

- .1 Deliver products in original packaging, labeled with product identification, manufacturer, batch number, and shelf life.

- .2 Store products in a dry area with temperature maintained between 50 and 85 degrees F (10 and 29 degrees C). Protect from direct sunlight. Protect from freezing. Protect from extreme heat (>90 degrees F [32 degrees C]).
- .3 Handle products in accordance with manufacturer's printed instructions.

## 1.6 WARRANTY

- .1 Provide manufacturer's standard limited warranty.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- .1 Concrete and stucco substrate primer: Acrylic-based, tinted, high-pH compatible primer/sealer:
  - .1 80805 StoPrime Hot, as manufactured by Sto Corp., 3800 Camp Creek Parkway, Building 1400, Suite 120, Atlanta, Georgia 30331.
  - .2 Performance and Physical Properties: Meet or exceed the following values for material cured at 73 degrees F (23 degrees C) and 50 percent relative humidity (unless otherwise specified).
    - .1 Application: Spray, roller, or brush.
    - .2 Working time: 10-20 minutes, depending on ambient conditions.
    - .3 Adhesion to concrete: 680 psi (4.69 MPa), ASTM D 4541
    - .4 Flame Spread Index: 0, ASTM E 84,
    - .5 Smoke Developed: 10, ASTM E 84
    - .6 Water vapor transmission: 30 perms (1720 ng/Pa.s.sq.m.), tested at 3 dry mils applied in one coat, ASTM E 96, wet cup method.
    - .7 VOC: < 100 g/L, EPA 24, complies with SCAQMD Rule 1113
- .2 Concrete masonry substrate primer: Acrylic-based based, masonry block-filler/primer. Single component acrylic-based primer, containing acrylic polymer, and fine mineral fillers. Product shall comply with the following (select one):
  - .1 80804 StoPrime as manufactured by Sto Corp., 3800 Camp Creek Parkway, Building 1400, Suite 120, Atlanta, Georgia 30331.
  - .2 81520 StoPrime Block Surfacers HP as manufactured by Sto Corp., 3800 Camp Creek Parkway, Building 1400, Suite 120, Atlanta, Georgia 30331.
  - .3 Performance and Physical Properties: Meet or exceed the following values for material cured at 73 degrees F (23 degrees C) and 50 percent relative humidity (unless otherwise specified).
    - .1 Application: Spray, roller, or brush.

- .2 Working Time: 10-20 minutes.
- .3 Flame Spread: < 25, ASTM E 84
- .4 Smoke Developed: < 450, ASTM E 84
- .5 VOC: <100 g/L, EPA 24, Complies with SCAQMD Rule 1113
- .3 Finish Coating: Single component acrylic-based coating, containing acrylic polymer, and colored pigments. Product shall comply with the following:
  - .1 80648 StoColor Acryl Plus, as manufactured by Sto Corp.
  - .2 Performance and Physical Properties: Meet or exceed the following values for material cured at 73 degrees F (23 degrees C) and 50 percent relative humidity (unless otherwise specified).
    - .1 Working Time: 10-30 minutes, depending on ambient conditions.
    - .2 Application: Spray, roller, or brush.
    - .3 Resistance to wind-driven rain: No water penetration, weight gain less than 0.02 lbs. (0.01 kg), ASTM D 6904
    - .4 Tensile Strength: 386 psi (2.7 MPa), minimum at break, ASTM D 412
    - .5 Elongation at Break: 306% minimum, ASTM D 412
    - .6 Flexibility Mandrel Bend Elongation: No cracking (% elongation greater than 32) at -14 degrees F (-26 degrees C), ASTM D 522.
    - .7 Moisture Resistance: No adhesion loss, discoloration, blistering, cracking, flaking, ASTM D 2247, 14 day exposure.
    - .8 Mold Resistance: No Mold Growth at 90 days, ASTM D 3273
    - .9 Adhesion to Concrete: 320 psi (2.20 MPa), ASTM D 4541
    - .10 Water Vapor Permeability: 25 perms (1434 ng/Pa.s.sq.m.), tested at 10 dry mils applied in one coats, ASTM E 96, wet cup method.
    - .11 Carbon Dioxide Diffusion Resistance Coefficient: 1,400,000, EN-1062
    - .12 Carbon Dioxide Diffusion Resistance: 200 m
    - .13 VOC: <50 g/L, EPA 24, Complies with SCAQMD Rule 1113
    - .14 Chloride Ion Penetration Reduction: 90.7%, NCHRP-244, Phase 1 method.
    - .15 Solids Content: 53%, by volume.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- .1 Surface Preparation

- .1 All surfaces must be clean, dry, sound, and free of frost and contamination such as mildew, dirt, grease, oils, salts, efflorescence and any other contamination that may affect adhesion.
- .2 Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas and landscaping from contact due to mixing, handling, and installation of materials.
- .2 Mixing
  - .1 Mix Sto products in accordance with published literature for the product. Mix for approximately 3 minutes using a slow-speed drill and paddle to a uniform consistency. Avoid entrapping air in the liquid during mixing.
- .3 Application
  - .1 Apply primer to prepared substrate in accordance with written instructions presented on the Sto Product Bulletin for the primer product being used.
  - .2 Apply two coats of StoColor Acryl Plus at 8--10 wet mils, per coat, by brush, roller, or appropriate spray equipment. Apply first coat directly to primed substrate and allow to dry completely before applying second coat. Final thickness of StoColor Acryl Plus shall be minimum 8.4 dry mils, per coat.
- .4 Protection
  - .1 Provide protection of installed materials from water infiltration into or behind them.
  - .2 Provide protection of installed materials from dust, dirt, precipitation, freezing and continuous high humidity until they are fully dry.
  - .3 Provide coping and/or flashing at sills, projecting features, deck attachments, roof/wall intersections, parapets and similar construction details to prevent water entry into wall assembly or into and behind the finish system. Seal penetrations through the finished wall surface with backer rod and sealant or other appropriate means to provide a watertight condition.

END OF SECTION 09 91 13

#### ATTENTION

Sto products are intended for use by qualified professional contractors, not consumers, as a component of a larger construction assembly as specified by a qualified design professional, general contractor or builder. They should be installed in accordance with those specifications and Sto's instructions. Sto Corp. disclaims all, and assumes no, liability for on-site inspections, for its products applied improperly, or by unqualified persons or entities, or as part of an improperly designed or constructed building, for the nonperformance of adjacent building components or assemblies, or for other construction activities beyond Sto's control. Improper use of Sto products or use as part of an improperly designed or constructed larger assembly or building may result in serious damage to Sto products, and to the structure of the building or its components. **STO CORP. DISCLAIMS ALL WARRANTIES EXPRESS OR IMPLIED EXCEPT FOR EXPLICIT LIMITED WRITTEN WARRANTIES ISSUED TO AND ACCEPTED BY BUILDING OWNERS IN ACCORDANCE WITH STO'S WARRANTY PROGRAMS WHICH ARE SUBJECT TO CHANGE FROM TIME TO TIME.** For the fullest, most current information on proper application, clean-up, mixing and other specifications and warranties, cautions and disclaimers, please refer to the Sto Corp. website, [www.stocorp.com](http://www.stocorp.com).