

This guide specification is intended for application of a Sto coating over existing 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 and any remedial measures that may be necessary, including those needed to comply with the applicable building code.

For purposes of this specification, primer is optional depending on the condition of existing coated wall surfaces. Primer is generally necessary for high pH surfaces, or highly weathered and absorbent surfaces, and to enhance adhesion, durability, and aesthetics. Primer products are included in this specification for consideration by the design professional based on existing project conditions. Whether or not a primer is necessary should be based on mock-up construction and field adhesion tests.

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 recoating vertical, above-grade, existing coated concrete, stucco, masonry, and EIFS walls.
- .2 Related Sections: Other specification sections which relate directly to the work of this section include the following:
 - .1 Section 07 92 00, Joint Sealants

1.2 SUBMITTALS

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

1.3 REFERENCES

- .1 ASTM International (ASTM)
 - .1 ASTM B117 Salt Spray
 - .2 ASTM D1308 Alkali Resistance
 - .3 ASTM D1653 Water Vapor Permeability
 - .4 ASTM D2370 Tensile Strength
 - .5 ASTM D2485 Freeze Thaw Resistance
 - .6 ASTM D2697 Percent Solids
 - .7 ASTM D3273 Mould Resistance
 - .8 ASTM D4541 Field Adhesion Tests

- .9 ASTM D522 Mandrel Bend Flexibility
- .10 ASTM D6904 Resistance to Water Driven Rain
- .11 ASTM D7234 Adhesion to Concrete
- .12 ASTM E2485 Freeze/Thaw
- .13 ASTM E84 Surface Burning
- .14 ASTM G154 Accelerated Weathering
- .2 South Coast Air Quality Management District (SCAQMD)
 - .1 Rule 1113 - VOC
- .3 European Standards
 - .1 EN 1062-6 CO2 Diffusion Resistance
- .4 National Cooperative Highway Research Program (NCHRP)
 - .1 NCHRP 244 Series 1 - Chloride Ion Penetration

1.4 QUALITY ASSURANCE

- .1 **Manufacturer's Qualifications:** The manufacturer shall be a company with at least forty 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 9001:2015 certified quality system and ISO 14001:2015 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/she 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 100 sq. ft. (9.29 sq.m.) for evaluation and approval by the design professional, building owner, or owner's representative/quality assurance agent. Mock-up shall be of sufficient size to adequately demonstrate proposed application means and methods.
- .4 **Field Quality Control Tests**
 - .1 Conduct tests in accordance with ASTM D 4541 on mock-up to verify adhesion of installed primer and topcoat 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 unopened 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

NOTE: use conditioner or primer based on prepared surface condition as indicated below. A primer may not be required if existing prepared surface condition is suitable as is to receive finish coating. Construct a mock-up and conduct field adhesion tests to verify performance of primed and un-primed applications.

- .1 Surface Conditioner – for chalking or highly absorbent existing painted surfaces
 - .1 StoPrime Conditioner: water-based surface conditioner
- .2 Primer: (choose one)
 - .1 80805 StoPrime Hot: acrylic-based, tinted, high-pH compatible primer/sealer for high pH surfaces, as manufactured by Sto Corp.
 - .2 81520 StoPrime Block Surfacer HP: acrylic-based masonry block-filler/primer for open texture porous surfaces (e.g., concrete masonry), as manufactured by Sto Corp.
- .3 Finish Coating: Single component acrylic-based coating, containing acrylic polymer, and coloured pigments.
 - .1 80648 StoColor Acryl Plus, as manufactured by Sto Corp.
 - .2 Testing Requirements: meets or exceed the following test results:

REPORT	TEST METHOD	TEST CRITERIA	TEST RESULT*
Salt Spray	ASTM B117	300 hours	No deleterious effects at 1000 hours
Tensile Strength psi (MPa)	ASTM D2370	2 coats at 10 WFT each	932 (6.42)
Flexibility, Mandrel Bend	ASTM D522	at 70°F (21°C) at -14°F (-26°C)	No cracking No cracking
Mold Resistance	ASTM D3273	28-day exposure	Rating=10, No growth at 90 days
Efflorescence Blocking	ASTM D7072	48 hours in humidity cabinet at 100°F (39°C)	No efflorescence observed
Adhesion to Concrete psi (MPa)	ASTM D7234	> 50 (0.344)	296 (2.04)

Resistance to Wind Driven Rain	ASTM D6904	No visible water leaks after 24-hour water spray with 98 mph (158 km/h) equivalent wind speed	No visible water leaks: -2 coats (0.02 lbs. gain) -1 coat over StoPrime Hot (0.04 lbs. gain) -1 coat over StoPrime Block Surfacers HP (0.08 lbs gains)
Surface Burning	ASTM E84	Flame Spread: ≤ 25 Smoke Develop: ≤ 450	FS: 0 SD: 0
Water Vapor Permeability Perms (ng/Pa·s·m ²)	ASTM D1653** Wet-cup method	Unprimed	2 coats: 20.6 (1178)
Water Vapor Permeability (w primer) Perms (ng/Pa·s·m ²)	ASTM D1653** Wet-cup method	StoPrime Block Surfacers HP w 1 and 2 topcoats StoPrime Hot w 1 and 2 topcoats	1 topcoat: 22 (1259) 2 topcoats: 20 (1144) 1 topcoat: 16 (915) 2 topcoats: 13 (744)
Freeze Thaw Resistance	ASTM E2485	60 cycles	Pass, no deleterious effects at 90 cycles when viewed under 5X magnification
Accelerated Weathering	ASTM G154	2000 hours	No deleterious effects at 5000 hours
CO ₂ Diffusion Resistance	PR EN 1062-6	Measure 2 coats at 8-10 WFT each	SD = 150 m
Chloride Ion Penetration	NCHRP 244 Series 1	Measure percent change 2 coats at 8-10 WFT each	64% less chloride ion content on average compared to uncoated test specimens
% Solids by Volume	ASTM D2697	N/A	41%
VOC (g/L)	This product complies with US EPA (40 CFR 59) and South Coast AQMD (Rule 1113) VOC emission standards for architectural coatings. VOC less than 50 g/L.		
* Results are based on lab testing under controlled conditions. Results can vary between labs or from field tests. **D1653 results are estimates based on E96 wet cup method			

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. Use appropriate repair methods for the substrate to repair pitting, spalls, cracks, delamination, weak surface conditions such as laitance, water damage, or other defects that may exist.
 - .2 If pressure washing, follow necessary safety precautions and adjust pressure to avoid damage to the underlying substrate. For mould, algae, and mildew removal, treat surfaces with a compatible commercial mildew removal and/or wash product, carefully following manufacturer's application and safety directions for use and handling, including any special requirements when used in preparation for application of paints or coatings.
 - .3 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 up to 3 minutes using a slow-speed drill and paddle to a uniform consistency. Avoid entrapping air in the liquid during mixing.

- .3 Application

NOTE: Do not apply primer or finish coating to StoPrime conditioner if it dries to a gloss. Remove gloss with mechanical abrasion. Omit conditioner if substrate condition is such that no conditioner is required based on mock-up and field adhesion tests.

- .1 Surface Conditioner
 - .1 Apply StoPrime Conditioner evenly with brush, roller or proper spray equipment to properly prepared mildly chalking substrates.
 - .2 Follow application instructions on StoPrime Conditioner, read product bulletin carefully.

NOTE: Select ".1" or ".2". Omit primer application if substrate condition is such that no primer is required based on mock-up and field adhesion tests, and apply two finish coats.

- .2 Primer
 - .1 **StoPrime Hot:** Apply uniformly with brush, roller, or proper spray equipment at 5-7 wet mils to prepared surface and allow to dry. Minimum final dry thickness shall be 2.1 mils.
 - .2 **StoPrime Block Surfacer HP:** Apply uniformly with brush, roller, or proper spray equipment at 14-16 wet mils to prepared surface and allow to dry. Minimum final dry thickness shall be 7.7-8.8 dry mils.
- .3 Finish Coat:
 - .1 **80648 StoColor Acryl Plus:** Apply uniformly with brush, roller, or proper spray equipment at 8-10 wet mils to prepared surface and allow to dry. As specified or required by project specific documents, apply a second coat and allow to dry. Final thickness of coating shall be 3.3-4.1 dry mils, per coat.

3.2 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.

Sto Canada Master Specification
StoColor® Acryl Plus
July 2020_003
No. CA-80648R

Acrylic-Based, Vertical Above-Grade Exterior
Wall Coating for
Recoating EIFS, Concrete, Stucco, and
Masonry Construction
Section 09 91 13
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