

Product Guide Specification
SECTION 09965
TRANSLUCENT SILICONE COATING

PART 1 GENERAL

The purpose of this specification is to provide general information and to discuss how to apply GE Optic* Translucent Silicone Coating. ***This information herein is not intended to replace the expertise of a professional industry consultant / inspector who is qualified in the restoration and the forensic investigation of buildings.***

1.1 SECTION INCLUDES

- A. Silicone Elastomeric Coating.

1.2 RELATED SECTIONS

- A. Section 09910 - Paints.
- B. Section 09960 - High-Performance Coatings.

1.3 REFERENCES

- A. ASTM D 412 - Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers - Tension.
- B. ASTM D 2240 - Rubber Property - Durometer Hardness.

1.4 SUBMITTALS

- A. Comply with Section 01330 - Submittal Procedures.
- B. Product Data: Submit manufacturer's product data, including surface preparation and application.
- C. Color Samples: Submit manufacturer's translucent samples.
- D. Manufacturer's Review: Submit manufacturer's review that proposed materials are suitable for intended application.
- E. Warranty: Submit manufacturer's standard warranty.

1.5 QUALITY ASSURANCE

- A. Mock-Ups:
1. Prepare field mock-up of coating for each type of surface using same materials, tools, equipment, and procedures intended for actual surface preparation and application under actual use and environmental conditions.
 2. Verify effectiveness of surface preparation.
 3. Verify performance of coating.
 4. Verify coating adhesion to substrate(s).
 5. Invite the attendance of Contractor, Architect, Applicator, Manufacturer's representative and other relevant parties to observe preparation of mock-ups and to witness adhesion test.
 6. Obtain Architect, Owner, Consultant, or other authorized representative's approval of mock-ups.
 7. Retain mock-ups to establish intended standards by which coating will be evaluated.
- B. Pre-application Meeting: Convene a pre-application meeting two [2] [_____] weeks or as required by architect, owners agent or consultant before start of application of coating. Invite attendance of parties directly affecting work of this section, including Contractor, Architect, Applicator, and Manufacturer's Representative. Review examination, surface preparation, application, field quality control, cleaning, protection, and coordination with other work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying:
1. Product name.
 2. Manufacturer.
 3. Color.
 4. Batch or lot number.
 5. Date of manufacture.
 6. Use-before date.
- B. Storage:
1. Store materials in a clean, dry area indoors in accordance with manufacturer's instructions.
 2. Store materials within temperature range in accordance with manufacturer's instructions.
 3. Keep containers sealed until ready for use.
 4. Do not use materials after manufacturer's use-before date.
- C. Handling: Protect materials from damage and contamination during handling and application.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Application is not recommended when the temperature is below 20° F (-7° C) or if frost or moisture is present on the surfaces to be coated. Refer to the Momentive Performance Materials (MPM) Technical bulletin "Cold Weather Installation Guidelines" for additional information.
- B. Application not recommended to surfaces above 120° F (49° C). The time to complete cure of this product is dependent upon temperature and humidity. Under basic conditions [72 °F (22° C) and 50% RH] this material can attain a tack-free surface in 1-2 hours. As temperatures drop towards freezing, application should proceed with caution due to the possibility of moisture (dew, frost) on surfaces to be coated as well as longer curing times relative to application of a second or touchup coat (recoat), (and vice versa as temperatures increase).
- C. When spraying Optic coating in windy conditions, take precautionary measures to avoid excessive overspray. It is suggested to withhold spraying when wind speeds exceed 10 mph.
- D. Prior to application, ensure that a minimum of 4 hours of adequate temperature and cure time are available when inclement weather is predicted. Contact Momentive technical services for additional time-related precautionary measures when application is proceeding under winter temperatures and conditions.

1.8 WARRANTY

- A. General: Manufacturer's standard project-specific form in which manufacturer agrees to repair or replace architectural coating that demonstrates deterioration or failure within warranty period specified due to material failure under normal use.
 - 1. Warranty Period: *fifteen (15) years* from date of Substantial Completion.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Momentive Performance Materials, 260 Hudson River Road Waterford, NY 12188. Web Site www.siliconeforbuilding.com

2.2 SILICONE ELASTOMERIC COATING

- A. Basis of design Coating: GE Optic 3101 Translucent Silicone Coating.
- B. Description: One-component, elastomeric, silicone, high-solids, UV resistant, coating.
- C. Properties, As Supplied:
 - 1. Density (lb/gal), WPSTM P 14: 8.17 pounds per gallon (.97 g/ml).
 - 2. Solids Content, By Volume, WPSTM C 19: 73 percent.



3. Solids Content, By Weight, WPSTM C 19: 70 percent.
4. Tack-Free Time, WPSTM E 86: 1 to 2 hours.
5. Skin-Over Time: <30 minutes.
6. Viscosity, WPSTM C 560: 5,000 centipoises
7. Volatile Organic Content (VOC), EPA Method 24: 24 g/L.

D. Properties, As Cured:

1. Tensile Strength, ASTM D 412: 121 psi.
2. Elongation, ASTM D 412: 200 percent.
3. Vapor Permeance (10 Mils DFT) ASTM E 96 Wet Cup: 18 perms.
4. Wind Driven Rain Resistance, ASTM D6904: Pass.

E. Color: [Translucent].

F. Primer: If necessary based on adhesion testing. Compatible with surfaces and coating. Approved by manufacturer. Most GE Optic coating applications do not require the use of a primer. Verify coating adhesion to substrate as specified under Field Quality Control in Section 3.4.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to receive coating. Notify Architect/Consultant or owner's representative if conditions are not acceptable. Do not begin surface preparation or application until unacceptable conditions have been corrected.

3.2 SURFACE PREPARATION

- A. Prepare surfaces in accordance with manufacturer's instructions.
- B. Remove dirt, dust, oil, grease, rust, mildew, chalk, efflorescence, concrete laitance, concrete form release agents, concrete curing compounds, loose particles, other bond breaking contaminants, and unsound materials.
- C. Solvents shall not be used on concrete without consulting with Momentive Technical Services. Concrete must be free of release agents, curing compounds, or other adhesion inhibiting contaminants.
- D. Allow concrete and mortar to cure for a minimum of 30 days before coating.
- E. Fill cracks and holes with approved patching materials and sand smooth.



1. All cracks greater than hairline width, approximately 0.8 mm (1/32 inch), must be ground out and patched with sealant or appropriate patching compound. Alternatively, cracks may be sealed by brushing in optic coating. Sealant or patching compound repairs should match the substrate color and texture as closely as possible.
 2. Structural cracks of any thickness must be repaired with approved material and stabilized to prevent movement.
- F. Protect surrounding areas and surfaces not intended to be coated from damage during surface preparation and application.
1. Misapplied uncured or partially cured coating on non-porous surfaces shall be removed by wiping with dry cloths, or cloths wet with mineral spirits followed by dry cloths. Cured coating may be removed from nonporous surfaces such as glass or metal by razor scraping. Removal from porous surfaces such as stone, concrete or wood should be attempted as described above for nonporous surfaces. It may be necessary to abrade, sandblast or sand the cleaned porous surface to remove all traces of coating residue. Plants and animal life should be removed from exposure or provided with positive protection from overspray or misapplication of coating.
 2. Removal of misapplied coatings is the responsibility of the applicator.
 3. After the coating is applied, the contractor shall remove all masking and other protection and clean up any remaining defacement caused by this work.

3.3 APPLICATION

- A. Ensure surfaces to receive coating are clean, dry, structurally sound, and free of frost and frozen materials. As temperatures drop towards freezing, application should proceed with caution due to the possibility of moisture (dew, frost) on surfaces to be coated as well as longer curing times relative to application of a second or touchup coat (recoat).
- B. Apply uniform, pinhole-free coating in two (2) separate coats at spreading rate required to achieve a total minimum dry film thickness of 0.010 inch (10 mils/254 microns). Apply coating in accordance with manufacturer's instructions.
1. Each application should be applied at a wet thickness per coat of 0.07 inches (7 mils/177 microns). Wet coating thickness may be estimated by using a wet film thickness gauge. Maximum calculated theoretical coverage per coat is 234 ft²/gallon. A mockup must be applied to determine the actual coverage rate per gallon needed to provide a pinhole free film at the minimum required dry film thickness.
 2. The second coat may be applied when the first coat is tack free to the touch. A tack free condition will usually take at least one (1) hour at 70-80° F (21-27 ° C). (Cooler temperatures will require more time. While cured to the touch, the coating will typically take 3-7 days to achieve final physical properties.



3. Apply coating from top to bottom of substrate. Work down the vertical surface and cover any rundown in the process. Avoid excessive overlapping.
 4. Apply architectural coating as closely as possible to a consistent film thickness free of cloudiness, spotting, laps, brush marks, roller tracks, and other surface imperfections. Cut in breaks and terminations with sharp lines.
 5. Apply additional coats as required to provide cured film with uniform coverage, finish, and appearance.
- C. Do not dilute coating without consulting with Momentive Technical Services.
- D. Keep containers closed when not in use to avoid contamination.
- E. Apply primer, if required, in accordance with manufacturer's instructions. Allow primer to dry before applying coating.
- F. Avoid over spray of coating. Over spray and misapplied coating should be removed immediately in accordance with manufacturer's instructions while it is still uncured. Repair or replace surfaces damaged by overspray or misapplied coating as determined by Architect.

3.4 FIELD QUALITY CONTROL

- A. Verify total dry film thickness of applied coating in accordance with specified requirements using a dry film gauge. Coating thickness may be verified by measuring the thickness of the cured coating piece with a micrometer.
- B. Visually assess coating for film characteristics or defects that would adversely affect performance or appearance.
- C. Verify coating adhesion to substrate following full cure.
1. After substrate preparation, apply one coat at 6-8 wet mils in an unobtrusive area.
 2. While the coating is still wet, embed a 1" x 6" length of mesh screen / piece of gauze into the coating leaving an approximate 2" tab accessible for hand pull. Allow product to become tack-free.
 3. Once the first coat is tack-free, apply a second coat at 6-8 wet mils over the mesh screen / gauze. Allow product to cure for 72 hours before performing adhesion testing.
 4. Grasp the mesh screen / gauze tab and pull it away from the surface at a 90-degree angle. Pull until it tears cohesively (or releases from the surface) and photograph / document results. Good adhesion will be evidenced by breaking of coating film. Touch up adhesion test area with more coating.
 5. Refer to Momentive Technical Services for any questions
- D. Correct nonconforming work.



3.5 CLEANING

- A. Remove temporary coverings and protection of surrounding areas and surfaces.

3.6 PROTECTION

- A. Protect applied coating from rain or damage until tack free.

END OF SECTION