

GE Enduris* 3500 High Solids Silicone Roof Coating

INSTALLATION GUIDE SPECIFICATION FOR RESTORATION OF EXISTING
SINGLE-PLY ROOFS (20 YEAR WARRANTY)

PART 1—GENERAL

1.01 SUMMARY

- A. GE Enduris* 3500 silicone roof coating, manufactured by Momentive Performance Materials, Inc. (MPM), is a high solids, solvent-free, alkoxy-based silicone roof coating, which moisture cures to a durable, breathable, waterproof barrier that is highly resistant to degradation from UV and natural weathering. Enduris 3500 silicone roof coating may be used to topcoat existing single-ply membranes, including TPO, PVC, EPDM and CSPE (Hypalon®), for restoration and longevity.
- B. Scope: Installation of Enduris 3500 silicone roof coating, labor and accessory materials.
- C. Exclusions: This guide specification does not include: repair or replacement of roof accessory items such as vents, expansion joints, drains, penetrations and mechanical equipment; evaluation and correction of roof load capacity or wind uplift resistance.

1.02 SUBMITTALS

- A. Product Data: Technical Data Sheets (TDSs) and Safety Data Sheets (SDSs) for all products used on project.
- B. Shop Drawings: Drawings indicating scope of work and roofing details.
- C. Sample Warranty (optional; see Section 1.06).

1.03 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Enduris 3500 high solids, silicone roof coating supplied and manufactured by MPM are approved for and shall be used on this project. Upon request, MPM will provide certification that all MPM materials meet the physical properties required by the specification.
- B. Adhesion Test: Prior to estimating coating restoration project, conduct an adhesion test in accordance with MPM adhesion testing procedures to determine if a primer or other specific surface preparation is required.
- C. The silicone coating manufacturer shall have a minimum of 20 years experience in the manufacture of silicone roof coatings and be ISO 9001 certified. The coating shall have an Underwriters Laboratories (UL) Listing, Factory Mutual (FM) Class 1, 4470 Approval and a Miami-Dade NOA (Notice of Acceptance).



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Warranty Program for GE Enduris Silicone Coating

GE Enduris 3500 High Solids Silicone Roof Coating

- D. Contractor Qualifications: The contractor shall be approved by MPM and eligible to offer a GE Enduris Silicone Labor & Material Warranty.
- E. Deviations: Any deviation from this specification must be approved in writing by MPM.
- F. Field Quality Control: Upon completion of the roof coating project, an inspection by MPM's designated third-party inspection agency may be required. Consult with MPM for specific requirements.

1.04 DELIVERY, STORAGE AND PROTECTION OF MATERIALS

- A. Delivery: All products shall be delivered in the original, factory-sealed drums, pails or other containers. All product containers shall be labeled with the manufacturer's name and address, product name and description, product date/expiration date and batch/lot number.
- B. Materials damaged during shipment, delivery or storage shall not be used on this project without approval of MPM.
- C. Handling and Storage: Store Enduris 3500 silicone roof coating containers at temperatures between 15°F and 109°F (-9°C to 43°C). Other materials shall be stored in accordance with the appropriate material's TDS. Keep all products out of direct sunlight and protected from extreme temperatures.
- D. SDSs and TDSs for all materials used on this project will be kept on site and reviewed by appropriate personnel before use.

1.05 GENERAL SITE CONDITIONS

- A. All mechanical units, skylights, vents and other protrusions, and other rooftop accessories should be in place prior to surface preparation and coating application.
- B. All mechanical units should be adjusted or shut down to prevent fumes and odors from entering the facility.
- C. Mask or otherwise protect all surfaces not to be prepared and/or coated to prevent overspray damage. Use wind screens as appropriate.
- D. Review existing and imminent weather conditions (including potential for extreme temperatures, relative humidity, frost, dew, and precipitation) to assure that coating and accessory material will have sufficient curing time.
- E. Temperature at the time of application of the Enduris 3500 silicone roof coating application should be above 0°F (-18°C) to allow coating to cure properly. Contact manufacturer if applying to substrates over 120°F (49°C).
- F. Apply Enduris 3500 silicone roof coatings only to clean, dry and secure surfaces.
- G. Protect Enduris 3500 silicone roof coating from foot traffic or other potential abuse during the curing process. The coating is considered cured when it is tack free and sufficiently durable to withstand roof traffic.



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Warranty Program for GE Enduris Silicone Coating

Enduris 3500 High Solids Silicone Roof Coating

- H. All work performed under this specification must be in accordance with all appropriate local, state and federal regulations.
- I. While cured Enduris 3500 silicone roof coating is unaffected by ponding water conditions, various professional roofing associations (including NRCA) consider ponding water undesirable and recommend that roofs be designed for positive drainage. Corrective action should be considered, prior to application of Enduris 3500 silicone roof coating, to correct existing ponding conditions and/or drainage deficiencies.

1.06 WARRANTY INFORMATION

- A. A manufacturer's limited labor & material warranty is available on eligible projects. Contact MPM Technical Support for details.
- B. Limited warranties are not available for continuous immersion service; cryogenic, freezer or cold storage facilities; or over existing wet roofing materials. Other limitations may apply.
- C. Inspections: Warranted projects are subject to:
 - 1. Pre-job inspection and adhesion test.
 - 2. Final quality control inspection.
 - 3. Inspections may be performed by MPM or its designated third-party inspectors at MPM's discretion.
- D. Warranty submittals
 - 1. MPM Warranty Pre-Approval Application
 - 2. Adhesion test results

PART 2 — PRODUCTS 2.01

SILICONE COATING

- A. Enduris 3500 high solids, solvent-free, alkoxy-based, moisture-cured, silicone roof coating supplied and manufactured by Momentive Performance Materials, Inc., Waterford, NY.
- B. Physical Properties shall be tested in accordance with ASTM D6694 as indicated in the table below.

Property	ASTM	Value
Tensile Strength	D2370	200 psi min
Elongation at Break (73°F)	D2370	500% min
Volume Solids	D2697	90% min
Weight Solids	D1644	90% min



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Warranty Program for GE Enduris Silicone Coating

GE Enduris 3500 High Solids Silicone Roof Coating

2.02 EPDM WASH SOLUTION

- A. GE Enduris EPDM WASH, Momentive Performance Materials, Waterford, NY. Refer to the Enduris EPDM WASH Technical Data Sheet for physical property information.

2.03 SEAM TREATMENT MATERIALS

- A. GE Enduris Seam Sealant, Momentive Performance Materials, Waterford, NY. Refer to the Enduris Seam Sealant Technical Data Sheet for physical property information.
- B. GE UltraSpan* UST / USM pre-cured silicone transition sheets and molded corners, Momentive Performance Materials, Waterford, NY. Refer to the UltraSpan Technical Data Sheet for physical property information.
- C. Reinforcement Fabric: GE RF100 series is a 100% polyester spun-laced textile reinforcing fabric that is available in 4", 6" or 12" widths. Refer to the RF100 Technical Data Sheet for physical property information.

2.04 ACCESSORY MATERIALS

- A. Traffic Mats: Yellow Spaghetti (manufactured by Western Plastics, Inc.) pressure bonded, non-woven pads (or in rolls) made of spaghetti like strands of flexible polyvinyl chloride, nominal thickness 5/16".
- B. Yellow Walkway Coating: GE SilShield* 2400 Protection Yellow Silicone Coating

PART 3 — EXECUTION

3.01 SINGLE-PLY SURFACE PREPARATION

- A. Adhesion Test: On a representative, prepared and dried surface in the field of the single-ply membrane, or any substrate to receive remedial coating, perform an adhesion test of the Enduris 3500 silicone roof coating in accordance with MPM adhesion testing procedures. Report results to MPM Technical Support. Results will determine what, if any, additional surface preparation will be required.
- B. Remove all loose dirt, gravel, ballast, dust and surface contaminants that would adversely affect the adhesion of the Enduris 3500 silicone roof coating restoration coating by power washing, vacuuming, power sweeper, air blowing and/or other suitable means.



Warranty Program for GE Enduris Silicone Coating

GE Enduris 3500 High Solids Silicone Roof Coating

- C. Inspect drainage system to assure that drains are open and functional and meet building code requirements. Install additional drainage consistent with good roofing industry practice to eliminate potential for ponding water.
- D. Thoroughly inspect and/or test the existing roof system for the presence of moisture within the roof assembly. Remove areas of wet substrate and replace with compatible materials.
- E. Thoroughly inspect the entire single-ply roof surface, details and accessories and correct defects such as cracks, seam splits, shrinkage, chalking, brittleness and alligatoring.
 - 1. GE Enduris Seam Sealant shall be applied to all membrane cracks and seams. Application can be done by brush (50 wet mils) or trowel and may require 24 hours to cure prior to base and/or topcoat application.
 - 2. Field seams at end laps are to be cleaned and re-sealed. The areas cleaned should extend 4" on each side of the seam. The seam is to be sealed with GE Enduris Seam Sealant. For all corners and transition areas (including areas prone to movement) use GE RF100 4", 6", or 12" polyester fabric embedded in additional application of Enduris 3500 silicone roof coating. Avoid buckling or wrinkling of fabric in any area.
 - 3. All field seams and flashings must be thoroughly checked for loose areas, fishmouths or poor adhesion and are to be cut out and removed. Any flashing or field membrane that has stress cracks is to be cleaned and sealed with GE Enduris Seam Sealant or reinforced with a layer of Enduris 3500 silicone coating and RF100 Reinforcing Fabric before silicone top coating is applied.
 - 4. GE UltraSpan transition membranes may be required on certain specific conditions. Consult with MPM Technical Support for recommendations.
- F. Inspect mechanically attached single-ply membranes and replace any fasteners which are loose or have backed out. Remove all loose fasteners and replace them with a larger diameter fastener to ensure there is a tight grip to the deck. If a tight grip is not achieved, remove the fastener and plate and relocate them at least 4" from the original location. Repair with compatible membrane. Primer application or other surface preparation may be required based on the results of MPM adhesion testing procedures. Consult with MPM Technical Support for materials and procedures.
- G. Required treatment of EPDM surfaces: Clean all EPDM surfaces with GE Enduris EPDM Wash. Apply at a minimum rate of 1.0 gallons/300-500 ft² using low-pressure spray, mop or roller; and allow to dwell on membrane for 15 - 120 minutes depending on ambient temperature and humidity. Rinse washed EPDM membrane thoroughly to remove residue.



Warranty Program for GE Enduris Silicone Coating

GE Enduris 3500 High Solids Silicone Roof Coating



3.02 COATING APPLICATION

- A. The Enduris 3500 silicone roof coating shall be applied uniformly in one or more coats at a theoretical application rate of 2.5 gallons/100 ft² to achieve a WFT (wet film thickness) of 40 mils and a minimum total DFT (dry film thickness) of 36 mils. NOTE: Theoretical coating application rate is based strictly on minimum WFT requirements and must be increased for site-specific conditions such as surface texture, overspray loss, container and other residues, application technique and environmental conditions.
- B. Required final DFT is 36 mils minimum on any given area of the roof surface. Apply additional coating as needed to meet this requirement.
- C. Additional coats: When additional applications of coating are needed, allow sufficient cure time between applications to provide a stable working surface. Subsequent coating should be applied in a spray, roller or brush pattern perpendicular to the previous application.
- D. Equipment: Enduris 3500 silicone roof coating may be applied by spray equipment, roller, brush or gauge rake.
- E. Cure: Enduris 3500 silicone roof coating cures by reacting with ambient moisture. Cure time will be reduced at elevated ambient humidity and temperatures.

3.03 FINISHED COATING CHARACTERISTICS

- A. The cured Enduris 3500 silicone roof coating should be monolithic and seamless, encapsulating the entire existing surface. The coating should be free of holidays, voids, pinholes and cracks. Apply additional coating as necessary to correct defects.
- B. Minimum cured coating thickness is 36 mils DFT.

3.04 SAFETY REQUIREMENTS

- A. Refer to appropriate SDSs (Safety Data Sheets) for additional safety information.
- B. Before starting to apply coating, primers or other materials, any potential sources of air entry into the building must be sealed off.

3.05 CLEANUP

- A. Keep all work areas clean, clear and free of debris at all times.
- B. Do not allow trash, waste or debris to accumulate on the roof. Remove these items from the roof on a daily basis.
- C. Collect and properly store all tools and unused materials at the end of each workday.

Warranty Program for GE Enduris Silicone Coating

GE Enduris 3500 High Solids Silicone Roof Coating

- D. Dispose of or recycle all trash and excess material in a manner conforming to current EPA regulations and local laws.
- E. Properly clean the finished roof surface after completion and make sure the drains and gutters are not clogged.
- F. Clean and restore all damaged surfaces to their original condition.

3.06 QUALITY CONTROL

- A. Enduris 3500 silicone roof coating restoration projects are subject to pre- job progress and final inspections by MPM, its designated third-party inspectors, or others subject to warranty requirements and contract documents.

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