

GE Enduris* 3500 High Solids Silicone Roof Coating

INSTALLATION GUIDE SPECIFICATION FOR
COATING OF CONCRETE ROOF SUBSTRATES
(10 YEAR WARRANTY)

PART 1—GENERAL

1.01 SUMMARY

- A. 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 which is highly resistant to degradation from UV and natural weathering. Enduris 3500 silicone roof coating may be used to top coat concrete roof substrates 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 (TDS) and Safety Data Sheet (SDS) 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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- D. Contractor Qualifications: The contractor shall be approved by MPM and eligible to offer a 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 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 commences.
- 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 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 roof coatings only to clean, dry and secure surfaces.
- G. Protect Enduris 3500 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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- H. All work performed under this specification must be in accordance with all appropriate local, state and federal regulation.
- I. While cured Enduris 3500 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 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; and
 - 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

2.02 SEAM TREATMENT MATERIALS

- A. GE Enduris Silicone Seam Sealant, Momentive Performance Materials, Waterford, NY. Refer to the Enduris Silicone Seam Sealant TDS 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 TDS for physical property information.



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- 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 TDS for physical property information.

2.03 ACCESSORY MATERIALS

- A. Traffic Mats: Yellow Spaghetti (manufactured by Western Plastics, Inc. 800-325-3605) 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 SEC2400 Protection Yellow Silicone Coating

PART 3 — EXECUTION

3.01 CONCRETE SURFACE PREPARATION

- A. Adhesion Test: On a representative, prepared and dried surface in the field of the concrete roof substrate, perform an adhesion test of the Enduris 3500 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 concrete, laitance, chalk, grease, release agents, oil, dust and surface contaminants that would adversely affect the adhesion of the Enduris 3500 restoration coating by power washing, water blasting and/or other suitable means. Sandblasting or acid washing may be required to achieve a clean, sound surface. The concrete must be clean, dry and chalk free.
- C. The surface must be thoroughly cured, (at least 28 days for new concrete), before the application of coating or caulking materials. The surface pH must not be higher than 11 prior to applying the Enduris 3500 Silicone Coating.
- D. Any alkaline seepage (efflorescence), must be removed by acid washing followed by a clean water rinse.
- E. 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.
- F. 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.

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- G. Thoroughly inspect the entire concrete roof including, details, penetrations, flashings and accessories and correct defects such as cracks, seam splits, shrinkage, chalking, brittleness and flaking.
1. GE Enduris Seam Sealant shall be applied to all cracks, joints and seams. Application can be done by stiff brush (50 wet mils), trowel or gloved hand and may require 24 hours to cure prior to base and/or topcoat application.
 2. All flashings must be thoroughly checked for loose areas, fishmouths or poor adhesion and are to be cut out and removed. Any flashing or field surface that has stress cracked is to be cleaned and sealed with GE Enduris Silicone Seam Sealant or reinforced with a layer of Enduris 3500 Silicone Coating and GE RF100 Reinforcing Fabric before silicone top coating is applied.
 3. GE UltraSpan transition membranes may be required on certain specific conditions. Consult with MPM Technical Support for recommendations.
- H. Concrete Sealer, 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.

3.02 COATING APPLICATION

- A. The Enduris 3500 roof coating shall be applied uniformly in one or more coats at a theoretical application rate of 1.5 gallons/100 ft² to achieve a WFT (wet film thickness) of 24 mils and a minimum total DFT (dry film thickness) of 21 mils. NOTE: Theoretical coating application rate is based strictly on minimum wet film thickness 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 21 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 coating should be monolithic and seamless, encapsulating the entire existing concrete surface. The coating should be free of holidays, voids, pinholes and cracks. Apply additional coating as necessary to correct defects.

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B. Minimum cured coating thickness is 21 mils DFT.

3.04 SAFETY REQUIREMENTS

- A. Refer to appropriate SDSs 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.
- 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 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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