

PART 1 GENERAL

1.1 SUMMARY

- A. Provide labor, materials, equipment and supervision necessary to install a seamless, fully adhered fluid-applied roof coating system over properly prepared new or existing metal roof surfaces.
- B. The manufacturer's application instructions for each product used are considered part of this specification and should be followed at all times.
- C. Related Sections:
 - 1. Section 03 30 00: Cast-In-Place Concrete
 - 2. Section 05 30 00: Metal Decking
 - 3. Section 07 20 00: Thermal Protection
 - 4. Section 07 60 00: Flashing and Sheet Metal
 - 5. Section 07 72 00: Roof Accessories
 - 6. Section 07 92 00: Joint Sealants

1.2 SYSTEM DESCRIPTION

- A. Silicone HS M shall be a complete system of compatible materials to create a seamless waterproof fluid-applied roof coating system.
- B. Silicone HS M shall be designated for application on the specific type of substrate as indicated on the drawings and specifications.

1.3 SUBMITTALS

- A. Technical Data: Submit Neogard product technical literature and installation instructions.
- B. Samples: Submit samples of specified fluid-applied roof coating system. Samples shall be construed as examples of finished color and texture of the system only.
- C. Applicator Approval: Submit letter from Neogard stating applicator is approved to install the specified fluid-applied roof coating system.
- D. Warranty: Submit a copy of the Neogard warranty to meet project specifications.

1.4 QUALITY ASSURANCE

- A. Supplier Qualifications: Silicone HS M, as supplied by Neogard, is approved for use on this project.
- B. Applicator Qualifications: The Applicator shall be approved by Neogard to install the Silicone HS M fluid-applied roof coating system. Manufacturer's written verification of applicator approval is required.
- C. Regulatory Requirements:
 - 1. The fluid-applied roof coating system shall be rated Class A in accordance with the spread of flame test requirements of ASTM E108.
 - 2. Materials used in the fluid-applied roof coating system shall meet Federal, State and local VOC regulations.
- D. Adhesion Test: An adhesion test is recommended to ensure sufficient adhesion will exist between the substrate and fluid-applied roof coatings.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Containers and Packaging: Materials shall be delivered in original, tightly sealed containers, clearly labeled with the manufacturer's name, brand name, type of material and batch number(s).

- B. Storage and Handling: Store materials at 75°F (23°C). Handle products to prevent damage to container. All materials shall be stored in compliance with local fire and safety requirements. Avoid high temperatures and direct sunlight.

1.6 PROJECT CONDITIONS

- A. Prior to starting work, read and follow the Safety Data Sheet (SDS) and container labels for detailed health and safety information.
- B. Proceed with application of materials only when substrate temperature is above 40°F (4°C) and in dry conditions. Do not apply if precipitation is imminent, or to a damp or frosty surface. Temperature should more than 5°F (3°C) above dew point and rising. If ambient and/or substrate temperatures are approaching or above 110°F (43°C), limit material application to evening hours.
- C. Coordinate fluid-applied roof coating work with other trades to ensure coatings are protected from traffic and other abuse until completely cured and installation is complete.
- D. Maintain work area in a neat and orderly condition, removing empty containers, rags, and trash from the site daily.

1.7 WARRANTY

- A. Upon request, Neogard shall offer a manufacturer's standard warranty for institutional, commercial, industrial, and high-rise/multi-family residential projects only, after substantial completion of the application and receipt of a properly executed warranty request form. See Section 3.3 Application for systems which qualify for 10-, 15, and 20-year warranties.

PART 2 MATERIALS

2.1 MANUFACTURER

- A. Neogard, a part of Hempel, 2728 Empire Central, Dallas, TX 75235, 214-353-1600, www.neogard.com.

2.2 MATERIALS

- A. Fluid-Applied Roofing (Hempel product numbers in parentheses):
 1. Primer: 7797/7798 (254JB) urethane primer for previously coated or factory finished metal roofs.
 2. Liquid Flashing: 7870 (474JB) single-component high solids silicone.
 3. Reinforcing Fabric: 86220 (63BJB) reinforcing fabric (Tietex T272)
 4. Sealant: 70998 (47XJB) silicone sealant.
 5. Mastic: 70695 (47CJB) Silicone Roof Mastic.
 6. Protective Coating: 7870 (47YJB) single-component high solids silicone.
- B. Typical physical properties of cured 7870 high-solids silicone used on this project are:
 1. Tensile Strength, 247 psi, ASTM D412
 2. Elongation, 237%, ASTM D2370
 3. Reflectivity, 89 (7870 only), ASTM C1549
 4. Emissivity, 90 (7870 only), ASTM C1371
 5. SRI, 113 (7870 only)
 6. Shore A, 37, ASTM D2240
 7. Flammability, Class A, ASTM E108
 8. Weathering (QUV), No degradation at 5,000 hours, ASTM G154
 9. Permeance at 20 mils (100°F/38°C, 90% relative humidity), 10.7 perms, ASTM E96
- C. The above tested results are typical values. Individual lots may vary up to 10% from the typical value. Further technical information is available at www.neogard.com.

2.3 ACCESSORIES

- A. Miscellaneous materials such as adhesives, metal primers, metal vents and drains shall be a composite part of the roof system and shall be compatible with the specified fluid-applied roof coating system

PART 3 EXECUTION

3.1 EXAMINATION

- A. Inspect surfaces, which will receive the Silicone HS M fluid-applied roof coating system to make sure they are clean, smooth, sound, properly prepared, and free of moisture, dirt, debris, or other contaminants.
- B. Verify that all roof penetrations, mechanical equipment, cants, edge metal, and other on-roof items are in place and secure.
- C. Verify that all critical areas around the immediate vicinity of the coating application area are suitably protected.
- D. Verify that roof has sufficient slope for water to drain.
- E. Verify all roof drains are clean and in working order.
- F. Verify that all air conditioning and air intake vents are suitably protected or closed.

3.2 PREPARATION

- A. All existing HVAC and other equipment shall be protected from any damage that could be caused by the fluid-applied roof coating application.
- B. Raising, re-setting, and protection of air conditioning equipment, ventilators, and exhaust fans may be required.
- C. Protect all adjoining areas that are not to receive the fluid-applied roof coating and provide a suitable work station to mix the coating materials.
- D. Remove all abandoned, unnecessary and non-functional equipment, deteriorated and/or water saturated roofing materials, adhesives and foreign materials down to sound substrate. Replace these areas with materials and components to match existing roof system and seal water tight. The width, adhesion and/or fastening requirements of the new materials must be compatible with the existing roof and meet local codes. Seal all edges.
- E. Inspect existing metal roof surface to receive coatings. Metal panels which no longer have integrity due to excessive rust and deterioration should be replaced. Metal panels with seam gaps greater than 1/8" should be stitched as tight as possible with additional stitch screw fasteners.
- F. Tighten all loose fasteners and replace stripped fasteners with oversized version of the same fastener, i.e. aluminum, galvanized, or stainless. Maintain integrity of original fastening pattern design.
- G. Apply polyurethane sealant around fasteners and strike or tool into place to achieve a smooth transition and allow to thoroughly cure.
- H. Loose scale or rust must be removed from metal surfaces and primed with metal primer prior to roof coating application as job conditions dictate.
- I. Round projections, machine legs, sign posts, guide wire straps, inside and outside corners, etc. can be flashed with polyurethane sealant.
- J. Clean and seal all drains, gutters, parapet walls and caps to watertight condition. Repair any damaged metal. Caulk and seal to watertight condition, all screws, seams, skylights, joints, pipes, voids, protrusions and any areas where water could enter through the roof.

- K. As needed, reinforce all vertical/horizontal interfaces, including roof termination points, base of all vent pipes and other protrusions, HVAC units and other roof mounted equipment. Treatment options are as follows:
 - 1. 70695 silicone mastic, applied as needed.
 - 2. 7870 with Tietex Fabric: Apply 7870 silicone at 27 wet mils, 10" wide, over seam. Apply and center 6" wide Tietex fabric over wet 7870. Work fabric into wet 7870 using a brush or roller to eliminate air pockets, wrinkles and gaps. Apply additional 18 wet mils of 7870 over the entire repair and allow to cure.
- L. All roof surfaces, whether old or new, shall be cleaned using Neogard 8500 BioDegradable Cleaner (089JB) at the rate of 1 part concentrate to 10 parts water. Apply the diluted cleaning solution under low pressure spray at a rate of 450 square feet per gallon and allow to stand for 15 minutes. Do not allow the solution to dry. Thoroughly rinse with fresh water under high pressure to remove the cleaning solution. The use of stiff-bristle brooms or mechanical scrubbers may be required to remove heavy deposits of dirt or other contaminants from surface. Allow roof surface to thoroughly dry. Note: If algae is present on the surface, the cleaning must include bleach in the washing of the substrate. Follow local ordinances regarding runoff from this procedure.
- M. Before proceeding with coating application, ensure that substrate and repairs are clean, sound, dry (cured) and secure.

3.3 APPLICATION

- A. Factors That Affect Dry Film Thickness: Volume of solids, thinning, surface profile, application technique and equipment, overspray, squeegee, brush and roller wet out, container residue, spills and other waste are among the many factors that affect the amount of wet coating required to yield proper dry film thickness. To ensure that specified dry film thickness is achieved, use a wet mil gauge to verify actual thickness of wet coating applied, adjusting as needed for those factors which directly affect the dry film build.
- B. Primer: Apply 7797/7798 primer at a rate of 300 sf/gal and allow to cure until primer will not transfer when touched. If 7870 silicone cannot be applied over primer within 24 hours, reprime.
- C. 10-Year Warranty System (20 mils total): Thoroughly mix and apply 7870 at a rate of 60 sf/gal (1.6 gal/100 sf or 23 wet mils) to yield 20 dry mils. Allow to cure.
- D. 15-Year Warranty System (25 mils total, two application options):
 - 1. Single Coat: Thoroughly mix and apply 7870 at a rate of 55 sf/gal (1.8 gal/100 sf or 28 wet mils) to yield 25 dry mils. Allow to cure.
 - 2. Two Coats:
 - a. First Coat: Thoroughly mix and apply 7870 at a rate of 110 sf/gal (0.9 gal/100 sf or 14 wet mils) to yield 12.5 dry mils. Allow to cure.
 - b. Second Coat: Thoroughly mix and apply 7870 at a rate of 110 sf/gal (0.9 gal/100 sf or 14 wet mils) to yield 12.5 dry mils. Allow to cure.
- E. 20-Year Warranty System (30 mils total):
 - 1. First Coat: Thoroughly mix and apply 7870 at a rate of 90 sf/gal (1.1 gal/100 sf or 17 wet mils) to yield 15 dry mils. Allow to cure.
 - 2. Second Coat: Thoroughly mix and apply 7870 at a rate of 90 sf/gal (1.1 gal/100 sf or 17 wet mils) to yield 15 dry mils. Allow to cure.

3.4 FIELD QUALITY CONTROL

- A. Manufacturer's Field Services: Inspection by an independent third party or coating manufacturer's representative may be required to verify the proper installation of the fluid-applied roof coating system. Any areas that do not meet the minimum standards for application as specified herein shall be corrected at the applicator's expense. Manufacturer's inspection or verification shall not constitute acceptance of responsibility for any improper surface preparation or application of material. Note: It is the responsibility of the applicator to make sure there is sufficient coating applied to the roof.

3.5 CLEANING

- A. Surfaces not intended to receive the Silicone HS M fluid-applied coating system shall be protected during the application of the system. Should this protection not be effective, or not be provided, the respective surfaces shall be restored to their proper conditions by cleaning, repairing or replacing. All debris from completion of work shall be completely removed from the project site.

3.6 PROTECTION

- A. After completion of application, do not allow traffic on coated surfaces for a period of at least 48 hours at 75°F (23°C) and 50% relative humidity, or until completely cured.

END OF SECTION

Issued by: Hempel (USA) – Neogard Silicone HS M

This Guide Specification supersedes those previously issued.

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