High Solids Silicone

Table of Contents

Guide Specification

Silicone HS MB

Section 07 56 00 Fluid-Applied Roofing

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 modified bitumen roof substrates.

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 07 50 00: Membrane Roofing
3. Section 07 60 00: Flashing and Sheet Metal
4. Section 07 72 00: Roof Accessories
5. Section 07 92 00: Joint Sealants

1.2 SYSTEM DESCRIPTION

A. Silicone HS MB shall be a complete system of compatible materials to create a seamless waterproof fluid-applied roof coating system.

B. Silicone HS MB 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 MB, 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 MB 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.
3. 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, Toll Free (800) 321-6588, Fax (214) 357-7532, www.neogard.com.

2.2 MATERIALS

A. Fluid-Applied Roofing Materials (Hempel product numbers in parentheses):
1. Primer: Neogard 7711 (259JB) water-based acrylic bleed-block primer.
2. Liquid Flashing: 7870 (873JB) series single-component, moisture cured, high solids silicone coating.
3. Reinforcing Fabric: 86220 (63BJB) reinforcing fabric (Tietex T-272).
4. Mastic: 70695 (874JB) silicone mastic.
5. Sealant: 70998 (63XJB) silicone sealant.
6. Protective Coating: 7870 (873JB) series single-component, moisture cured, high solid 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. Fabric reinforcement and waterproofing coverings for expansion joints shall be compatible with specified fluid-applied roof coating system.

B. 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 MB 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 coatings 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.

E. Repair deteriorated flashings, seams, cracks, blisters, splits, fishmouths, holes and other surface imperfections including but not limited to all vertical/horizontal interfaces, roof termination points, base of all vent pipes and other protrusions, HVAC units, and other roof-mounted equipment. Treatment options:
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.

F. Thoroughly clean all exposed metal surfaces such as pipe sleeves, drains, boxes, ducts, etc. Remove all loose paint, rust and asphalt or loose roofing materials of any kind.

G. Seal gutters, parapet walls and caps to watertight condition using 70998 silicone sealant. Caulk and seal to watertight condition all screws, seams, skylights, joints, pipes, voids, protrusions and any areas where water could enter through the roof. Repair any damaged metal.

H. 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.

I. 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 7711 primer at 100–150 sf/gal (1.0–0.66 gal/100 sf) and allow to cure for 24 hours until primer will not transfer when touched.
1. Do not apply primer over base coat material used for detailing.
2. Subsequent coat must be applied within 30 days of applying 7711 primer. 7711 primer must be clean, dry, and sound before applying subsequent coats. If subsequent coat is applied 3 or more days after 7711 primer, power wash the 7711 primer and allow to dry before applying coating.

C. Seam Detail: All capsheet seams on the roof must be sealed. Treatment options:
1. Silicone Mastic: Apply 70695 silicone mastic to the seam at a rate sufficient to create a smooth transition, minimum 80 wet mils. Taper the edges to the existing substrate.
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 seam detail and allow to cure.

D. 10-Year Warranty System (30 mils total):
1. Single Coat: Thoroughly mix and apply 7870 at a rate of 45 sf/gal (2.2 gal/100 sf or 34 wet mils) to yield 30 dry mils. Allow to cure.

E. 15-Year Warranty System (35 mils total, two application options):
1. Single Coat: Thoroughly mix and apply 7870 at a rate of 40 sf/gal (2.5 gal/100 sf or 40 wet mils) to yield 34 dry mils. Allow to cure.
2. Two Coats:
   a. First Coat: Thoroughly mix and apply 7870 at a rate of 80 sf/gal (1.25 gal/100 sf or 20 wet mils) to yield 17.5 dry mils. Allow to cure.
   b. Second Coat: Thoroughly mix and apply 7870 at a rate of 80 sf/gal (1.25 gal/100 sf or 20 wet mils) to yield 17.5 dry mils. Allow to cure.

F. 20-Year Warranty System (40 mils total):
1. First Coat: Thoroughly mix and apply 7870 at a rate of 70 sf/gal (1.4 gal/100 sf or 23 wet mils) to yield 20 dry mils. Allow to cure.
2. Second Coat: Thoroughly mix and apply 7870 at a rate of 70 sf/gal (1.4 gal/100 sf or 23 wet mils) to yield 20 dry mils. Allow to cure.

G. Coating Thickness Requirements: Total coating system thickness shall be 40 dry mils.

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.

B. Applicator is responsible for applying sufficient coating to the roof.

3.5 CLEANING

A. Surfaces not intended to receive the Silicone HS MB 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 MB

This Guide Specification ("**Guide Spec**") relates to the supplied products/system ("**System**") and is subject to update from time-to-time. Accordingly, the buyer/applicator should refer to the Guide Spec current as of the time of delivery. In addition to the Guide Spec, the buyer/applicator may receive some or all of the specifications, statements and/or guidelines listed below or available at www.neogard.com (the "**Additional Documents**"):

No.	Document Description
1	PDS
2	Guide Specification
3	Application Manual
4	Other Technical Support Information (i.e. summary application tables, troubleshooting guides, maintenance manuals, chemical resistance charts and other technical information)

In the event of a conflict between this Guide Spec and the Additional Documents, the conflict shall be resolved in accordance with the order of priority set forth above. In addition, the buyer/applicator should refer to the relevant Safety Data Sheets current as of the time of delivery of the System and available at www.neogard.com. Buyer/applicator is responsible for determining the suitability of the intended use of the System, and Neogard disclaims all responsibility for any use, handling and storage of any components of the System that are not in accordance with the requirements set forth in the relevant PDS(s), this Guide Spec and the Additional Documents. The terms and provisions hereof apply to this Guide Spec, the Additional Documents and any other documents supplied by Neogard in respect of the System. The System is supplied and all technical assistance is given subject to the General Conditions of Sale of Hempel Products and/or Services available at www.hempel.com. NEOGARD MAKES NO OTHER WARRANTY THAT EXTENDS BEYOND THE WARRANTY REFERENCED THEREIN INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NEOGARD WILL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY OR CONDITION, OR THAT IN ANY WAY ARISE IN RELATION TO THE SYSTEM.
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Guide Specification

Silicone HS C

Section 07 56 00 Fluid-Applied Roofing

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 structural concrete 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 07 60 00: Flashing and Sheet Metal
3. Section 07 72 00: Roof Accessories
4. Section 07 92 00: Joint Sealants

1.2 SYSTEM DESCRIPTION

A. Silicone HS C shall be a complete system of compatible materials to create a seamless waterproof fluid-applied roof coating system.

B. Silicone HS C 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 C, 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 C 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.
2. Liquid Flashing: 7870 (873JB) single-component high solids silicone.
3. Reinforcing Fabric: 86220 (63BJB) reinforcing fabric (Tietex T272)
4. Sealant: 70991 (47XJB) urethane sealant.
5. Mastic: 70690 (47CJB) urethane Roofing Mastic.
6. Protective Coating: 7870 (873JB) 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. Fabric reinforcement and waterproofing coverings for expansion joints shall be compatible with specified fluid-applied roof coating system.

B. 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 C 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 coatings and provide a suitable work station to mix the coating materials.

D. Concrete surfaces to receive roof coatings must be a minimum of 3,000 psi compressive strength.

E. Concrete must have a full 28 day cure period prior to coating. Water curing of the decks is the preferred method. However, if a curing compound is to be used, it must be of the sodium silicate type. Other types of curing compounds require prior written approval by Neogard. Chlorinated rubber, wax or resin based curing compounds must not be used.

F. Insulating concrete (Zonolite, Vermiculite, Perlite, etc.) must never be coated directly with Neogard fluid-applied roof coatings.

G. If the concrete finish is rougher or smoother than a light hair broom finish, consult Neogard for additional surface preparation procedures.

H. 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.

I. Ridges and sharp projections should be ground off and pits, holes, low spots and spalled areas should be filled with Neogard 70714/70715 epoxy (45060) and sand mixture at a ratio of one part epoxy to four parts sand so they are flush with the surrounding substrate.

J. Concrete patches must have a full 28-day cure period prior to coating.

K. Cracks and Cold Joints: Visible hairline cracks (up to 1/16” in width) in concrete and cold joints shall be cleaned, primed and treated with polyurethane Base Coat material extended a minimum distance of 2” on either side of crack to yield thickness of 30 dry mils. Large cracks (over 1/16” in width) shall be routed, blown clean, and filled flush with 70991 polyurethane sealant. Sealant shall be applied to inside area of crack only, not applied to deck surface. After sealant has cured, detail sealed cracks with polyurethane Base Coat material extended a minimum distance of 2” on either side of crack to yield thickness of 30 dry mils.
   1. Sealant must be solvent wiped. Allow solvent to flash off prior to installation of Base Coat detail stripe.

L. Thoroughly clean all exposed metal surfaces such as pipe sleeves, drains, boxes, ducts, etc. Remove all loose paint, rust and asphalt or loose roofing materials of any kind.

M. Seal gutters, parapet walls and caps to watertight condition using 70991 urethane sealant. Caulk and seal to watertight condition, all screws, seams, skylights, joints, pipes, voids, protrusions and any areas where water could enter through the roof. Repair any damaged metal.

N. 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. Apply a 2" wide band of 70690 mastic to the interface at a rate sufficient to create a smooth transition. Taper the edges to the existing substrate.

O. 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.

P. 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 urethane primer at a rate of 1/3 gallon per 100 square feet (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 (30 mils total): Thoroughly mix and apply 7870 at a rate of 45 sf/gal (2.2 gal/100 sf or 34 wet mils) to yield 30 dry mils. Allow to cure.

D. 15-Year Warranty System (35 mils total, two application options):
   1. Single Coat: Thoroughly mix and apply 7870 at a rate of 40 sf/gal (2.5 gal/100 sf or 40 wet mils) to yield 34 dry mils. Allow to cure.
   2. Two Coats:
      a. First Coat: Thoroughly mix and apply 7870 at a rate of 80 sf/gal (1.25 gal/100 sf or 20 wet mils) to yield 17.5 dry mils. Allow to cure.
      b. Second Coat: Thoroughly mix and apply 7870 at a rate of 80 sf/gal (1.25 gal/100 sf or 20 wet mils) to yield 17.5 dry mils. Allow to cure.

E. 20-Year Warranty System (40 mils total):
   1. First Coat: Thoroughly mix and apply 7870 at a rate of 70 sf/gal (1.4 gal/100 sf or 23 wet mils) to yield 20 dry mils. Allow to cure.

2. Second Coat: Thoroughly mix and apply 7870 at a rate of 70 sf/gal (1.4 gal/100 sf or 23 wet mils) to yield 20 dry mils. Allow to cure.
3. Coating Thickness Requirements: Total coating system thickness shall be 40 dry mils.

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.

B. Applicator is responsible for ensuring sufficient coating is applied to the roof.

3.5 CLEANING

A. Surfaces not intended to receive the Silicone HS C 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 C

This Guide Specification ("**Guide Spec**") relates to the supplied products/system ("**System**") and is subject to update from time-to-time. Accordingly, the buyer/applicator should refer to the Guide Spec current as of the time of delivery. In addition to the Guide Spec, the buyer/applicator may receive some or all of the specifications, statements and/or guidelines listed below or available at www.neogard.com (the "**Additional Documents**"):

No.	Document Description
1	PDS
2	Guide Specification
3	Application Manual
4	Other Technical Support Information (i.e. summary application tables, troubleshooting guides, maintenance manuals, chemical resistance charts and other technical information)

In the event of a conflict between this Guide Spec and the Additional Documents, the conflict shall be resolved in accordance with the order of priority set forth above. In addition, the buyer/applicator should refer to the relevant Safety Data Sheets current as of the time of delivery of the System and available at www.neogard.com. Buyer/applicator is responsible for determining the suitability of the intended use of the System, and Neogard disclaims all responsibility for any use, handling and storage of any components of the System that are not in accordance with the requirements set forth in the relevant PDS(s), this Guide Spec and the Additional Documents. The terms and provisions hereof apply to this Guide Spec, the Additional Documents and any other documents supplied by Neogard in respect of the System. The System is supplied and all technical assistance is given subject to the General Conditions of Sale of Hempel Products and/or Services available at www.hempel.com. NEOGARD MAKES NO OTHER WARRANTY THAT EXTENDS BEYOND THE WARRANTY REFERENCED THEREIN INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NEOGARD WILL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY OR CONDITION, OR THAT IN ANY WAY ARISE IN RELATION TO THE SYSTEM.
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Guide Specification

Silicone HS M

Section 07 56 00 Fluid-Applied Roofing

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 ("**Guide Spec**") relates to the supplied products/system ("**System**") and is subject to update from time-to-time. Accordingly, the buyer/applicator should refer to the Guide Spec current as of the time of delivery. In addition to the Guide Spec, the buyer/applicator may receive some or all of the specifications, statements and/or guidelines listed below or available at www.neogard.com (the "**Additional Documents**"):

No.	Document Description
1	PDS
2	Guide Specification
3	Application Manual
4	Other Technical Support Information (i.e. summary application tables, troubleshooting guides, maintenance manuals, chemical resistance charts and other technical information)

In the event of a conflict between this Guide Spec and the Additional Documents, the conflict shall be resolved in accordance with the order of priority set forth above. In addition, the buyer/applicator should refer to the relevant Safety Data Sheets current as of the time of delivery of the System and available at www.neogard.com. Buyer/applicator is responsible for determining the suitability of the intended use of the System, and Neogard disclaims all responsibility for any use, handling and storage of any components of the System that are not in accordance with the requirements set forth in the relevant PDS(s), this Guide Spec and the Additional Documents. The terms and provisions hereof apply to this Guide Spec, the Additional Documents and any other documents supplied by Neogard in respect of the System. The System is supplied and all technical assistance is given subject to the General Conditions of Sale of Hempel Products and/or Services available at www.hempel.com. NEOGARD MAKES NO OTHER WARRANTY THAT EXTENDS BEYOND THE WARRANTY REFERENCED THEREIN INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NEOGARD WILL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY OR CONDITION, OR THAT IN ANY WAY ARISE IN RELATION TO THE SYSTEM.
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Guide Specification

Silicone HS SP

Section 07 56 00 Fluid-Applied Roofing

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 fully adhered and/or mechanically fastened single-ply 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 07 50 00: Membrane Roofing
3. Section 07 60 00: Flashing and Sheet Metal
4. Section 07 72 00: Roof Accessories
5. Section 07 92 00: Joint Sealants

1.2 SYSTEM DESCRIPTION

A. Silicone HS SP shall be a complete system of compatible materials to create a seamless waterproof fluid-applied roof coating system.

B. Silicone HS SP 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 SP, 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 SP 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 AS 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: It is recommended to 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. Do not store at high temperature or in 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 Materials (Hempel product numbers in parentheses):
1. Primer: Neogard 7710 (258JB) water-based acrylic primer.
2. Liquid Flashing: 7870 (873JB) series single-component, moisture cured, high solids silicone coating.
3. Reinforcing Fabric: 86220 (63BJB) reinforcing fabric (Tietex T-272).
4. Mastic: 70695 (874JB) silicone mastic.
5. Sealant: 70998 (63XJB) silicone sealant.
6. Protective Coating: 7870 (873JB) series single-component, moisture cured, high solid silicone.

B. Typical physical properties of cured 7870 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. Fabric reinforcement and waterproofing coverings for expansion joints shall be compatible with specified fluid-applied roof coating system.

B. 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 SP 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 coatings 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.

E. All PVC or TPO patches shall be examined to determine whether or not the patch is aged or new. All new patches must be sanded to develop a suitable profile before coating materials are applied for repair or overcoat.

F. Repair deteriorated flashings, seams, cracks, blisters, splits, fishmouths, holes and other surface imperfections including but not limited to all vertical/horizontal interfaces, roof termination points, base of all vent pipes and other protrusions, HVAC units, and other roof-mounted equipment. Treatment options:
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.

G. Thoroughly clean all exposed metal surfaces such as pipe sleeves, drains, boxes, ducts, etc. Remove all loose paint, rust and asphalt or loose roofing materials of any kind.

H. Seal 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.

I. 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. Note: 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.

J. 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 7710 primer at a rate of 300–400 sf/gal (0.33–0.25 gal/100 sf) and allow to cure until primer will not transfer when touched. Note: Do not apply acrylic primer over base coat material used for detailing. If base coat cannot be applied over primer within 24 hours, reprime.

C. Seam Detail: All seams on the roof must be sealed. Treatment options are as follows:
1. Silicone Mastic: Apply 70695 silicone mastic to the seam at a rate sufficient to create a smooth transition, minimum 80 wet mils. Taper the edges to the existing substrate.
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 seam detail and allow to cure.

D. 10-Year Warranty System (25 dry mils total): 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.

E. 15-Year Warranty System (30 dry mils total, two application options):
1. Single Coat: Thoroughly mix and apply 7870 at a rate of 45 sf/gal (2.2 gal/100 sf or 34 wet mils) to yield 30 dry mils. Allow to cure.
2. Two Coats:
   a. 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.
   b. 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.

F. 20-Year Warranty System (35 dry mils total):
1. First Coat: Thoroughly mix and apply 7870 at a rate of 80 sf/gal (1.25 gal/100 sf or 20 wet mils) to yield 17.5 dry mils. Allow to cure.
2. Second Coat: Thoroughly mix and apply 7870 at a rate of 80 sf/gal (1.25 gal/100 sf or 20 wet mils) to yield 17.5 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 SP 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 SP

This Guide Specification ("**Guide Spec**") relates to the supplied products/system ("**System**") and is subject to update from time-to-time. Accordingly, the buyer/applicator should refer to the Guide Spec current as of the time of delivery. In addition to the Guide Spec, the buyer/applicator may receive some or all of the specifications, statements and/or guidelines listed below or available at www.neogard.com (the "**Additional Documents**"):

No.	Document Description
1	PDS
2	Guide Specification
3	Application Manual
4	Other Technical Support Information (i.e. summary application tables, troubleshooting guides, maintenance manuals, chemical resistance charts and other technical information)

In the event of a conflict between this Guide Spec and the Additional Documents, the conflict shall be resolved in accordance with the order of priority set forth above. In addition, the buyer/applicator should refer to the relevant Safety Data Sheets current as of the time of delivery of the System and available at www.neogard.com. Buyer/applicator is responsible for determining the suitability of the intended use of the System, and Neogard disclaims all responsibility for any use, handling and storage of any components of the System that are not in accordance with the requirements set forth in the relevant PDS(s), this Guide Spec and the Additional Documents. The terms and provisions hereof apply to this Guide Spec, the Additional Documents and any other documents supplied by Neogard in respect of the System. The System is supplied and all technical assistance is given subject to the General Conditions of Sale of Hempel Products and/or Services available at www.hempel.com. NEOGARD MAKES NO OTHER WARRANTY THAT EXTENDS BEYOND THE WARRANTY REFERENCED THEREIN INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NEOGARD WILL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY OR CONDITION, OR THAT IN ANY WAY ARISE IN RELATION TO THE SYSTEM.
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Guide Specification

Silicone HS SPF

Section 07 56 00 Fluid-Applied Roofing

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 new sprayed-in-place polyurethane foam as outlined in this specification.

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 07 60 00: Flashing and Sheet Metal
2. Section 08 60 00: Roof Windows and Skylights
3. Section 07 57 13: Sprayed Polyurethane Foam Roofing

1.2 SYSTEM DESCRIPTION

A. Silicone HS SPF shall be a complete system of compatible materials to create a seamless waterproof fluid-applied roof coating system.

B. Silicone HS SPF 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 SPF, 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 SPF 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 UL 790.
2. Materials used in the fluid-applied roof coating system shall meet federal, state and local VOC regulations.

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 with careful handling to prevent damage to products. 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.

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. Liquid Flashing: 7870 (873JB) series single-component, moisture cured, high solid silicone.
2. Reinforcing Fabric: 86220 (63BJB) reinforcing fabric (Tietex T272).
3. Flashing Tape: 86218 (62ZJB) flashing tape.
4. Sealant: 70998 (63XJB) silicone sealant.
5. Protective Coating: 7870 (873JB) series single-component, moisture cured, high solid silicone.

B. Typical physical properties of cured 7870 cured 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. Sprayed Polyurethane Foam used on this project shall meet the following minimum physical properties:
1. Tensile Strength ASTM D1623, 60-80 psi
2. Density ASTM D1622, 2.9-3.2 pcf
3. Compressive Strength (parallel to rise), ASTM D1621, 55 +/- 5% psi at yield
4. Closed Cell Content, ASTM D1940, >90% min.
5. Humid Aging (and % linear change) at 158°F/70°C, 97% relative humidity, 28 days, ASTM D2126, -0.26%
6. K Factor (aged), ASTM C518, 0.158 BTU/hr ft2 °F/in.
7. Flame Spread (nominal 2" thickness), ASTM E84, 55 maximum

D. The above tested results are typical values. Individual lots may vary up to 10% from the typical value. Further technical information can be found at www.neogard.com.

2.3 ACCESSORIES

A. Fabric reinforcement and waterproofing coverings for expansion joints shall be compatible with specified fluid-applied roof coating system.

B. 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.

C. Granules (Optional): Granules shall be #11 screen size, dust free, ceramic-coated roofing granule.

PART 3 EXECUTION

3.1 EXAMINATION

A. Inspect surfaces, which will receive the Silicone HS SPF 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 polyurethane foam surface texture ranges from smooth orange peel to verge of popcorn and is acceptable to receive the fluid-applied roof coating system. “Popcorn” or "Tree Bark" surfaces are unacceptable and must be reworked or replaced prior to coating.

C. Verify that all roof penetrations, mechanical equipment, cants, edge metal, and other on-roof items are in place and secure.

D. Verify that all critical areas around the immediate vicinity of the coating application area are suitably protected.

E. Verify that roof has sufficient slope for water to drain.

F. Verify all roof drains are clean and in working order.

G. 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 system and provide a suitable work station to mix the coating materials.

D. All sprayed polyurethane foam surfaces shall be free of moisture, frost, dust, debris, oils, tars, grease or other materials that will impair adhesion of the fluid-applied roof coating system.

E. Consult spray polyurethane foam manufacturer for proper cure time of applied polyurethane foam prior to application of fluid-applied roof coating.

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. 10-Year Warranty System (25 dry mils total): 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.

C. 15-Year Warranty System (30 dry mils total, two application options):
   1. Single Coat: Thoroughly mix and apply 7870 at a rate of 45 sf/gal (2.2 gal/100 sf or 34 wet mils) to yield 30 dry mils. Allow to cure.
   2. Two Coats:
      a. 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.
      b. 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.

D. 20-Year Warranty System (35 dry mils total):
   1. First Coat: Thoroughly mix and apply 7870 at a rate of 80 sf/gal (1.25 gal/100 sf or 20 wet mils) to yield 17.5 dry mils. Allow to cure.
   2. Second Coat: Thoroughly mix and apply 7870 at a rate of 80 sf/gal (1.25 gal/100 sf or 20 wet mils) to yield 17.5 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.

B. Applicator is responsible for ensuring sufficient coating is applied to the roof.

3.5 CLEANING

A. Surfaces not intended to receive the Silicone HS SPF 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 SPF

This Guide Specification ("**Guide Spec**") relates to the supplied products/system ("**System**") and is subject to update from time-to-time. Accordingly, the buyer/applicator should refer to the Guide Spec current as of the time of delivery. In addition to the Guide Spec, the buyer/applicator may receive some or all of the specifications, statements and/or guidelines listed below or available at www.neogard.com (the "**Additional Documents**"):

No.	Document Description
1	PDS
2	Guide Specification
3	Application Manual
4	Other Technical Support Information (i.e. summary application tables, troubleshooting guides, maintenance manuals, chemical resistance charts and other technical information)

In the event of a conflict between this Guide Spec and the Additional Documents, the conflict shall be resolved in accordance with the order of priority set forth above. In addition, the buyer/applicator should refer to the relevant Safety Data Sheets current as of the time of delivery of the System and available at www.neogard.com. Buyer/applicator is responsible for determining the suitability of the intended use of the System, and Neogard disclaims all responsibility for any use, handling and storage of any components of the System that are not in accordance with the requirements set forth in the relevant PDS(s), this Guide Spec and the Additional Documents. The terms and provisions hereof apply to this Guide Spec, the Additional Documents and any other documents supplied by Neogard in respect of the System. The System is supplied and all technical assistance is given subject to the General Conditions of Sale of Hempel Products and/or Services available at www.hempel.com. NEOGARD MAKES NO OTHER WARRANTY THAT EXTENDS BEYOND THE WARRANTY REFERENCED THEREIN INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NEOGARD WILL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY OR CONDITION, OR THAT IN ANY WAY ARISE IN RELATION TO THE SYSTEM.
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