HUNTSMAN
BUILDING SOLUTIONS

# THERMO-SIL PRO 9600
## GUIDE SPECIFICATION

Thermo-Sil Pro 9600 High Solids Silicone Restoration Coating System
For Modified Bitumen or Smooth Built-Up Roof Systems

Table of Contents

## Section 1: General

### 1.01 GENERAL SYSTEM REQUIREMENTS

A. The Huntsman Building Solutions Thermo-Sil Pro 9600 Silicone Restoration Coating System is recommended for Modified Bitumen or Smooth Built-Up roof systems. Consult with Huntsman Building Solutions Technical Department or an authorized Huntsman Building Solutions sales representative for;

1.) Maintenance of an existing or previously restored project; and

2.) Recommendations for restoring non-reinforced membrane systems.

B. Important: Due to the level of solvent in the Thermo-Sil 2200 Regular (R) silicone formulation it isnot recommended to be used over Asphalt or Single-Ply membranes due to the interaction between the solvent and these types of products / systems. Please notice the following specification only includes our Thermo-Sil Pro 9600 High Solids (HS) product.

### 1.02 GENERAL SYSTEM DESCRIPTION

A. This specification outlines Huntsman Building Solutions recommendations for applying the Thermo-Sil Pro 9600 Silicone High Solids (HS) Restoration Coating System direct to Modified Bitumen or Smooth Built-Up roof systems. Please visit our website, www.huntsmanbuildingsolutions.com, to determine if an updated version of this specification is available.
The restoration process will recondition, preserve, and extend the useful life of the roof by effectively protecting the roof from further degradation. Procedures include preparation, priming, and reinforcingall seams and flashings integrally related to the roof. In addition to life-cycle cost benefits, significant energy savings can be realized.

B. This document provides only general guidelines for application of Huntsman Building Solutions branded and ancillary materials. This general installation guide specification is not a project-specific specification and shouldnot be used as such. Owners, architects, engineers, specifiers, consultants, contractors, and others may use and modify the information contained herein where necessary in preparing specifications fora particular roofing project. It is the responsibility of the owner, project manager, and contractor to ensure that this general installation guide specification is consistent with the contractual and construction requirements relating to the project.

### 1.03 QUALITY ASSURANCE

A. General:

1. Huntsman Building Solutions Industries, Inc. shall manufacture, supply, and/or approve all materials used to complete the Thermo-Sil Pro 9600 HS Silicone Restoration Coating System for Modified Bitumen or Smooth Built-Up roof systems.

2. An authorized Huntsman Building Solutions representative shall approve, in writing, any material substitutions, deviations from, and/or addendums to this specification.

B. Contractor:

1. All work shall be performed, or directly supervised, by a Huntsman Building Solutions "Approved Applicator [1] ".
2. Contractor shall furnish verification of local, state, professional or other valid licenses necessary tooperate and permits necessary to perform work.
3. Contractor shall furnish proof of insurance covering liability, property damage, workers compensation, auto insurance, and other coverage requested by the Owner or Project Manager.
4. Contractor shall observe accepted NRCA roofing practices and governing building codes when performing work excluded from this general installation guide specification. (I.e. Replacement of roof accessories such as drains, gutters, vents, other penetrations, and other structural repair).
5. Contractor to insure all supervising field personnel onsite have a 30 hour OSHA card and all field personnel on site have a 10 hour OSHA card at a minimum.

[1] "Approved Applicator" status is required for warranty eligibility

C. Products and Services:

1. Huntsman Building Solutions Thermo-Sil Pro 9600 , specified herein is;

   a. Certified by independent third-party tests to meet or exceed the physical properties set forthin ASTM D6694, “Standard Specification for Liquid Applied Silicone Coating Used in Roofing”;

   b. Approved by Miami-Dade Product Control for acceptance under the Florida Building Code, HighVelocity Wind Zone;

   c. Listed on the Cool Roof Rating Council’s (CRRC) Rated Products Directory;

   d. Certified by independent third-party tests for compliance with the State of California, CaliforniaEnergy Commission 2005 Building Energy Efficiency Standards for Residential and Non-Residential Buildings (Effective Date October 1, 2005), Section 118: Section (i) Mandatory Requirements for Cool Roofs, Paragraph 1, and Table 118-C Minimum Performance Requirements for Liquid Applied Roof Coatings. (Title 24)

2. Technical advice on application and suitability of Huntsman Building Solutions products is available from local authorized Huntsman Building Solutions sales representatives or by contacting:

   a. Huntsman Building Solutions
   3315 E Division St
   Arlington, Texas 76011

   b. Email: info@huntsmanbuilds.com

   c. Phone: (817) 640-4900

1.04 SUBMITTALS

A. **Roof Survey**: Contractor shall submit a roof survey identifying the total area of the roof to receive the Huntsman Building Solutions Thermo-Sil Pro 9600 Restoration Coating System along with pictures depicting the general condition of the roof, seams, penetrations, mechanical equipment, and other areas specified for detail.

B. **Manufacturer Approval:** Contractor shall submit current written verification of “applicator approval” from Huntsman Building Solutions.

C. **Licenses & Permits:** Contractor shall submit verification of licenses and permits.

D. **Insurance:** Contractor shall submit certificates of insurance.

E. **Product Literature:** Contractor shall submit descriptive literature, Technical Data Sheets, and Material Safety Data Sheets for all materials specified for use on the project.

F. Warranty: Contractor shall submit a copy of warranties, if any, offered upon successful completion of the project. (See Section 4.0 - Warranty).

1.05 **PRODUCT DELIVERY, STORAGE, AND HANDLING**

A. **Delivery:** Contractor shall deliver all Huntsman Building Solutions branded system components to the job site in their original, unopened packaging clearly marked with logo, full product name, and lot or batch numbers. Contractor shall deliver ancillary project related materials to the job site in new condition, and where applicable, properly labeled.

B. **Storage:** Contractor shall protect all materials from moisture, direct sunlight, excessive heat, or freezing. Furthermore, contractor shall store materials in accordance with Manufacturer’s printed recommendations as listed on each product’s Technical Data Sheet and/or product label. Do notexpose or store silicone coating products in areas where the temperature may reach 35° F or below.

C. **Handling:** Contractor shall handle and install materials per Manufacturer’s printed instructions and standard industry practices for safeguarding against damage and contamination.

D. **Damaged Materials:** Contractor shall not use materials damaged or contaminated in shipping, handling, or storage and

must immediately remove them from the job site upon discovery.

E. **Documentation:** Contractor shall maintain on premises the Manufacturer's Material Safety Data Sheet (MSDS) and Technical Data Sheet (TDS) for each product delivered to the job site. Workers areto review all such documents before work commences.

F. **Disposal:** Contractor shall store and dispose of solvent based materials and materials used with solvent based materials in accordance with requirements of local authorities having jurisdiction.

1.06 FIELD QUALITY CONTROL

A. **Installation / Environmental Conditions:** Contractor shall not install any system component whenenvironmental conditions on the job site exceed those published on the Manufacturer's Technical Data Sheet and/or product label. When requested by Huntsman Building Solutions, Project Manager, or Contractor, at designated time intervals, the applicator shall record surface temperature, ambient temperature, relative humidity, and wind velocity on a Daily Quality Control Report Form.

B. **Roof Evaluation** – Contractor shall perform an infrared survey of the roof to identify and mark wet areas.

C. **Repair** – Remove and replace all identified wet insulation with like materials.

D. Do not install silicone coatings under the following conditions:

1. When ambient temperature is below 40°F.
2. When wind velocity is above 20 mph,unless wind screens are utilized and objects in thesurrounding area are properly protected.
3. When raining or moisture is present on the roof deck/substrate.
4. At temperatures less than 5°F above the dew point.

E. **Verification of Protective Coating Thickness:** When requested by Huntsman Building Solutions or the Project Manager, the Contractor shall measure and record the wet film thickness of coating applications on a Daily Quality Control Form along with the quantity used, batch numbers, and total square feet covered.

F. **Protection of Unrelated Work:** Contractor shall take all measures necessary to protect unrelated work surfaces and personal property from coating overspray, spills, and other damage.

## Section 2: Products

2.01 SYSTEM DESCRIPTION

A. Huntsman Building Solutions Thermo-Sil Pro 9600 Restoration Coating System is a fluid applied, Silicone elastomeric roof coating membrane with reinforced seams and flashing details. The fully adhered, seamless system exhibits outstanding adhesion, strength, flexibility, and water resistance.

2.02 MATERIALS

A. **Silicone Sealant:** Dow Corning 795 Silicone Building Sealant or Momentive SilPruf SCS2000 SiliconeSealant or Approved alternates.

B. **Reinforcement Fabric:** TIETEX® T272 100% Polyester Reinforcing Fabric or equal.

C. **Self-Adhesive Seam Tape:** Hardcast™ CRT-1602 or Eternabond™ WebSeal Coating-Ready SeamSealing Tape or other Huntsman Building Solutions approved and supplied fabric backed butyl tape

D. **Primer –** Huntsman Building Solutions **Thermoprime** Acrylic Elastomeric AllPurpose primer.

E. **Cleaner – Simple Green®** or other industrial strength detergent.

F. **Fasteners** – Mechanical Fasteners and plates that meet FM 4450.

G. **Protective Silicone Roof Coating:** Huntsman Building Solutions Thermo-Sil Pro 9600.

## Section 3: Execution

### 3.01 INSPECTION & REPAIR

A. General

The Modified Bitumen or Smooth Built-Up roof systems assembly components, (i.e. insulation, seams, drains, penetrations, terminations, and other flashings), must be structurally sound, stable, well secured, and watertight. Repair or replace roof components that are deteriorated, damaged, or not functioning properly. If Contractor cannot assure a sound, stable, well-secured surface, the roof is notacceptable to receive the Huntsman Building Solutions Thermo-Sil Pro 9600 Restoration Coating System.

B. Drains

The roof shall allow positive drainage of all water. Roof surfaces that pond more than 36 square feetof water, greater than 1/4″ deep, in any area 48 hours after a rain are unacceptable. Small birdbaths cannot account for more than 5% of the entire roof surface.

1. Contractor shall install additional drains or make other corrective measures to eliminate pondingwater.

C. Fasteners

1. If insulation was attached with Mechanical Fasteners inspect for tenting or failure due to rust orage.

2. Remove and refasten any failed screws and plates.

D. Seams

1. Inspect all seams to ensure they are not delaminated and subject to water intrusion.

2. If delaminated, the portion of the seam that has lifted is to be trimmed back to the point at whichthe seam is still intact, then reinforce as described in Section 3.03.

E. Flashings and Transitions

1. Inspect all flashing details, (penetrations, roof mounted equipment, curbs, walls, parapets, drains, roof edge, etc.), to ensure they are well secured and functioning properly.

2. Correct as necessary to ensure a watertight seal prior to beginning Surface Preparation procedures.

### 3.02 SURFACE PREPARATION

A. All surfaces must be clean, dry, and sound; free of loose and peeling coatings, grease, oil, dirt,mildew, rust, and other detrimental foreign matter that will adversely affect adhesion and product performance of system components being applied. Manually or mechanically remove excessive amounts of deteriorated patching, flashing, or caulking materials before cleaning commences. Observeresponsible trade practices during performance of all work.

B. Cleaning – Thoroughly power wash the roof surface and all other areas to receive new coating with aminimum of 2000 psi water pressure. Any areas of grease or oil should be cleaned using an industrialstrength detergent such as Simple Green®.

C. Prevent mechanical units - from distributing fumes or vapors from the coating application into thebuilding.

D. NOTE. Adhesion tests must be conducted prior to installation of the coating. If adhesion is found to be insufficient for the roofing system for the area in which it is located, the roofing system must be refastened to the roof deck. Engineering calculation for the proper fastening pattern to meet wind load requirements may be required. This engineering is at the expense of the contractor and may beconducted by a credentialed and approved engineer for the area in which the roof is located.

### **3.03** SEAM AND FLASHING FORTIFICATION

Fully intact and structurally sound seams do not require fortification. Reinforce seams and flashingsthat reveal any degree

of deterioration with one of the following methods:
Note: The maximum application rate on vertical surfaces of Huntsman Building Solutions Thermo-Sil Pro 9600 is equal to20 Wet / 18 dry mils per pass.

A. Fabric

1. Trim the portion of the seam that has delaminated back to the point at which it is still intact.
2. Apply a 16 wet mil base coat of Huntsman Building Solutions Thermo-Sill Pro 9600 over the detail area.
3. Immediately embed 4" TIETEX T272 fabric into the coating centered over the interface.
4. Without stretching the fabric, smooth with a brush or roller to remove any wrinkles, air pockets, orfish-mouths.
5. Apply additional coating as necessary during embedment to conceal the fabric. Allow to drybefore proceeding.
6. After application of fabric, apply 16 wet mils of Huntsman Building Solutions Thermo-Sil Pro 9600 over all taped interfaces. The coating must completely encapsulate and extend several inches to either side of the fabric. Allow to dry before proceeding.

B. Fabric Backed Butyl Tape

1. Trim the portion of the seam that has delaminated back to the point at which it is still intact.
2. Apply 4" fabric backed butyl seam tape over the detail area.
3. Center tape over the interface.
4. Hold tape roll slightly above the surface and peel back several inches of release liner. Adhere tapeinto place keeping it centered on the seam. Rub or roll tape down firmly and evenly to remove any wrinkles, air pockets, or fishmouths. A wallpaper seam roller is helpful to secure the tape to the substrate. Peel back several more inches of release liner and continue taping as described.Do not stretch the tape during installation.
5. Do not overlap intersecting lengths of tape. Cut and adhere tape so it forms a tight seam at all intersections.
6. After application of seam tape, apply an additional 16 wet mils of Huntsman Building Solutions Thermo-Sil Pro 9600 overall taped interfaces. The coating must completely encapsulate and extend several inches to either side of the seam tape. Allow to dry before proceeding.

## 3.04 PROTECTIVE COATING APPLICATION

All previously applied materials must be thoroughly dry before proceeding. Sweep, vacuum, or blow off any dirt, dust, or other contaminants that may have accumulated on substrates to be coated. Protect unrelated work areas from coating overspray and spills. Close or protect air conditioning and air intake vents.

A. Base Coat

When installing a two coat (Base coat and Top coat) system, the base coat and top coat must be applied in a cross hatch fashion. The base coat should be applied in the opposite direction of the desired direction of the topcoat to help ensure complete and consistent coating thicknesses.

1. Apply the Huntsman Building Solutions Thermo-Sil Pro 9600 to the entire roof substrate at a rate of 1-gallon per 100 square feet dependent upon warranty length. Full thickness of 18 dry mils may be applied for 5- year material warranty applications.
    a. Apply using a medium nap roller or airless spray equipment using a cross hatch / multi-pass technique to ensure even and complete application.
    b. Extend Huntsman Building Solutions Thermo-Sil Pro 9600 up vent pipes, parapets, curbs and other protrusions a minimum of 3" above the existing flashing termination when present or a minimum of 3"above the substrate if existing flashings have been removed, creating a self-terminating flashing. Apply coating in a straight line to achieve a functional and aesthetically pleasing appearance.
    c. Inspect the roof surface after the base coat has cured for splits, tears, or other damage in the membrane that may have been missed in the surface preparation process. These will be easier to detect on the coated surface. Repair any deficiencies as described before proceeding.

d. Protect coating from traffic and other abuse until fully cured.

B. Finish Coat

1. Apply a Huntsman Building Solutions Thermo-Sil Pro 9600 finish coat to the entire roof substrate at a rate of no more than 2.0 gallons per 100 square feet.

a. Apply using a medium nap roller or airless spray equipment using a cross hatch / multi-pass technique to ensure even and complete coverage.

b. Extend Huntsman Building Solutions Thermo-Sil Pro 9600 up vent pipes, parapets, curbs and other protrusions a minimum of 1" above the flashing base coat. Apply coating in a straight line to achieve a functional and aesthetically pleasing appearance.

c. Protect coating from traffic and other abuse until fully cured.

C. Inspection

1. Upon completion, the Contractor shall inspect their work for compliance with this specification.

2. When the Huntsman Building Solutions Thermo-Sil Pro 9600 Restoration Coating System for Modified Bitumen or Smooth Built-Up roof systems has been completed as specified above;

a. The system should be fully adhered with no pinholes or blisters in the coatings, sealants, reinforcing fabric, or seam tape.

b. The Thermo-Sil Pro 9600 dry film thickness (DFT) over reinforced seams and flashing details should be equal to or greater than 47 dry mils (This does not include measurement ofsealants, reinforcing fabric, or seam tape.); and

c. The Thermo-Sil Pro 9600 Dry film thickness (DFT) over the general field of the roof should be equal to or greater than 18 dry mils.

3. Contractor shall correct all deficiencies, if any, and provide written verification that the project iscomplete, sound, and warrantable.

3.05 CLEANUP

A. Contractor shall maintain a neat, clean, and safe work area at all times during system installation and remove trash daily.

B. Upon completion of the project, the installer shall clean all areas of operation, (work, storage, other), of all equipment, containers, packaging, drips, spills, and other construction related debris. The jobsite should be left in a clean and neat order.

## Section 4: Warranty

4.01 LIMITED PRODUCT WARRANTY

A. Huntsman Building Solutions is pleased to offer ten (10), fifteen (15) and twenty (20) year Limited Product warranties over foam insulation systems. These warranties are intended to protect the building owner from leaks due to product deterioration as a result of ordinary weather conditions. There is no fee for these warran- ties and the only requirement is the submittal of a Huntsman Building Solutions warranty request form. Third party inspections are not required. Specific conditions and limitations are identified in the warranty documents. Dry Film Thickness (DFT) and Huntsman Building Solutions product minimum requirements are as follows:

Minimum Coverage and Material Requirements

| Ten Year Limited Product | | Fifteen Year Limited Product | | Twenty Year Limited Product | |
|---|---|---|---|---|---|
| HS Silicone | 24 DFT/1.5 gal | HS Silicone | 26 DFT/2.0 gal | HS Silicone | 32 DFT/2.5 gal |

## 4.02 LIMITED SYSTEM WARRANTY

Huntsman Building Solutions is also pleased to offer a ten (10), fifteen (15) and Twenty (20) year Limited System warranties for non-residential building projects. These warranties are intended to protect the building owner from leaks due to product deterioration as a result of ordinary weather conditions. There is a fee for these warranties and an inspection is required. Additionally, to be eligible for a system warranty, a Pre-Job Warranty Request Form must be filled out, submitted and approved by Huntsman Building Solutions prior to the start of the project. Minimum square footage eligible for a System Warranty is 15,000 square feet. Dry film thickness (DFT) and Huntsman Building Solutions product minimum requirements are as follows:

Minimum Coverage and Material Requirements

| Ten Year Limited System | | Fifteen Year Limited System | | Twenty Year Limited System | |
|---|---|---|---|---|---|
| HS Silicone | 25 Mils/1.5 gal | HS Silicone | 28 Mils/ 2.0 gal | HS Silicone | 32 Mils/2.5 gal |

## 4.03 WARRANTY PROGRAM FOR SILICONE RESTORATION COATING SYSTEMS

Huntsman Building Solutions offers a selection of ten (10) year, fifteen (15) year and twenty (20) year Rest- oration Coating Limited Product and Limited System warranties for building owners. The following chart will assist you in choosing the appropriate warranty for your project.

Minimum Dry Film Thickness (mil) and HBS Product Quantity (gallon) Requirements. *

| Duration | 10-YEAR Limited | | 15-YEAR Limited | | 20-YEAR Limited | |
|---|---|---|---|---|---|---|
| | PRODUCT/SYSTEM | | PRODUCT/SYSTEM | | PRODUCT/SYSTEM | |
| Modified Bitumen HS ONLY | 22 | HS 1.5 | 25 | HS 2.0 | 30 | 2.5 |

End of Section




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