



# **THERMOLASTIC® SOLAR SHIELD® METAL ROOF RESTORATION SYSTEM GUIDE SPECIFICATION**

## **PART 1 GENERAL**

### **1.1 SUMMARY**

- A. Provide labor, materials, equipment and supervision necessary to install a seamless, fully adhered, fluid-applied roofing system over new or existing metal roofing 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. Cast-in-Place Concrete: Section 03 30 \_\_\_.
  - 2. Metal Decking: Section 05 30 \_\_\_.
  - 3. Thermal Protection: Section 07 20 \_\_\_.
  - 4. Flashing & Sheet Metal: Section 07 60 \_\_\_.
  - 5. Roof Accessories: Section 07 72 \_\_\_.
  - 6. Joint Sealants: Section 07 92 \_\_\_.

### **1.2 SYSTEM DESCRIPTION**

- A. **THERMOLASTIC® SOLAR SHIELD® METAL ROOF RESTORATION** shall be a complete system of compatible materials to create a seamless waterproof roofing membrane.
- B. **THERMOLASTIC® SOLAR SHIELD® METAL ROOF RESTORATION** shall be designated for application on the specific type of deck indicated on the drawings.

### **1.3 SUBMITTALS**

- A. Product Data: Submit THERMO MATERIALS® product literature and installation instructions.
- B. Project Reference List: Submit list of projects as required by this specification.
- C. Samples: Submit samples of specified fluid-applied roof system. Samples shall be construed as examples of finished color and texture only.
- D. Applicator Approval: Submit letter from manufacturer stating applicator is approved to install the **THERMOLASTIC® SOLAR SHIELD® METAL ROOF RESTORATION** system.
- E. Warranty: Submit copy of manufacturer's standard warranty.

### **1.4 QUALITY ASSURANCE**

- A. Supplier Qualifications: **THERMOLASTIC® SOLAR SHIELD® METAL ROOF RESTORATION**, as supplied by THERMO MATERIALS® is approved for use on this project.
- B. Applicator Qualifications: Applicators shall be approved to install specified system.
- C. Requirements of Regulatory Agencies:
  - 1. The fluid-applied roof membrane system shall be rated Class "A" (Spread of Flame) per ASTM E108.
  - 2. Materials used in the fluid-applied roof membrane system shall meet Federal, State and local VOC regulations.

D. Field Quality Control: Upon completion of the **THERMOLASTIC® SOLAR SHIELD® METAL ROOF RESTORATION** installation, an inspection by THERMO MATERIALS® or its designated third party inspection company may be required. Consult THERMO MATERIALS® for details.

**1.5 DELIVERY, STORAGE AND HANDLING**

- A. Delivery: Materials shall be delivered in original sealed containers, clearly marked with supplier's name, brand name and type of material.
- B. Storage and Handling: Recommended material storage temperature is 75°F (23.8°C). Handle products to avoid damage to containers. Do not store for long periods in direct sunlight.

**1.6 JOB CONDITIONS**

- A. Environmental Conditions:
  1. Do not proceed with application of fluid-applied materials when surface temperature is less than 40°F (4.4°C) or if precipitation is imminent.
  2. Do not apply material unless surface to receive fluid-applied membrane is clean and dry.
  3. The existing metal roofing system shall be properly fastened to the surface on which it is applied.
  4. Applicator shall examine existing conditions affecting this work and shall report all unsatisfactory conditions to the proper authority. Work will not proceed until these conditions have been corrected.

**1.7 WARRANTY**

- A. Upon request, THERMO MATERIALS® shall offer the manufacturer's standard warranty upon receipt of a properly executed warranty request form.

**PART 2 PRODUCTS**

**2.1 MANUFACTURER**

- A. THERMO MATERIALS®, 301 Walnut Springs Rd., Lindale, TX 75771, Toll Free (800) 882.7007, Fax (903) 881-8787, [www.thermomaterials.com](http://www.thermomaterials.com).

**2.2 MATERIALS**

Fluid-Applied Roofing Materials:

1. Thermoclean® surface cleaner, and plenty of clean water.
2. Primer (Light surface rust treatment): Thermo SEBS Rust Inhibitor, Thermo SEBS acrylic clear.
3. Primer (Moderate surface rust treatment): Thermo Rust Converter.
4. Elastomeric Base/Intermediate/Top Membrane: Thermolastic® Solar Shield®. Standard colors are gray and white.
5. Flashing/Reinforcement Fabric: Thermopolyester SB-075 Polyester or Self-adhering Thermotape.
6. Sealant: Thermolastic® acrylic sealant.
7. Flashing Mastic: Thermolastic® Fibrated Acrylic Mastic. (Horizontal Seams, Drains, Penetrations, Curbs, Parapet Walls, Fasteners, Scuppers).
8. Pitch Pan Sealant: Thermolene® SEBS Pitch Pan Sealant (Restoring Old Pitch Pans).
9. Gas Line Product: Thermolene® SEBS Safety Yellow Membrane (Restore Old Exterior Gas Lines).

- B. Physical properties of cured fluid-applied roof membrane used on this project are:

<b>PERFORMANCE REQUIREMENTS OF CURED FILM</b>		
<b>PHYSICAL PROPERTIES</b>	<b>TEST METHOD</b>	<b>RESULTS</b>
Tensile Strength	ASTM D412	330 psi
Elongation	ASTM D412	330%
Permanent Set	ASTM D412	<10%

Tear Resistance	ASTM D1004	100 lb/in
Water Resistance	ASTM D471	<20% @ 7 days
MVT @ 30 mils	ASTM E96	2.2 English
Shore A	ASTM D2240	65 - 75
Adhesion	ASTM D903	5+ pli
Weathering Resistance	ASTM D822	N/A
Thermal Shock	Alternate Heat/Cold	No Loss of Adhesion

### **2.3 ACCESSORIES**

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

### **PART 3 EXECUTION**

#### **3.1 EXAMINATION**

- A. Inspect existing metal roof surface to receive the fluid-applied membrane. **Metal panels with no integrity due to excessive rust and deterioration, shall be replaced.** All other areas of rust must be prepared and primed as required. Metal panels with seam gaps of 1/8" or more should be stitched as tight as possible with additional stitch screw fasteners.
- B. Light gauge metal panels that flex open at the horizontal lap seam when walked on, will require additional fastening and/or flashing material in the pan of the panel to reduce deflection.
- C. Examine existing system for loose fasteners, gapped seams, surface rust, pitting, and scaling. All other areas of rust must be prepared and primed as required. Pay particular attention to the horizontal and vertical seams. Ensure the horizontal seams are sound and tight before detailing.
- D. Verify that there are no areas of ponding water concerns on any part of the roof that will not dry up within 48 hours.

#### **3.2 PREPARATION**

- A. Protection:
  1. Keep products away from heat, sparks and flames. Do not allow the use of spark producing equipment during application until vapors are gone. Post "No Smoking" signs.
  2. The overspray and/or solvents from spraying fluid-applied roofing materials can carry considerable distances and care should be taken to do the following:
    - a. Post warning signs a minimum of 100 feet from the work area.
    - b. Close air intakes into building and/or air conditioner intakes.
    - c. Set up windbreaks when needed.
    - d. Minimize or exclude all personnel not directly involved with the fluid-applied application.
    - e. Have CO<sub>2</sub> or other dry chemical fire extinguishers available at the jobsite.
    - f. Provide adequate ventilation.
  3. Protect plants, vegetation and animals which might be affected by the fluid-applied membrane. Use drop cloths or masking as required.
- B. Surface Preparation:
  1. This section of the specification does not extensively outline procedures for preparation and finishing of drains, vents, ducts, flashings, parapet walls, sheet metal work, etc. The applicator should outline this work before work commences, and shall be performed observing good trade practices.
  2. Tighten all loose fasteners and replace stripped fasteners with oversized version of the same fastener, i.e. aluminum, galvanized, or stainless must remain as designed by the manufacturer.

3. Metal surfaces having loose scale or rust, must be cleaned and primed with metal primer prior to elastomeric fluid-applied system application as job conditions dictate. Consult THERMO MATERIALS® for recommendations.
4. Remove dirt and foreign material detrimental to adhesion or application of fluid-applied system. Pressure wash with a minimum 3,000 psi Power Washer, water, and Thermoclean® surface cleaner. **If algae is growing on the surface, cleaning must include bleach in the washing of the substrate.** It is very important to remove all water and bleach residue used to clean roof. Rinse well and allow too dry.
5. Detail horizontal metal seams with flashing/reinforcement fabric (seam and flashing failures shall be 3- course detailed with \*Thermopolyester SB-075 Polyester or Self-adhering ThermoTape, and Thermolastic® Fibrated Acrylic Mastic\* (\*20 linear foot average per gallon of completed 3-course detail @ 6" wide\*). \*Fluid-applied repair shall extend a minimum of 3 inches beyond the edges of the repair\*.
6. For vertical metal seams, use Thermolastic® acrylic sealant, or Thermolastic® Fibrated Acrylic Mastic when there is a joint that will be efficiently filled. Apply Thermolastic® acrylic sealant, or Thermolastic® Fibrated Acrylic Mastic into vertical joints and smooth out lumps or imperfections in the application while still wet and allow too thoroughly cure.
7. Apply Thermolastic® acrylic sealant, or Thermolastic® Fibrated Acrylic Mastic around fasteners and strike or tool into place to achieve a smooth transition and allow too thoroughly cure.
8. Round projections, machine legs, sign posts, guide wire straps, inside and outside corners, etc. can be flashed using Thermolastic® acrylic sealant, or Thermolastic® Fibrated Acrylic Mastic.
9. Clean and seal watertight all drains, gutters, parapet walls and caps with Thermolastic® acrylic sealant. Repair any damaged metal. Seal watertight all screws, seams, skylights, joints, pipes, voids, protrusions and any areas where water could enter through the roof with Thermolastic® acrylic sealant, or Thermolastic® Fibrated Acrylic Mastic.
10. Allow roof and other prepared surfaces to dry completely before proceeding with elastomeric fluid-applied system application.

### **3.3 APPLICATION**

#### A. Elastomeric Fluid-Applied Application:

##### **10 Year Warranty Requirements**

1. Cleaner: Thermoclean® surface cleaner, and plenty of clean water.
2. Primers: For previously coated or factory finished-metal roofs, apply Thermo SEBS Acrylic primer at a rate of 300 square feet per gallon. For zinc, zinc-aluminum, and copper metal roofs apply Thermo SEBS Acrylic primer at a rate of 300 square feet per gallon. For areas with light rust apply Thermo SEBS rust inhibitor at a rate of 300 square feet per gallon. For areas with moderate rust apply Thermo rust convertor at a rate of 300 square feet per gallon.
3. Application (Base membrane): Thermolastic® Solar Shield® fluid-applied base membrane at a minimum rate of 1.5 gallons per 100 square feet to prepared roof surfaces to yield an average thickness of 24 wet mils.
4. Application (Top membrane): Thermolastic® Solar Shield® fluid-applied top membrane at a minimum rate of 1.5 gallons per 100 square feet to prepared roof surfaces to yield an average thickness of 24 wet mils.

\*Total system membrane thickness averages 48 Wet mils or 34 DFT\*.

\*Note: Thickness values of cured film are averages and can vary due to finish of surface. High sloped roofs may require additional fluid-applied membrane to achieve specified dry film thickness.

##### **15 Year Warranty Requirements**

Requires Pre-Approval. Please contact Thermo for details.

### **3.4 CLEANING**

- A. Remove debris, resulting from completion of fluid-applied roofing operation, from the project site.

### **3.5 PROTECTION**

- A. After completion of application, do not allow traffic on membrane surfaces for a period of at least 48 hours at 75°F and 50% R.H., or until completely cured.

#### **END OF SECTION**

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