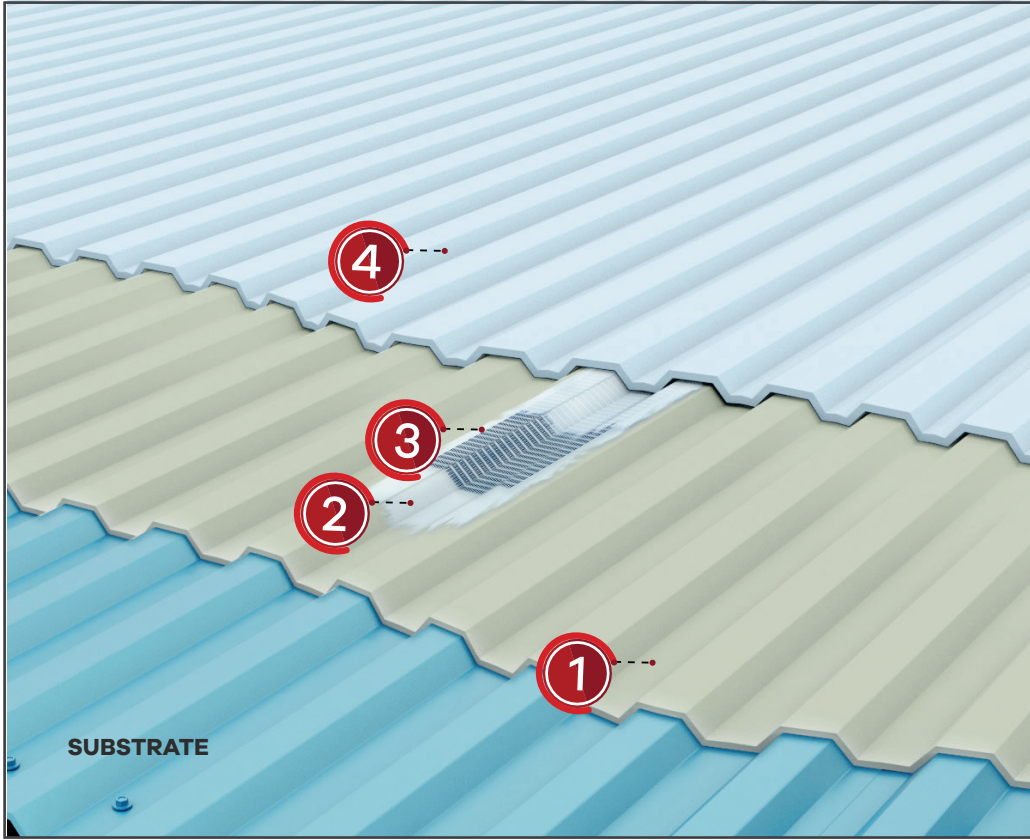


APPLICATION GUIDE

THERMOTEK® 100% SILICONE COATING SYSTEM OVER METAL



- 4** THERMOTEK® X99 SILICONE COATING
- 3** THERMOTEK® POLYESTER MESH
- 2** THERMOTEK® SILICONE MASTIC
- 1** THERMOTEK® SILICONE PRIMER (optional)

COMPONENTS

		No.	PRODUCT	COVERAGE 100 sq. ft.	WET MILS
SYSTEM	1		CLEANING - POWER WASH		(Mineral Spirit)
			CLEANING - MOP WITH SOLVENT	Variable	
			THERMOTEK® SILICONE PRIMER (OPTIONAL)	0.5 Gal	
	2		THERMOTEK® SILICONE MASTIC	Variable	Variable
			THERMOTEK® POLYESTER MESH	Variable	Variable
	3		THERMOTEK® X99 SILICONE COATING	1.0 Gal - 2.5 Gal	16.0 Mils - 40.0 Mils

Note: Estimated coverage rate, rates could vary depending on the roughness & porosity of the surface.

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PART 1 – GENERAL

1.1. SUMMARY

This document provides the installation procedures (specifications) of our products to the specific roofing substrate. These instructions should be used only as a general guide; you might add some specific details depending on the job or the conditions of the roof. These manuals contain roofing products, coverage rates & installation procedures for our THERMOTEK® Roofing Products and complementary products. For specific roofs and jobs, the THERMOTEK® Applicator or THERMOTEK® Representative shall make a final determination of the compatibility of these applications guides.

1.2 APPLICABLE PUBLICATIONS

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only:

- A. American Society for Testing and Materials Publication (ASTM).
- B. Underwriters Laboratories Inc. (UL).
- C. CRRC – Cool Roof Rating Council.
- D. California Building Standards Code - Title 24.
- E. THERMOTEK® Details, Drawings and Notes.

1.3. QUALITY CONTROL

A. Warranty: THERMOTEK® GROUP guarantees that since our products are shipped from the production plant, they will be free of manufacturing defects and defective materials. Liability, if any, is limited to product replacement from the completion date of the work.

B. The manufacturer: shall certify that submitted materials have been actively engaged in the manufacture industry.

C. The THERMOTEK® products should be installed by a Qualified Applicator:

1. Applicators shall have a minimum of 5 years' experience in the application of roofing materials.
2. The manufacturer shall certify that the contractor possesses a current "Qualified Applicator" Certificate and that is authorized for the application of their materials.
3. The applicator shall have general knowledge and understanding of roofing, as well for all THERMOTEK® Roofing Products for any given specified project.
4. The installer, owner or Architect must review all the documents related to all critical points and checklist.
5. For different roofing details and/or terms and conditions for warranty, the installer, owner or architect must contact a THERMOTEK® Qualified Applicator or THERMOTEK® Representative.
6. All issues concerning the roof must be resolved in writing.

1.4. SUBMITTAL

In the normal course of bidding, descriptive literature, technical data, and wet or dry samples of all proposed materials for their use under these specifications, shall be submitted upon request.

1.5. JOB CONDITIONS

To proceed with proper conditions, the applicator must be aware of the following:

- A. UV curing time for all THERMOTEK® Roofing Products is critical. The applicator must allow enough cure time for each product. Please be aware that outside temperatures will be a factor.
- B. Do not begin work if rain or heavy dew is expected within twenty-four to forty-eight (24-48) hours after application.
- C. Do not begin work if temperatures are expected to fall below 50 °F and increase over 104 °F during the installation.
- D. Consider that other environmental conditions such as humidity, mist, dew, extreme temperatures and condensation, can affect THERMOTEK® Roofing Products performance.

1.6. PRODUCT STORAGE AND HANDLING

The THERMOTEK® Roofing Products should be stored at a temperature above 40°F, in a warm, dry, and ventilated area.

1.7. PROTECTION OF PROPERTY

The contractor shall take proper precautions to protect owner's property against damage and overspray. The use of shield boards, masking's and protective coverings shall be necessary. THERMOTEK® is not responsible for damages caused by the overspray of any of its products.

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PART 2 – PRODUCTS

2.1. MATERIALS

A. SYSTEM

- THERMOTEK® PRIMER = THERMOTEK® SILICONE PRIMER (optional)
- THERMOTEK® ROOF COATING = THERMOTEK® X99 SILICONE

B. CRITICAL POINTS

- THERMOTEK® MASTIC = THERMOTEK® SILICONE MASTIC
- FABRIC MESH = THERMOTEK® POLYESTER MESH
- THERMOTEK® ROOF COATING = THERMOTEK® X99 SILICONE

C. COMPLEMENTS

- TSP ROOFING CLEANING = THERMOTEK® WASH

2.2. PRELIMINARY DETAILED INSPECTION

Inspect the preliminary work area and flashing details for problem areas (e.g. gaps, cracks, fishmouths, air pockets, etc.) to ensure the work is satisfactorily completed. Inform Project Architect and THERMOTEK® Technical Representative.

In order for installer to proceed with the application of the THERMOTEK® SYSTEM all the preliminary work and flashing details need to be ready.

Allow a minimum of two weeks for the interim inspection. Any final roofing installation prior to this interim inspection is subject to rejection by the Project Architect and/or the THERMOTEK® Representative.

Please be aware that on site support will be available for contractors to explain the proper use of the THERMOTEK® products.

During the roofing process, a photographic memory log should be prepared, as well as documents that support the adhesion test, this information should be available as request by the THERMOTEK® Representative.

ADHESION TEST: all roofs must be pre-qualified by performing a pull test of the THERMOTEK® Roofing System to be installed on a clean and dry area.

- Tests will be performed in accordance with ASTM 903 Procedures.
- Number of adhesion tests required, one for every 1000 sq. ft with a minimum of two tests per roof.
- Pull test results must be recorded and keep as records.
- No further work shall be performed until pull test results show that adhesion to substrate is adequate.
- Proper evidence needs to keep file & documented and could be requested by THERMOTEK® at any time.

The pull adhesion test needs to reach the minimum required resistance, the procedure to perform an adhesion test over the substrate is:

- 1) Remove all loose particles, granules and debris on the roof by sweeping or vacuuming.
- 2) By using brush, prime the area with THERMOTEK® PRIMER at a rate of 0.5 gal per 100 sq. ft⁽²⁾ and let it dry to the touch.
- 3) Apply the THERMOTEK ROOF COATING with brush at a rate of 1.5 gal per 100 sq. ft⁽²⁾, while the THERMOTEK® ROOF COATING is still wet, embed a strip of 1" wide POLYESTER MESH across the test patch leave a 4" to 6" dry section of Polyester fabric outside the test patch. Apply additional THERMOTEK® ROOF COATING to totally encapsulate the Polyester Mesh.
- 4) Allow to fully cure for a minimum of 48 hrs.
- 5) Attach an appropriate scale to the end of the dry Polyester Mesh strip and pull (a minimum of 4.00 pounds of pull resistance must be achieved).

Note: if the Pull adhesion Test did not reach a minimum resistance of 4 pounds, this is not an eligible Roofing System to apply over this substrate.

2.3. PROCEDURE, COVERAGE RATE & APPLICATION INSTRUCTIONS

THERMOTEK® SYSTEM is approved for application over roofing substrate which have a good drainage.

SURFACE PREPARATION: the surface must be clean, dry and free of dust, dirt, grease, wax, or other incompatible substances that may interrupt the proper adherence of the new fluid applied:

1. Remove all loose particles, granules and debris on the roof by sweeping or vacuuming.
2. For coating or repairing, the surface must be clean, dry and free of dust, dirt, grease, wax, or other incompatible substances; wash with TSP ROOFING CLEANING and clean water using a power wash machine (1500 psi- 1 ft. away).
3. Areas of algae, mildew or fungus on the roof membrane or on the existing coating should be treated with a solution of 1-part household bleach and 3 parts water, followed with power washer rinse using clear water.

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4. Remove all rust by scraping, sandblasting or wire brushing.
5. The panels that are rusted or damaged should be replaced with new panels to match the existing ones.
6. Remove all asphaltic-based patching and flashing materials with power washing, scraping or brushing. Do not apply solvents.
7. Remove all silicone caulks and sealants. Elastomeric acrylic coatings, primers and flashing grade THERMOTEK® Roofing products will not bond to silicone caulks, sealants and/or coatings.
8. Remove and replace deteriorated pipe boots and other flexible flashing materials.
9. All necessary repairs to the existing roof shall be made according to NRCA guidelines.

SUBSTRATE CONDITIONS: the roofing contractor is responsible to ensure that the substrate is acceptable for the THERMOTEK® Roof System:

1. The Applicator must present to the owner a completed inspection form verifying the substrate condition and any noted defects not specifically addressed regarding this installation.
2. The surface shall be free from dirt, loose adhered granules, oil, debris and moisture, it shall be in stable condition. Any work on the area to receive this application shall be completed prior to installation.
3. The applicator shall complete substrate inspection prior to start roof coating.
4. The architect/owner and applicator shall accept the condition of the surface. Beginning the work constitutes an acceptance of the roof conditions by the Applicator, these doesn't represent the acceptance of the job by THERMOTEK®.

APPLICATION INSTRUCTIONS:

1. PONDING WATER AREAS: the NRCA considers ponding water on any roof as undesirable and recommends that all roof systems are designed and built to ensure positive drainage. Be sure substrate is dry and sound prior to THERMOTEK® SYSTEM application.

Follow the following procedure for ponding water areas:

- Mark low areas with roof marking paint.
- Power wash area to ensure the low spot is clean and properly prepared for acceptable adhesion.
- Apply a proper product to provide a quick and easy way to fill in low spots on flat roof and achieve a positive slope to aid in proper drainage. Roofs with standing water and improperly drained areas may require annual maintenance or recoats.

2. PRIMER: Coat the whole surface with THERMOTEK® PRIMER. The coverage rate for THERMOTEK® PRIMER is 0.5 gal per 100 sq. ft ⁽²⁾, use a roller and squeegee and wait 4 to 6 hrs. to dry.

3. CRITICAL POINTS: Review all critical points over the surface and repair them with THERMOTEK® MASTIC, on details like cracks put two coats of THERMOTEK® COATING and between them a layer of POLYESTER MESH.

- For Cracks: seal all small cracks or seams with THERMOTEK® MASTIC, using a brush or sealant knife. Apply one coat of THERMOTEK® ROOF COATING at 1.0 gal per 100 sq. ft ⁽²⁾, then lay POLYESTER MESH into wet coating and apply a second coat of coating at the same rate. The POLYESTER MESH should be completely covered with a minimum of 8 inches.
- For Shrinkage cracks smaller than 3/8": apply a heavy coat for THERMOTEK® MASTIC should be at lists 1" from each side of the crack; let dry thoroughly 4-6 hours. Once the mastic is cured, apply one coat of THERMOTEK® ROOF COATING at 1.0 gal per 100 sq. ft ⁽²⁾. In a width of 3" to 4" and a stretch of POLYESTER MESH reinforcing fabric is imbibe all along the crack, immediately apply the second coat of THERMOTEK® ROOF COATING at 1.0 gal per 100 sq. ft ⁽²⁾.
- For Movement cracks 3/8" or bigger: insert backer rod into the crack. Apply a heavy coat of THERMOTEK® MASTIC, into the crack and encapsulate the backer rod, Mastic should be at least 1" from each side of the crack ; let dry thoroughly 4-6 hours. Once the mastic is cured, apply one coat of THERMOTEK® ROOF COATING at 1.0 gal per 100 sq. ft ⁽²⁾. In a width of 3" to 4" and a stretch of POLYESTER MESH reinforcing fabric is imbibe all along the crack, immediately apply the second coat of THERMOTEK® ROOF COATING at 1.0 gal per 100 sq. ft ⁽²⁾.

4. COAT: apply THERMOTEK® ROOF COATING over the entire surface. The coverage rate for THERMOTEK® ROOF COATING will be 1.0 – 2.5 gal per 100 sq. ft ⁽²⁾

⁽²⁾ COVERAGE RATE: texture and porosity of the existing roof may affect the coverage rate.

FINAL INSPECTION: the applicator shall complete a final roof inspection prior to issue any warranty.

1. SEAMS: after THERMOTEK® ROOF COATING has been applied, the contractor must verify the roof and make sure that all seams are covered. If any open seams are found, additional THERMOTEK® ROOF COATING must be brushed on, until seam is completely encapsulated.
2. FLASHINGS: any cracked flashing or field membrane must be reinforced with a layer of THERMOTEK® ROOF COATING and POLYESTER MESH before the base and top coat of THERMOTEK® ROOF COATING.

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3. HVAC UNITS: existing HVAC Units and other equipment on curbs with membrane must be coated up to the bottom of the metal cap of the unit and caulked underneath with THERMOTEK® MASTIC as long as the curb is a minimum of 8" above the deck.
4. WOODEN SLEEPERS: any units that are sitting on 4"x4" wooden sleepers should be lifted in order for the membrane to be cleaned, primed and coated. If the units are not lifted off the deck, the untreated area will be excluded from the warranty.
5. WET INSULATION AREAS: the existing membrane will have to be cut back on 3 sides and pulled back. The wet insulation and/or defective substrate shall be removed and replaced, the old membrane must be put back into place and fastened to the deck 6" on center with screws and barbed plates. Caulk the centerline with THERMOTEK® MASTIC and striped in with 6" wide POLYESTER MESH and THERMOTEK® ROOF COATING. An approved peel and stick tape can be substituted.
6. When finishing applying the system, the Qualified Applicator should prepare a photographic memory, as well as documents that support the adhesion test, the information could be requested by THERMOTEK® at any time.

Note: Drying time depends on weather conditions such as temperature, humidity and air movements. The above drying times assume good weather (70°F daytime temperature) and NO RAIN. Conditions of lower temperature and rain will require a longer period for drying.

The coverages contained herein are theoretical and these may vary depending on the surface roughness and the weather at the time of application. Existing foam and/or insulation roofs with extensive delamination or blistering of the foam, APP and/or the coating system, major wet areas, saturated foam, etc., will require total removal and possible replacement as per local building codes. When situations are questionable, THERMOTEK® Representative shall be contacted for recommendations. In all cases of prospective re-coats or initial 1st coat applications should be verified as to moisture content by survey, i.e. infra-red, in conjunction with core cuts and moisture readings. If moisture is present, the roof must be vented and allowed to dry completely before proceeding the coating application. For details, follow the published guidelines or contact THERMOTEK®'s Representative.

NOTE: To maintain an optimal performance of the roof system, the owner must execute a Care & Maintenance Program. For additional warranty extension please contact THERMOTEK® Representative.

PART 3 – WARRANTY

3.1. WARRANTY

For details on our Warranty please read our THERMOTEK® PRODUCT LIMITED WARRANTY, to verify all terms, conditions and limitations.

PART 4 – CARE AND MAINTENANCE

4.1. CARE AND MAINTENANCE PROGRAM

In order to ensure that your THERMOTEK® Roofing Products will continue performing to its fullest, you should follow, implement and satisfy this THERMOTEK® Care and Maintenance Program.

- a) Maintain a file for all records relating to your roof, including the THERMOTEK® Roofing Products agreements, reports, invoices, repair and maintenance bills, original drawings and specifications, etc.
- b) Inspect the roof and coating at least twice each year, preferably in spring and fall. The most common areas of damage or distress are drainage points, penetrations, perimeter flashings and traffic areas.
- c) The surface should always be clean and white. Pressure wash the coating as needed (at least once every 12 months) in order to remove all dirt and debris off the surface. Use TSP ROOF CLEANING and clean water with an appropriate pressure washing equipment (1500 psi – 1 ft away), do not use anything but clean water unless THERMOTEK® Roofing Products (in such case, use only approved wash products).
- d) Inspect for damage after severe weather conditions, such as hailstorms, heavy rains, high winds, acts of God, etc.
- e) Arrange the prompt and necessary repairs to correct non-guaranteed conditions affecting the roof surface. Repairs to the surface must be promptly performed with THERMOTEK® Roofing Products, approved contractors with approved products, and repair methods that are consistent with the type and quality of the warranted coating, in order that such repairs will last as long as the THERMOTEK® Roofing Products.
- f) Remove regularly any debris, such as leaves, branches, dirt, rocks, bottles, rubbish... that may accumulate on the roof surface. Clean rain gutters, downspouts, scuppers, and surrounding roof areas to ensure proper drainage.
- g) Examine all metal flashings, counter flashings, expansion joints and pitch pockets for repairing: rust, detachment, deteriorated sealant, and any damage. If it is necessary, reattach loose metalwork, replace sealant and paint rusted areas.
- h) Examine masonry walls and copings for cracks, bad mortar joints, deteriorated sealant, loose masonry/coping stones, and indications of bad water absorption. Repair all such conditions to prevent water filtration.

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- i) Examine rooftop equipment such as air conditioners, ductwork, gooseneck vents, powered ventilators, evaporative coolers, antennas, equipment screens, skylights, satellite dishes, etc... For the excessive movement, spillage of coolant, condensation, oil, grease, water/liquid release, etc. Damage to sheet metal cabinets and rubber or fabric gaskets may allow water filtration. Employ, keep and maintain drainage systems for release of water from rooftop equipment to avoid surface water buildup. Keep all roof top equipment in good conditions.
- j) Inspect with frequency for any cracks, blistering, or flaking. Contact a THERMOTEK® Representative as soon as possible for repairing. Any such cracks or flaking must be recoat/patch with approved THERMOTEK® products.
- k) Minimize rooftop traffic. Establish paths which confine roof traffic to designated areas only. Service personnel should to avoid dropping tools, equipment, parts, etc. on the roof surface; also, they should not make any penetrations or repairs to the coating. All the work affecting the coating must be performed by Certified Roofing Applicator.

LIMITED WARRANTY – We as THERMOTEK® GROUP guarantee that since our products are shipped from the production plant, they will be free of manufacturing defects and defective materials. All the recommendations contained herein follow tests we consider as reliable and are subject to change without prior notice. THERMOTEK® GROUP does not assume any responsibility for coverage, application, and performance on injuries resulting from storage, handling or misuse of our products. Liability, if any, is limited to product replacement, to the terms stated within the executed warranty.

THERMOTEK® Care and Maintenance Program - is intended to address conditions commonly found on buildings (other conditions that require special maintenance considerations may exist). It is the responsible ensuring that the care and maintenance program used for his building is adequate, given that building's specific conditions.