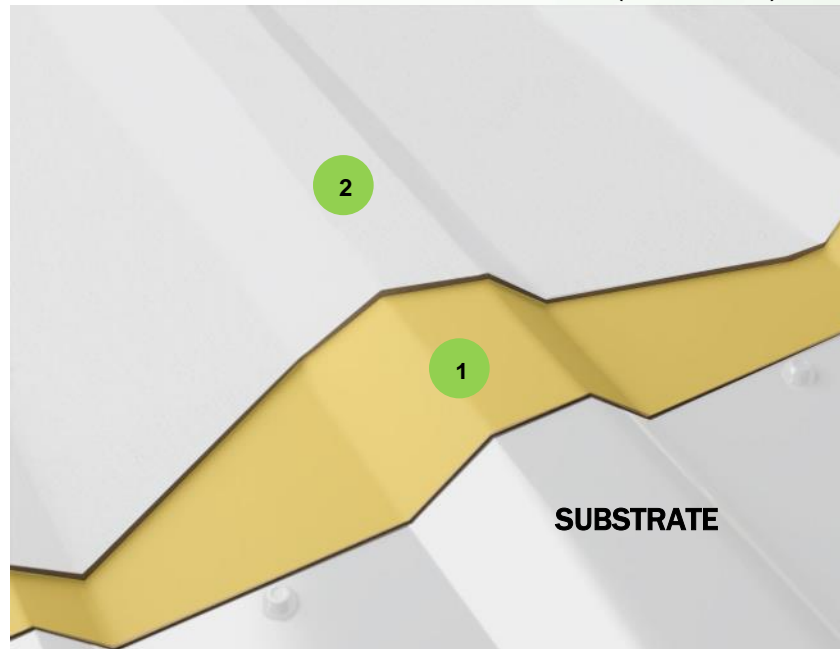


THERMOTЕК™ SILICONE SYSTEM OVER METAL

SILICONE SYSTEM OVER METAL SURFACE (41.75 MILS)



1. RUST INHIBITOR
2. THERMOTЕК™ X99 SILICONE HIGH SLOPE

COMPONENTS AND WEIGHTS

	Coat	Product	Coverage (100 sq. ft.)	Dry Weight Lb	Dry Mils
SYSTEM	1	THERMOTЕК™ X99 SILICONE HS	2.25 gal	22.67 LB/SQ	37.58 Mils
	SYSTEM			27.67 LB/SQ	37.58 Mils
CRITICAL POINTS	1	THERMOTЕК™ SILICONE MASTIC	Variable	Variable	Variable
	2	POLYESTER MESH	Variable	Variable	Variable
COMPLEMENTS	1	RUST INHIBITOR	Variable	Variable	Variable
	2	THERMOTЕК™ WASH	0.2 gal	Variable	Variable

*Approximate measures.

- a) To become an acceptable roof for a THERMOTЕК™ Silicone Coating, a THERMOTЕК™ Technical Representative or a THERMOTЕК™ Certified Licensed Contractor must perform an adhesion test on the roof.
- b) The use of THERMOTЕК™ SILICONE PRIMER on the Silicone Roofing System could be optional depending upon the result of the Pull Adhesion Test.
- c) If the test result is less than 8 pounds of pull resistance, THERMOTЕК™ SILICONE PRIMER must be applied at a minimum rate of 1.25 gal /per 100 square feet* and a second pull adhesion test must be performed (a minimum of 8 pounds must be obtained).
- d) The tests will be performed in accordance with ASTM 903 Procedures.
- e) The number of adhesion tests required, will be one for every 1000 sq ft with a minimum of two tests per roof.
- f) If after THERMOTЕК™ SILICONE PRIMER application, the pull adhesion test did not reach the minimum resistance, this substrate is not eligible for a THERMOTЕК™ Silicone Roofing System.
- g) The use of THERMOTЕК™ SILICONE PRIMER could help reduce the yellowing of the Silicone Roofing System, although when is applied over asphalt, BUR or modified bitumen membrane some yellowing could present over the surface depending on the aging of the applied roofing system.

* This rate may vary depending on the roughness of the surface.

PART 1 – GENERAL

1.1. SUMMARY

This document provides the specifications for the application of our product to roofing surface. These specifications should be used only as a general guide, with the addition of specific details as different job conditions.

These tools include roofing products, coverage rate, installation procedures with THERMOTЕК™ Roofing Products and complementary products. Final determination of the fitness of the application of any THERMOTЕК™ Roofing Products shall not be made by anyone other than an authorized representative of THERMOTЕК™ Roofing Products.

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. THERMOTЕК™ Details, Drawings and Notes

1.3 QUALITY CONTROL

- A. Warranty: THERMOTЕК™ 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 for a minimum period of 10 years prior to submittals.
- C. Applicator Qualifications:
 - 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 THERMOTЕК™ Roofing Products for any given specified project.
 - 4) For all warranties, a firm which has complete business stability shall perform the work in this section: present a copy of certification upon request by the Architect or the owner.
 - 5) The installer, owner or Architect must review all the documents related to all critical points and check list.
 - 6) For different roofing details and/or terms and conditions for warranty, the installer, owner or architect must contact a THERMOTЕК™ Technical Representative. All issues concerning the roof must be resolved in writing.

1.4 SUBMITTALS

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 THERMOTЕК™ Roofing is critical. The applicator must allow sufficient 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 THERMOTЕК™ Roofing Products in an inconsistent way.

1.6 PRODUCT STORAGE AND HANDLING

All the time, the THERMOTЕК™ Roofing Products should be stored at a temperature above 40 °F, in a warm, dry, clean and well-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, maskings and protective coverings shall be necessary. THERMOTЕК™ is not responsible for damages caused by the overspray of any of its products.

PART 2 – PRODUCTS

COMPONENTS AND WEIGHTS

	Coat	Product	Coverage (100 sq. ft.)	Dry Weight Lb	Dry Mils
SYSTEM	1	THERMOTЕК™ X99 SILICONE HS	2.25 gal	22.67 LB/SQ	37.58 Mils
	SYSTEM			27.67 LB/SQ	37.58 Mils
CRITICAL POINTS	1	THERMOTЕК™ SILICONE MASTIC	Variable	Variable	Variable
	2	POLYESTER MESH	Variable	Variable	Variable
COMPLEMENTS	1	RUST INHIBITOR	Variable	Variable	Variable
	2	THERMOTЕК™ WASH	0.2 gal	Variable	Variable

*Approximate measures.

2.1 MATERIALS

- A. **SYSTEM**
 - THERMOTЕК™ X99 SILICONE HIGH SLOPE
- B. **CRITICAL POINTS**
 - THERMOTЕК™ METAL PRIMER
 - THERMOTЕК™ SILICONE MASTIC
 - POLYESTER MESH
- C. **COMPLEMENTS**
 - THERMOTЕК™ 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 be satisfactorily completed. Inform Project architect and THERMOTЕК™ Technical representative when all preliminary work and flashing details are completed, in order the installer gets ready to proceed with application of THERMOTЕК™ SILICONE SYSTEM - OVER METAL. 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 THERMOTЕК™ Technical representative. Please be aware that technical on-site support for instructing certified contractors in the proper application of the THERMOTЕК™ SILICONE SYSTEM - OVER METAL is available.

A. ADHESION TEST: all roofs must be pre-qualified by a THERMOTЕК™ Representative or a THERMOTЕК™ Certified Licensed Contractor (CLA) by performing on a clean and dry roof area, an adhesion test of the THERMOTЕК™ Silicone roofing system to be applied.

- The tests will be performed in accordance with ASTM 903 Procedures.
- The number of adhesion tests required, will be one for every 1000 sq ft with a minimum of two tests per roof.
- The pull test results must be recorded and sent to THERMOTЕК for final approval.
- **No further work shall be performed until evaluation test results show that adhesion to substrate is adequate.**

The THERMOTЕК™ Rep. or THERMOTЕК™ CLA must perform the first adhesion test by applying THERMOTЕК™ X99 SILICONE HIGH SLOPE over the substrate.

Test 1

NO
PRIMER

- 1) Clean an area at least 12" x 12".
- 2) Apply by brush THERMOTЕК™ X99 SILICONE HIGH SLOPE coating at a rate of 1.25 gallon per square (19.275 dry mils.). While the THERMOTЕК™ X99 SILICONE HIGH SLOPE still wet, embed a strip of 1" wide Roofing Polyester Fabric across the test patch leaving a 4" to 6" dry section of Test Polyester fabric outside the test patch. Apply additional THERMOTЕК™ X99 SILICONE HIGH SLOPE similar to first, to totally encapsulate the Test Polyester fabric tape. Allow the coating to cure for a minimum of 4 days,
- 3) Then, attach an appropriate scale to the end of the dry polyester fabric strip and pull (a minimum of 8.00 pounds of pull resistance must be achieved).
- 4) If the test was successful and 8 pounds of pull resistance adhesion are obtained, THERMOTЕК™ X99 SILICONE HIGH SLOPE coating will be compatible for the installation of the THERMOTЕК™ Silicone Roofing System.

If the pull adhesion test did not reach the minimum required resistance, the THERMOTЕК™ Rep. or THERMOTЕК™ CLA must perform a second adhesion test by applying THERMOTЕК™ SILICONE PRIMER over the substrate.

Test 2

WITH
PRIMER

- 1) By using brush, prime the area with THERMOTЕК™ SILICONE PRIMER at a rate of 1.25 gallon per 100 square feet (15.64 dry mils) and let it cure for 24 hours.
- 2) Apply with brush the THERMOTЕК™ X99 SILICONE HIGH SLOPE coating at a rate of 1.5 gallon per 100 square feet (23.13 dry mils).
- 3) While the THERMOTЕК™ X99 SILICONE HIGH SLOPE is still wet, embed a strip of 1" wide Roofing Polyester Fabric across the test patch leaving a 4" to 6" dry section of Test Polyester fabric outside the test patch. Apply additional THERMOTЕК™ X99 SILICONE HIGH SLOPE similar to first, to totally encapsulate the Test Polyester fabric tape. Allow the coating to cure for a minimum of 4 days,
- 4) Then, attach an appropriate scale to the end of the dry polyester fabric strip and pull (a minimum of 8.00 pounds of pull resistance must be achieved).
- 5) If the test was successful and 8 pounds of pull resistance adhesion are obtained, THERMOTЕК™ SILICONE PRIMER must be applied on the THERMOTЕК™ Silicone Roofing System.

Note: If the pull adhesion test did not reach a minimum resistance of 8 pounds, this is not an eligible Roofing System to apply over this substrate.

2.3 PROCEDURE, COVERAGE RATE & APPLICATION INSTRUCTIONS

THERMOTЕК™ SILICONE SYSTEM - OVER METAL is approved for application over metal roofing sheets which have a good drainage.

- A. 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 on the roof by sweeping or vacuum.
- 2) For coating or repairing, the surface must be clean, dry and free of dust, dirt, grease, wax, or other incompatible substances; wash with THERMOTЕК™ WASH 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.
- 4) Add additional fasteners to tighten laps where gaps exist. Gaps should not exceed ¼ inch in width.
- 5) Stripped, loose or missing fasteners should be replaced with the next available larger diameter fastener size. Check all fasteners to ensure they are tight.
- 6) Remove all rust by scraping, sandblasting or wirebrushing.
- 7) The panels that are rusted or damaged should be replaced with new panels to match the existing ones.
- 8) Remove all asphaltic-based patching and flashing materials with power washing, scraping or brushing. Do not apply solvents.
- 9) Remove all silicone caulks and sealants. Elastomeric acrylic coatings, primers and flashing grade THERMOTЕК™ Roofing products will not bond to silicone caulks, sealants and/or coatings.
- 10) Remove and replace deteriorated pipe boots and other flexible flashing materials.
- 11) All necessary repairs to the existing roof shall be made according to NRCA (National Roofing Contractors Association) guidelines.

B. SUBSTRATE CONDITIONS: the roofing contractor is responsible to ensure that the substrate is acceptable for the THERMOTЕК™ roof system:

- 1) THERMOTЕК™ Technical representative must present to the owner a completed inspection form verifying the substrate condition and any noted defects not specifically addressed in regard to 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. The architect/owner and applicator shall accept the condition of the surface. Beginning the work constitutes an acceptance from the THERMOTЕК™ Technical representative

C. APPLICATION INSTRUCTIONS:

- 1) **RUST INHIBITOR APPLICATION:** cover the rust areas with a RUST INHIBITOR. To prevent the new corrosion damage the THERMOTЕК™ Silicone Roofing System.
- 2) **CRITICAL POINTS:** Review all critical points over the surface and repair them with THERMOTЕК™ SILICONE MASTIC, on details like cracks put two coats of THERMOTЕК™ SILICONE MASTIC and between them a layer of POLYESTER MESH.
 - For Cracks: seal all small cracks or seams with THERMOTЕК™ SILICONE MASTIC, using a brush or sealant knife. Apply one coat of THERMOTЕК™ X99 SILICONE HIGH SLOPE at .75 gallons per square (100 sq. ft.), 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 3/4": apply a heavy coat THERMOTЕК™ SILICONE MASTIC self-leveling the crack at 1" to each side of it; let dry thoroughly 3-4 hours. Once the mastic is cured, apply one coat of THERMOTЕК™ X99 SILICONE HIGH SLOPE at .75 gallons per square (100 sq. ft.).
 - For Movement cracks 3/4" or bigger: insert polyurethane backer rod into the crack. Apply a heavy coat of THERMOTЕК™ SILICONE MASTIC self-leveling the crack and encapsulating the backer rod at 1" to each side of it; let dry thoroughly 3-4 hours. Once the mastic is cured, apply one coat of THERMOTЕК™ X99 SILICONE HIGH SLOPE at .75 gallons per square (100 sq. ft.).
- 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 THERMOTЕК™ X99 SILICONE HIGH SLOPE application.

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

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 coating adhesion.
 - Apply a THERMOTЕК™ SILICONE MASTIC, using a stiff bristled brush or sealant knife, to the areas inside the marked areas. Roofs with standing water and improperly drained areas may require annual maintenance or recoats.
- 4) THERMOTЕК™ SILICONE PRIMER APPLICATION (OPTIONAL¹): coat the whole surface with THERMOTЕК™ SILICONE PRIMER. The coverage rate¹ for THERMOTЕК™ SILICONE PRIMER is 1.25 gallons per 100 square feet.
 - 5) THERMOTЕК™ SILICONE X99 HIGH SLOPE COATING APPLICATION: apply THERMOTЕК™ SILICONE X99 HIGH SLOPE over the entire surface. The coverage rate for THERMOTЕК™ SILICONE X99 HIGH SLOPE will be 2.5 gallons per 100 square feet.
 - 6) Finally, the applicator shall complete substrate inspection prior to start roof coating. The architect/owner and applicator shall accept the condition of the surface. Beginning the work constitutes an acceptance from the THERMOTЕК™ Technical representative.

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

- 1) **SEAMS:** after THERMOTЕК™ SILICONE X99 HIGH SLOPE 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 THERMOTЕК™ SILICONE X99 HIGH SLOPE 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 THERMOTЕК™ SILICONE X99 HIGH SLOPE COATING and POLYESTER MESH before the base and top coat of THERMOTЕК™ SILICONE X99 HIGH SLOPE COATING.
- 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 THERMOTЕК™ SILICONE 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 the membrane 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 THERMOTЕК™ SILICONE MASTIC and striped in with 6" wide POLYESTER MESH and THERMOTЕК™ SILICONE X99 HIGH SLOPE COATING. An approved peel and stick tape can be substituted.

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, THERMOTЕК™ Technical 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 THERMOTЕК™'s Technical Department.

PART 3 – WARRANTY

3.1 WARRANTY

Please read our THERMOTЕК™ PRODUCT LIMITED WARRANTY¹, to verify our available warranty periods.

NOTE: For additional warranty questions please contact THERMOTЕК™ Technical and Warranty Services department.

¹LIMITED WARRANTY - We as THERMOTЕК GROUP guarantee that since our products are shipped from the production plant they will be free of manufacturing defects; all the recommendations contained herein follow tests we consider as reliable and are subject to change without prior notice. THERMOTЕК GROUP does not assume any responsibility for coverage, performance on injuries resulting from storage, handling or use of our products. Liability, if any, is limited to product replacement, to the terms stated within the executed warranty.

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 Program¹.

- 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. 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.
- D. 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.
- E. The surface should always be clean and white. Pressure wash the coating as needed (at least once time every 12 months) in order to remove all dirt and debris off the surface. Use THERMOTEK™ WASH 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).
- F. Inspect for damage after severe weather conditions, such as hailstorms, heavy rains, high winds, acts of God, etc.
- G. 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.
- H. 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 ensure proper drainage.
- I. 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
- J. 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.
- K. 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.
- L. Inspect with frequency for any cracks, blistering, or flaking. Contact a THERMOTEK™ Roofing Products representative for repairing. Any such cracks, blistering or flaking must be recoat/patch with approved THERMOTEK™ Roofing products.
- M. Minimize rooftop traffic. Establish paths which confine roof traffic to designated areas only. Service personnel should take care 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 an approved THERMOTEK™ Roofing Products contractor.

END OF SECTION

¹ 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 responsibility of the building owner ensuring that the care and maintenance program used for his particular building is adequate, given that building's specific condition.