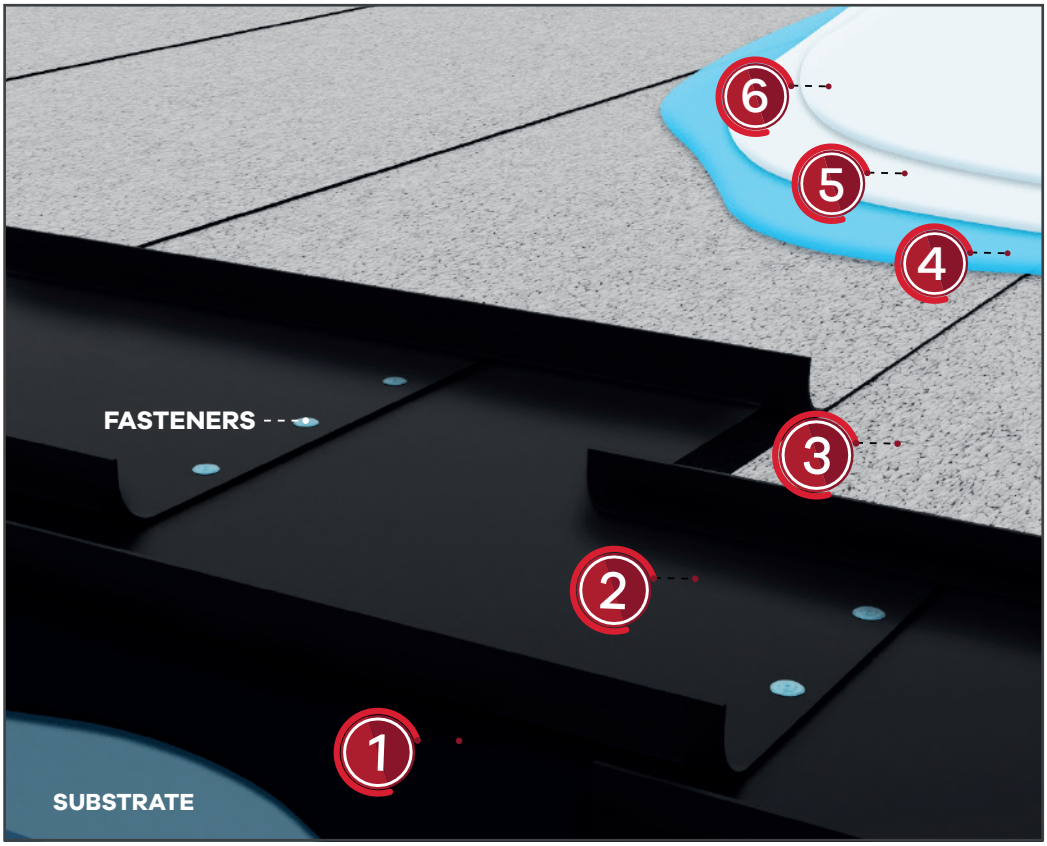
# APPLICATION GUIDE

**THERMOTEK® USA PRO TORCH SYSTEM OVER POLYISO (G2 / Base Sheet + Cap Sheet)**

THERMOTEK® ROOF COATINGS




6 **THERMOTEK®** ACRYLIC ROOF COATING

5 **THERMOTEK®** ACRYLIC ROOF COATING

4 **THERMOTEK®** BLEED BLOCK PRIMER

3 **THERMOTEK® USA PRO** CAP SHEET

2 **THERMOTEK® USA PRO** BASE SHEET / G2

1 **THERMOTEK®** ASPHALT PRIMER

## COMPONENTS

| | No. | PRODUCT | COVERAGE 100 sq. ft. | DRY Mils |
|---|---|---|---|---|
| SYSTEM | 1 | ASPHALT PRIMER ASTM D-41 | Variable | Variable |
| | 2 | ASPHALT G2 MEMBRANE THERMOTEK® USA PRO BASE SHEET | G2: VARIABLE THK: 95.4 - 213.8 SQFT | G2: VARIABLE THK: 60 - 160 Mils |
| | 3 | THERMOTEK® USA PRO CAP SHEET | 95.4 sq. ft. | 140 - 200 Mils |
| | | **SYSTEM** | | **200 - 360 Mils** |

**OPTIONAL FINAL COAT**

| | No. | PRODUCT | COVERAGE 100 sq. ft. | DRY Mils |
|---|---|---|---|---|
| SYSTEM | 4 | THERMOTEK® BLEED BLOCK PRIMER | 2.0 Gal | 32.6 Mils |
| | 5 | THERMOTEK® ACRYLIC ROOF COATING | 1.5 Gal | 24.0 Mils |
| | 6 | THERMOTEK® ACRYLIC ROOF COATING | 1.5 Gal | 24.0 Mils |
| | | **SYSTEM** | | **80.6 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 for 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 application guides.

### 1.2 APPLICABLE PUBLICATIONS

The publications listed below form part of the specification as an extended reference. The publications used are referred below:

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 as 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 of the 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 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

The points below are critical for the performance of the THERMOTEK® products, 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

At all times 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.

## PART 2 – PRODUCTS

### 2.1. MATERIALS

**A. SYSTEM**

- ASPHALT PRIMER (ASTM D-41)
- BASE SHEET = THERMOTEK® SELFADHESIVE BASE SHEET / G2
- THERMOTEK® SA CAP SHEET = THERMOTEK® SELFADHESIVE POLYESTER CAP SHEET

**B. CRITICAL POINTS**

- THERMOTEK® MASTIC = THERMOTEK® DURAMASTIC/ ASPHALT BITUMEN / ASPHALT MASTIC ASTM D-6511
- SA BASE SHEET = THERMOTEK® SELFADHESIVE BASE SHEET

**C. COMPLEMENTS**

- THERMOTEK® BLEED BLOCK PRIMER
- THERMOTEK® ROOF COATING = THERMOTEK® ACRYLIC ROOF COATING
- THERMOTEK® WASH

### 2.2. PRELIMINARY DETAILED INSPECTION

Inspect the preliminary work area and flashing details (e.g. gaps, cracks, fish mouths, air pockets, etc.) to ensure all the work is complete. Inform Project Architect and THERMOTEK® Representative.

In order for contractor 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 a 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, this information should be available as request by the THERMOTEK® Representative.

### 2.3. PROCEDURE, COVERAGE RATE & APPLICATION INSTRUCTIONS

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

**SURFACE PREPARATION:** the surface must be clean, dry and free of dust, dirt, grease, wax, or other incompatible substances that may affect the proper adherence of the new roof system:

1. Remove all loose particles, granules and debris on the roof by sweeping or vacuuming.
2. For recoat or repair surface must be clean, dry and free of dust, dirt, grease, wax, or other incompatible substances; wash with THERMOTEK® WASH and clean water using a power wash machine (1500 psi- 1 ft. away).
3. Remove all rust by scraping, sandblasting or wire brushing.
4. Remove all asphaltic-based patching and flashing materials with power washing, scraping or brushing. Do not apply solvents.
5. Remove all silicone caulks and sealants. THERMOTEK® Roofing could not bond to silicone caulks, sealants and/or coatings.
6. Remove and replace deteriorated pipe boots and other flexible flashing materials.
7. The panels that are rusted or damaged should be replaced with new panels to match the existing ones.
8. When multiple layers of insulation are installed, all the joints between them should be staggered. Insulation greater than 2.5 inches shall be installed in multiple layers.
9. The insulation must be kept dry and roofed promptly after installation. Insulation must be covered with the roofing membrane before the end of the day's work.
10. The edges must fit neatly against adjoining surfaces to provide a smooth overall surface. Gaps greater than 1/4-inch width shall be filled with insulation.
11. Install tapered insulation around roof drains and penetrations to provide adequate slope for proper drainage.
12. Mechanically attached insulation shall be fastened in accordance with FM Approvals requirements for the applicable geographic zone with the required number and type of fasteners and plates. Exception: where requirements are severe compared to FM Approvals or third-party manufacturers, Requirements shall be followed unless otherwise required by the applicable Code or Approval agency.
13. All necessary repairs to the existing roof shall be made according to NRCA (National Roofing Contractors Association) guidelines.
14. The substrate to which the THERMOTEK® roof system will be installed must:
    a. Be smooth, flat and clean.
    b. Be free of foreign materials that could damage the system.

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**SUBSTRATE CONDITIONS:** the roofing contractor is responsible to ensure that the substrate is acceptable for the THERMOTEK® roof system:

1. The Contractor 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 Contractor shall complete substrate inspection prior to start roof coating.
4. The Architect/Owner and Contractor 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.
2. **PRIMER:** Apply ASPHALT PRIMER ASTM D41, coat the whole surface with a roller or brush. Coverage and drying time is based on the TDS of the Manufacturer.
3. **ROLLS PREPARATION:** Cut labels and unroll on the roof. Wait until the roll has flattened before proceeding.
4. **BASE SHEET:** Align the rolls throughout the installation process. Proceed from the bottom of the roof to the top and continue alignment of the roll from the lowest part of the roof. Apply THERMOTEK® BASE SHEET / G2, depending on the thickness of the rolls & specifications of the job you can either mechanically can either or torch to the surface. If mechanically attached, fasteners will be required and should be at least 1inch (25mm) bigger plus the thickness of the polyiso, the number of fasteners varies from state to state regulations, please refer to the proper building code. The coverage rate THERMOTEK® BASE SHEET / G2 will be variable please refer to the TDS.
5. **CRITICAL POINTS:** Review all critical points over the surface and repair them with THERMOTEK® MASTIC and THERMOTEK® BASE SHEET.
6. **REINFORCEMENTS**: Contractor should place reinforcements in every corner, these reinforcements are made depending on the size of the corner excelling at least 2" each side, then, cover with THERMOTEK® BASE SHEET; for chimneys or pipes, a part of at least the diameter of the flue or chimney (more 4") is cut into strips, 50% of it to cover the flue or chimney, the remaining material is melted against the slab. In domes, treat a banding strip type throughout faces covering at least 4" and 4" slab between the walls of the dome. In drains do the procedure as follows, take a THERMOTEK® BASE SHEET roll, cut a part excelling at least 4" of each side of the downspout, cut an area in a tongue form and merge it with the drain (which can be PVC pipe, metal or concrete) and the remaining material is melted against the slab and parapet.
7. **CAP SHEET:** Align the rolls throughout the installation process. Proceed from the bottom of the roof to the top and continue alignment of the roll from the lowest part of the roof. Apply THERMOTEK® CAP SHEET with torch. Safely apply a torch to the polyethylene surface. Warm the surface and continue to unroll while ensuring the torched area adheres to the substrate. Be careful not to torch to much or too little on the product because it will affect the performance, To little: lack of adhesion to the substrate, To much: footmarks on the finish side. The coverage rate for THERMOTEK® CAP SHEET is a 0.954 square (theoreti cal coverage-because of overlaps). Ensure a proper longitudinal overlapping on the rolls, with a minimum of 4" on the sides. In the transversal overlap, ensure a minimum of 6" overlap, lower the granule with a spatula and flame in order to have an improved adherence to the bottom roll. To ensure a proper adhesion on the seams, make a bleed through of 1/4" inch - 1" inch on every seem.
8. **DISTRIBUTION TWO SYSTEM ROLLS:** It is important on a double layer system, membrane may be installed with a half-lap installation technique.
9. **REFLECTIVE FINISH:** For a REFLECTIVE FINISH (according TITLE 24 COMPLIANCE) apply THERMOTEK® BLEED BLOCK PRIMER over the entire surface. The coverage rate will be 2.0 gal per 100 sq. ft [(2)]. THERMOTEK® BLEED BLOCK PRIMER helps prevent yellowing stain. Then apply two coats of THERMOTEK® ROOF COATING at a minimum rate of 1.5 gal per 100 sq. ft [(2)]. per coat, total coverage rate minimum of 3.0 gal 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® BASE SHEET and THERMOTEK® CAP SHEET must be installed.
2. FLASHINGS: any cracked flashing or field membrane must be reinforced with a layer of THERMOTEK® CAP SHEET before the base and top coat of THERMOTEK® ROOF 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 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 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. An approved peel and stick tape can be substituted.
6. THERMOTEK® Qualified Applicator, when you finish applying the system should, a photographic memory log should be prepared, 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 Technical Department.

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. LIMITED 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 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).
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 ensure proper drainage.

g) Examine all metal flashings, counter flashings, expansion joints and pitch pockets for repairing: rust, detachment, deterio rated 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.
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® Contractor 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 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 a 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.