Tropical Roofing Products-BUR/MODBIT – 6E-1P-3G911

10-Year System

01012022

PART I – GENERAL

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.

1. American Society for Testing and Materials Publication (ASTM)
2. Underwriters Laboratories Inc. (U.L.)
3. ENERGY STAR® guidelines for energy efficiency (Roof Coatings)
4. CRRC – Cool Roof Rating Council
5. California Building Standards Code - Title 24

QUALITY CONTROL

1. Contractor shall be an approved applicator by Tropical Roofing Products who has a general knowledge and understanding of standard roofing practices as defined by the NRCA and knowledge of the Tropical Roofing Products materials to be used herein this specification.
2. Prior to starting the application of the roofing system, there will be a project conference with the owner's representative to assure a clear understanding of the specifications. The conference shall be attended by the Contractor and by Tropical Roofing Products representative.
3. Mandatory Substrate Inspection by Tropical Personnel.
4. For all warranties, a licensed contractor, authorized by Tropical Roofing Products as an approved applicator with proven business stability should be used to ensure proper installation.

SUBMITTALS

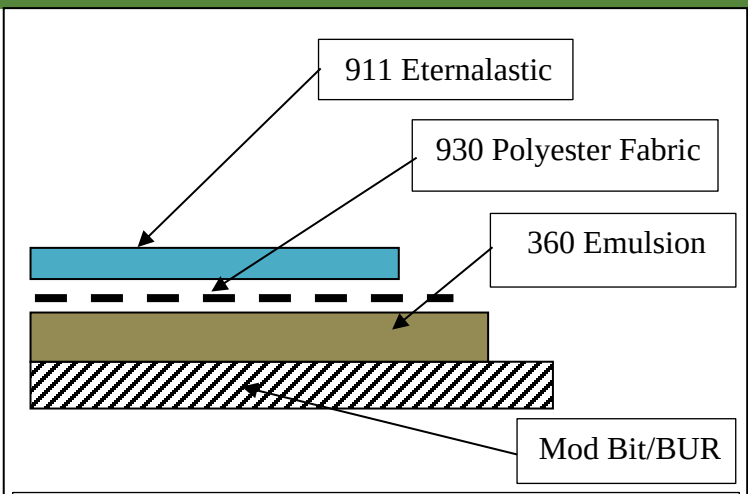
Descriptive literature: Submit manufacturer's application instructions and technical data sheets or catalog cuts on materials.

DELIVERY, STORAGE AND HANDLING

1. Store and handle Tropical Roofing Products materials in a manner that will ensure there is no possibility of contamination.
2. Store materials in a dry, well ventilated, weather tight location at temperatures between 50ºF -80ºF until the materials are applied.
3. Keep product lids tightly closed on all containers when not in use.
4. Take all necessary precautions to ensure that damage and overspray will not occur. Tropical Roofing Products is not responsible for damages caused by the overspray of its products.

PROJECT PRECAUTIONS

1. All warranties require wet substrate components of the existing roof to be replaced. A moisture scan is recommended to validate that the underlying roof system insulation is moisture free.
2. Air intake, vents, blowers, air conditioning units and evaporative coolers shall be shut down for the duration of the project.
3. Curing time for all products is critical. Applicator must allow for sufficient cure time for each product.
4. Do not begin work if temperature fall below 50ºF.



- ✓ Water Based – No Fumes – No Flames
- ✓ Tough – Flexible – Strong
- ✓ Lightweight – Seamless – Smooth
- ✓ Energy Efficient Reflective/Emissive
- ✓ Tax Benefits
- ✓ Renewable

MATERIAL REQUIREMENTS PER 100 SQ. FEET OF SURFACE		
System Component	**Amount**	**Dry Mils**
1. #360 Asphalt Emulsion (Base Coat)	6 Gal	37 mils
2. #930 Polyester Fabric	1 Ply	6 mils
3. #911 Eternalastic (Base Coat)	1.5 Gal	12.5 mils
4. #911 Eternalastic (Topcoat)	1.5 Gal	12.5 mils

SYSTEM WET/DRY MILS AND WEIGHT*	
1. Total System Dry Weight lbs. (approx.)	48 lbs.
2. Total System Wet/Dry Mils (approx.)	144/68mils

COMPONENT PERFORMANCE REQUIREMENT & TEST METHODS			
# 911	**#360**	**#951**	**#930**
Solar Reflectance Index - 108	ASTM D1227	Solids BY Wt. 75.7%	Tensile Strength 41 lbs
CRRC ID 0656-0002	TYPE III CLASS	Solids By Vol. 59.9%	Weight 2.9 oz/yd2
MAX V.O.C 49 G/L	MAX V.O.C 0 G/L	MAX V.O.C 15 G/L	
Title 24 Compliant		Elongation 163%	Elongation 26%

***Note: dry film values shown are approximations and can vary depending on surface conditions. 6 mils added to DFT for Fabric.**

*This Tropical Roofing Products **SYSTEM-SPEC** is an abbreviated outline of coating roofing requirements and is intended for use as a submittal with a bid package. Contractors, Specifiers and the Authorized Roofing Applicators must comply with the "Application" section of Technical Data Bulletins on the first page of this document prior to design or bid. The "Products" and "Safety" sections included in the Technical Data Bulletins and SDS contain information pertaining to the proper usage of products as well as applicable safety precautions. These sections must be thoroughly reviewed prior to the installation of this roofing system. Tropical Roofing Products Care & Maintenance program must be implemented in order to ensure that your roof will continue to perform to its fullest during the entire time of the warranty.*

Tropical Roofing Products-BUR/MODBIT – 6E-1P-3G911

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WARRANTY INFORMATION

1. **Limited labor & material warranty:** A manufacturer's limited labor & material warranty is available on approved projects.
2. **Limited warranties**: are not available for continuous immersion service; cryogenic, freezer or cold storage facilities; or over existing wet roofing materials. Other limitations may apply.
3. **Inspections**: Substrate inspection, adhesion test, and final quality control roof inspection are required, and will be performed with TRP Representative for all warranted labor and materials projects**.**
4. **Warranty submittals:** TRP Warranty Pre-Approval Application and adhesion results are required for all labor and materials warranted projects.

PROJECT CONDITIONS

1. All mechanical units, skylights, vents, and other rooftop accessories should be in place prior to preparation and coating application.
2. Cover all surfaces not to be prepared and/or coated to prevent overspray damage. Use wind screens as appropriate.
3. Review existing and imminent weather conditions (including potential for extreme temperatures, relative humidity, frost, dew, and precipitation) to assure that coating and accessory material will have sufficient curing time.
4. Temperature at the time of application of the roof coating should be above 50°F to allow coating to be cured properly. Contact TRP Representative if applying roof coating to roof substrate temperature above 120°F.
5. Protect the roof coating from foot traffic or other potential abuse during the curing process. The coating is considered cured when it is tack-free and sufficiently durable to withstand foot traffic.
6. All work performed under this guide specification must be in accordance with all local, state, and federal regulations.
7. A **moisture survey is required** to validate that the project can receive coating.
8. Air intake, vents, blowers, air conditioning units and evaporative coolers shall be shut down for the entire project.
9. **Treatment of Ponding Water Areas:** The National Roofing Contractors Association (NRCA) considers ponding water on any roof undesirable and recommends that all roof systems be designed and built to ensure positive drainage. Corrective action should be considered, prior to application of #911 Eternalastic Acrylic roof coating, to correct existing ponding conditions and/or drainage deficiencies.

PART II – PRODUCTS

DESCRIPTION OF THIS RESTORATION SYSTEM

A highly reflective Fluid Applied Restoration Coating System used to restore existing or new BUR and Mod Bit. This restorations system is reinforced with polyester fabric to extend the life of the existing substrate. This restoration system is applied directly over the existing substrates eliminating the need for roof tear offs. This restoration system will significantly reduce roof temperatures and energy costs. When used in this specification over a BUR or Modified Bitumen roof, a seamless, monolithic roof system is achieved.

MATERIALS

1. **Eternalastic Elastomeric Roof Coating #911: i**s a professional grade 100% acrylic Elastomeric coating that exhibits maximum flexibility in cold climates and meets ASTM D 6083. In addition, #911 is Energy Star Approved, California Title 24 compliant, U.L. classified, and Miami-Dade County Approved, #911 will dramatically reduce roof temperatures while protecting the underlying roof membrane.
2. **Asphalt Emulsion #360:** is a versatile water-based roof and waterproof coating. #360 is a solvent free, all purpose, non-fibered coating ideal for use as a surface coating to protect built-up roofing, metal, and masonry surfaces, and for pipes and tanks above or below ground level. #360 is cold-applied, corrosion-resistant, and waterproof when dry. #360 will not run, sag, crack, or "alligator" under most weather conditions. Meets and exceeds all the requirements of ASTM D 1227, Type III, Class I. UL Classified.
3. **Fibered Eternamastic Elastomeric Roof Mastic #951:** #951 is a fiber-fortified, tough, durable, white elastic compound of high-grade raw materials. Easy to apply by brush, this fiber reinforced, viscous mastic is an integral part of waterproofing roofing surfaces. The #951 is a superior choice in maintenance and re-roofing situations. #951 should be used at laps, cracks, seams, screw heads, or any place a roof intrusion is made.
4. **Polyester Fabric #930:** #930 polyester fabric is non-woven, spun bonded 100% that covers 10 squares per roll, firm or soft. Tropical Roofing Products #930 is available in variable widths and must be used in conjunction with #951 fibered Eternamastic at all seams, penetrations, joints, or transitions that are subjected to high shear.

PART III - EXECUTION

PREPARATION

1. Preparation of the roof substrate is the responsibility of the installer, who shall address and correct all the conditions listed in this section. Examine substrates to receive new roofing. Do not proceed with the installation of the Coating System until unsatisfactory conditions have been corrected in a manner acceptable to Tropical Roofing Products.

2. All areas that are to be coated or repaired must be clean, dry, and free of dust, dirt, grease, wax, or other incompatible substances to promote satisfactory adhesion.
3. **Blisters/Splits:** Large splits/blisters are required to be repaired prior to application of the system.
4. **Membrane Repair:** Thoroughly inspect the roof substrates for defects (holes and openings). For cracks over 1/8" wide, use #930 polyester fabric with #951 fibered Eternamastic and spread to 2" to 4" beyond the crack in a three-course fashion (refer to flashing section for details).
5. **Membrane Cleaning:** Remove grease, oils, or contaminants with a mild detergent prior to final cleaning. Bleach diluted with water may be used to remove any algae, fungus, or vegetation present. Thoroughly rinse surface and allow to dry prior to coating.
6. **Treatment of Ponding Water Areas:** Installer is to mechanically eliminate all ponding water areas on the roof prior to application of Tropical Roofing Products materials. The National Roofing Contractors Association (NRCA) considers ponding water on any roof undesirable and recommends that all roof systems be designed and built to ensure positive drainage. (See the NRCA Roofing and Waterproofing Manual).

APPLICATION

FLASHING APPLICATION

1. After completion of substrate preparation, all flashing details, penetrations, and curbs shall be flashed with #951 fibered Eternamastic and shall be feathered at the edges for the water to flow over the various flashing details.
2. **Base Flashings:** Install the base flashing over the cant strip using 6" or 12" of #930 polyester fabric as needed. Saturate into a full coat of 3 gallons per 100 sq. ft. (per ply) of #911 to achieve full saturation. Terminate at least 2" above the cant and extend onto the deck at least 2".
3. **Wall Flashings:** Install the wall flashing using one full ply of #930 polyester fabric set into a full coat of 3 gallons per 100 sq. ft. (per ply) of #911, achieving full saturation. #930 polyester fabric shall extend over cant strip onto deck and continue up wall to terminate as necessary-- under counter flashing, reglets or wall cap flashing. Wall flashing shall extend out onto the deck at least 2" beyond the termination of the base flashing.
4. **Edge Flashings:** Replace gravel stops and metal edge where necessary. Where gravel stop is replaced, replace with low or no rise metal edge. Metal edge shall be nailed at 4" on center. Strip-in the metal with #930 polyester fabric and #951 fibered Eternamastic ensuring all the nails are completely covered. Where edge flashing is left in place, cut back roofing 2" from rise and strip-in with #930 polyester fabric and #951 fibered Eternamastic providing positive attachment of the metal edge to the new coating system.
5. **Roof Drains:** Remove clamping ring and clean all existing build-up from around the drains and sumps. Apply #951 fibered Eternamastic or #975 SEBS Elastomeric mastic in a three-course fashion across the entire drain/sump area. Extend the application into the drain bowl from center of drain onto the deck 6" beyond drain sump. Allow to cure. Replace clamping ring. The base coat application shall be applied overlapping onto the reinforced #951 fibered Eternamastic or #975 SEBS Elastomeric mastic and cut around the clamping ring.
6. **Curb Flashings:** All curb flashings shall be flashed with at least a 2" wide x 1/16" thick of #951 fibered Eternamastic.
7. **Fasteners:** Encapsulate all fasteners using #951 fibered Eternamastic with #930 polyester fabric, which shall be cut around all fasteners, so fabric lies flat.
8. **Penetrations:** #951 fibered Eternamastic along with #930 polyester fabric shall be applied around the base of the penetration, extending at least 4" onto the vertical and 4" onto the base. Embed a 6" width of #930 polyester fabric using additional #951 fibered Eternamastic as necessary to accommodate the shape of the penetration.
1. **Seams:** All seams and areas around roof protrusions (vents, scuttle hatches, etc.) are to be treated with #951 fibered Eternamastic along with #930 polyester fabric to achieve watertight seals in a three-course fashion (refer to flashing section for details). **Pitch-Pans:** Pitch pans shall be covered using #654 1-Part Pourable Pitch-Pan Sealant.
2. **Sleepers:** If any equipment is placed on sleepers, wood blocks or other types of loose supports, these will have to be removed during the coating/restoration process to access the areas underneath. After curing, the sleepers, blocks or supports should be placed on slip sheets to avoid damage to the coating system.
9. **Pitch Pans:** Pitch pans shall be Pitch pans shall be filled using #654 1-Part Pourable Pitch-Pan Sealant and sealed using #951 fibered Eternamastic with #930 polyester fabric in a three-course fashion (refer to flashing section for details).
10. **Condensation Lines:** Condensation lines shall be installed from HVAC units to gutters as part of the overall drainage system. The type of piping used for condensation lines may vary depending on local building codes.
11. **Skylights & Curbed AC Units:** Curb skylights shall be treated in the same fashion as curb flashings. The perimeter shall be flashed with a 4" of #930 polyester fabric along with #951 fibered Eternamastic. The 4" of #930 polyester fabric is divided 2" evenly between the vertical and the roof surface. All exposed skylight fasteners shall be encapsulated with #951 fibered Eternamastic.

12. Inspect Preliminary Work / Flashing Details for problem areas (e.g., gaps, cracks, fish mouths, air pockets, etc.)

BASE COAT APPLICATION

1. Components of this Restoration System are applied using a brush, roller, trowel, or airless spray.
2. Over the properly prepared surface, apply a coat of #360 asphalt emulsion at a rate of 6 gallons per 100 square feet.
3. Immediately following and starting at the low edge of the roof, embed a full width of #930 polyester fabric continuing up the roof with full width sheets stopping 6" above the cant Strip.
4. Do not walk on the polyester during application or while emulsion is still wet. This can cause displacement of the emulsion.
5. Do not apply or submerge the #930 polyester fabric into the #360 emulsion.
6. Allow for proper curing time 24-72 hours (weather dependent).
7. Rinse the #360 emulsion, removing any light oils.
8. Note: Temperature, coating type, applicator technique, substrate, as well as other factors will affect coating thickness. Verify proper coating application rates per specification table on page 1.
9. Allow the entire base coat surface to dry completely prior to proceeding to apply the acrylic coat.

PIPE FLASHINGS & PENETRATIONS – SURFACE TREATMENT

After the base coat is cured and prior to the application of the topcoat:

1. Apply #951 fibered Eternamastic and #930 polyester fabric in a three-course fashion to all pipe flashings, cones, exposed metal joints and flanges.
2. Apply #951 fibered Eternamastic to all corners at curbs and skylight flashings or any area that has been previously repaired with roofing mastic.

PONDED AREAS & DRAINS APPLICATION

After the base coat is cured and prior to the application of the topcoat:

1. All areas around drains and scuppers shall be treated with a second layer of #930 polyester fabric saturated in the #911 Eternalastic coating.
2. Waterways and any locations where water ponds for more than 48 hours shall be treated with a second layer of #930 polyester fabric embedded in the #911 Eternalastic coating. The #930 polyester fabric shall extend 12" beyond the designated ponding area or as necessary to extend beyond the drain sump. In this area, saturate the #930 polyester fabric into a 3 gallon per 100 sq. ft. application of #911 and brush lightly to achieve full saturation without wrinkles or voids.

INTERMEDIATE COAT APPLICATION

1. A visual inspection of the entire base coat should be performed to confirm an acceptable surface / substrate to accept the topcoat. Any deficiencies must be repaired prior to application of the topcoat.
2. Apply the intermediate coat with #911 Eternalastic coating at an application rate of 1.5 gallon per 100 sq. ft. to achieve required Dry Film Thickness (DFT) of 12.5 mils or 24 mils wet.
3. The intermediate coat shall completely cover the base coat including expansion joint covers, parapets and flashings.
4. Allow a minimum of 12 hours drying time prior to any foot traffic or inspections. (Weather dependent).

TOPCOAT

1. Apply the #911 Eternalastic topcoat perpendicular from the intermediate coat in a 'cross hatch' manner at an application rate of 1.5 gallon per 100 sq. ft. to achieve required DFT of 12.5 mils or 24 mils wet.
2. The minimum DFT of the entire acrylic coat must be 25 mils.
3. Allow a minimum of 12-24 hours drying time before allowing any foot traffic or inspections.
4. After curing, inspect for defects and repair as necessary.
5. Pay special attention not to overspray, which can texture or discolor adjoining finished sections.
6. Note: Total minimum Restoration System Dry Film Thickness for the entire restoration system shall be 68 mils nominally.

INSTALLATION OF WALKWAYS (OPTIONAL):

In high-traffic areas and around mechanical equipment, walkways should be installed to protect the coating system from damage.

FIELD QUALITY CONTROL

1. Maintain Job Progress Report / Daily Log of work completed as required to assure installation is in accordance with manufacturer requirements.
2. Provide on-the-job inspections, technical assistance and material application guidance as may be necessary to complete roofing material application in accordance with Tropical Roofing Products warranty requirements.
3. Monitor the roof for 5-7 days after application. If rainfall occurs, any ponding water should carefully be removed as soon as possible to ensure proper curing in these areas.

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JOB COMPLETION

1. Inspect completed coating system and correct all defects to meet the specification and/or warranty requirements.
2. **Transparent or Thin Areas:** If areas appear to be undercoated, recoating may be needed to ensure final thickness to meet the Tropical Roofing Products specifications Total Dry Mils.
3. **Delamination:** Verify that all coated areas appear to be fully adhered to the substrate. A visual inspection looking for typical signs of poor adhesion such as flaking, blistering etc. should be made. Re-priming and/or recoating will be required if such areas are apparent.
4. **Pin Holing:** Certain job or site conditions may result in pin holing or out gassing during curing or cause pin holes in the substrate. Again, a visual inspection looking for typical signs of out gassing such as excessive pockmarks, pinholes etc. should be done.
5. **Delaminating:** Delamination is caused when water-based coatings freeze, or solvent entrapment in solvent-based coatings occurs. The coating surface may exhibit extreme wrinkles, small blisters and may have loss of adhesion. These areas will not "self-heal" and must be removed, power washed, and a new coating must be applied.
6. **Texture Finish:** Heavy patterns, blistering, "skinning," etc. may appear in the final finish. These may indicate that the coat is too thick, a build-up has occurred or another application problem. Check with Tropical Roofing Products Technical Representative for remedial advice.
7. A Tropical Roofing Products Technical Representative will inspect the finished system and notify the contractor with any defects in the application.
8. Restrict construction traffic and equipment movement on the completed coating system to only essential personnel. Provide appropriate protection against traffic and construction activities on completed roofs. Damage to the roof by other trades shall not be the responsibility of Tropical Roofing Products.

HOUSEKEEPING ITEMS

1. Contractor shall take photographs of representative roof areas, including detail work before work commences, after the surface has been properly prepared, after all flashing and detail work has been performed, and after the application of the #911 Eternalastic coating membrane.
2. Installer shall provide the following support for on-site inspections by a representative from Tropical Roofing Products (list is not comprehensive):
   a. Representative from the contractor's company who has authority to make binding decisions.
   b. Required means to access all areas of the treated roof.
   c. Previous photographs of the roof.
3. Access must be granted to all areas of the restored roof system.
4. Installer shall take special care when moving spray hoses and other equipment on the roof to prevent damage to the flashing work and encapsulated fastener heads. Also, all spray equipment shall remain on the ground for the duration of the job.
5. If there will be an extended period (6 months or greater) between application of base and finish coats, the use of #911 Eternalastic (white) for the base coat (versus gray) is recommended. The base coat shall be thoroughly cleaned before applying the finish coat.

REPAIRS

1. In the event that the #911 Eternalastic membrane is damaged or punctured, repairs are to be performed using #951 fibered Eternamastic along with #930 polyester fabric (where necessary) as follows:
   a. Damaged areas are to be cut, cleaned, and dried.
   b. Apply #951 fibered Eternamastic and feather out onto the existing #911 Eternalastic membrane with a minimum of 2-4 inches beyond the existing coating.
   c. If a new penetration area has been cut, embed #930 polyester fabric into the #951 fibered Eternamastic according to standard Tropical Roofing Products specifications.

CLEAN UP

1. Remove masking and protection tapes.
2. The HVAC vents and units can be opened and restarted once the spray operation is complete.
3. Remove all roof related trash and debris from jobsite.
4. Dispose of containers in accordance with local regulations.
5. For application questions, please contact Tropical Roofing Products at 1-877-827-2622.

ENGINEERING

Tropical Roofing Products does not practice Engineering or Architecture. Any review of the building's construction or inspection of roof plans or inspection of the building's structural roof deck by Tropical Roofing Products representatives shall not constitute any warranty by Tropical Roofing Products of such plans, specifications, or construction. Any roof inspections are solely for the benefit of Tropical Roofing Products.

MAINTENANCE

To maintain your warranty coverage and to ensure that your roof will continue to perform to its fullest during the entire time of the warranty, always adhere to Tropical Roofing Products Care and Maintenance program and guidelines.

IMPORTANT:

The applicators strict adherence to this specification is the only way Tropical can ensure that this product will perform as intended. Accordingly, any changes made to specifications must be reviewed, approved in writing and signed by Tropical Roofing Products Director of Manufacturing & Technical Services prior to application.

End of Section