AGED (EPDM, TPO, CSPE-HYPALON™, PIB) SINGLE-PLY (THERMOSET) MEMBRANE RESTORATION SYSTEM APPLICATION SAMPLE DESIGN GUIDELINE

ACRYLIC

Elastek® #127 Solar One Plus

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ASPHALT RESTORATION – NEW OR AGED BUR AND MODIFIED BITUMEN GUIDELINE – ACRYLIC SYSTEM

PART 1 – GENERAL

1.01 DESCRIPTION

A. This guideline includes the installation of liquid applied acrylic coating to repair, restore and preserve aged thermoset single-ply membrane roofs. The process effectively repairs cracks, splits, crazing, chalking, shrinking and defects in the aged membrane, protects the membrane from further degradation, and renews the weathered surface to extend the useful life of the roof.
B. Work included is labor, materials, equipment and accessories and related services to complete the application in accordance with guideline and details as approved by ITW POLYMERS SEALANTS NORTH AMERICA, INC.
C. Work excluded is replacement of roof accessories such as drains, vents and other penetrations and structural roof repair.

1.02 QUALITY ASSURANCE

A. Manufacturer Qualifications: ITW POLYMERS SEALANTS NORTH AMERICA, INC. will furnish upon request, certification the material meets the physical properties stated in this guideline.
B. Contractor Qualifications: All work to be completed must be done by an ITW POLYMERS SEALANTS NORTH AMERICA, INC. preferred applicator.
C. No deviation from this guideline will be accepted without prior written approval of ITW POLYMERS SEALANTS NORTH AMERICA, INC.

1.03 SUBMITTALS

A. Warranty pre-installation notifications are required prior to the installation of the warranted systems.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver material in original, unopened packages and containers.
B. Containers are to be labeled with manufacturer's name, product name, description, and identification.
C. Store materials in a dry area between 40˚F (4.45°C) and 80˚F (26.7°C) and protect from water and direct sunlight.
D. Any materials damaged in handling or storage must not be used.
E. Deliver SDS for each product. Consult SDS and Technical Data Sheet for each product used before beginning work.

1.05 JOB CONDITIONS (CAUTIONS AND WARNINGS)

A. All mechanical equipment, vents, skylights, etc., should be in place before the roofing system is installed.
B. Mechanical units (blowers, HVAC) should be prevented from distributing solvent fumes into the building.

C. Coatings should be protected from traffic and other abuse until completely cured and installation is complete.
D. Application of coatings with spray equipment may require some masking and possible erection of wind screens to prevent over-spray and drift damage. Protect surfaces of unrelated areas from coatings and over-spray possibility.
E. Application shall proceed to dry, clean surfaces only. In planning work consider environment and weather-related conditions such as frost, mist, dew, condensation, humidity, and temperature. Surface temperature should be above 45˚F (7.2°C), rising, and stay above 40˚F (4.4°C) long enough for initial cure to occur, also the surface temperature should not exceed 100°F (37.7°C). Moisture should not be imminent.
F. Sufficient safety belts and lines should be provided. A wet surface or a surface that is not thoroughly cured can be very slippery. All work environments should comply with current OSHA regulations.

1.06 WARRANTY

A. ITW POLYMERS SEALANTS NORTH AMERICA, INC. warrants that materials provided are free from defects in manufacturing and will replace any material found to be defective.
B. ITW POLYMERS SEALANTS NORTH AMERICA, INC. /Contractor Coating System Warranty is available through preferred contractors and at a cost. Consult ITW POLYMERS SEALANTS NORTH AMERICA, INC. for further details of the Warranty Program.

PART 2 - PRODUCTS

2.01 GENERAL

A. The components of the coating system are to be products of ITW POLYMERS SEALANTS NORTH AMERICA, INC., or products approved by ITW POLYMERS SEALANTS NORTH AMERICA, INC. as compatible; or approved equal.

2.02 PRIMER – ERSYSTEMS® SINGLE PLY PRIMER

A. See Technical Data Sheet

2.03 FINISH COAT – ELASTEK® # 127 SOLAR ONE PLUS

A. See Technical Data Sheet

2.04 SEAM REINFORCEMENT: ERSYSTEMS® FABRIC FACED BUTYL TAPE

A. See Technical Data Sheet

2.05 FABRIC REINFORCEMENT: POLYESTER KNIT FABRIC (TIE-TEX272)

B. See Technical Data Sheet

2.06 RELATED MATERIALS

A. Gap/Joint Sealant: **PERMATHANE® SM7108**
B. **ERSYSTEMS® 2100 MS ADHESIVE SEALANT**
C. Detail Sealant: **ELASTEK #103 CRACK & JOINT**

D. Metal Primer: **ERSYSTEMS® ACRYLIC METAL RUST PRIMER**
E. **ERSYSTEMS® QUICKET**: Pourable self-leveling repair sealant. Quickly builds cricket and a pourable sealer.
F. Alternative Finish Coat: **ELASTEK® SOLAR MAGIC** (Standard Warranty). Only a "Standard Warranty" is available if this product is used.

NOTE: See Product Data Sheet for additional information and detailed instruction on each product.

PART 3 - APPLICATION

3.01 SUBSTRATE INSPECTION

A. A proper substrate shall be provided to receive the ITW POLYMERS SEALANTS NORTH AMERICA, INC. coatings.
B. The roof surface must be clean, dry, and free of ponding water, and over-all structurally sound.
C. Inspect the roof surface for cracks, blisters, brittleness and alligatoring. Inspect flashing details. Determine which areas may not be watertight and in need of repair.
D. Inspect the substrate system for moisture content, and determine if areas need to be replaced.
E. If a sound, stable, well-secured surface cannot be ensured, the roof is not acceptable to receive the Coating Restoration System.
F. Perform an adhesion test of the #127 SOLAR ONE PLUS to a representative and properly prepared area of the aged single-ply membrane. Include a test area with SINGLE PLY PRIMER as a prime coat. Contact ITW POLYMERS SEALANTS NORTH AMERICA, INC. Tech Service for details of adhesion test.

3.02 SURFACE PREPARATION & CLEANING

A. EPDM & PIB

1. All penetrations up to 12" shall be re-flashed with pre-molded boots. All other penetrations shall be re-flashed using Uncured EPDM Flashing membrane. Flashing shall extend a minimum of 4" onto EPDM membrane and bonded to any substrate other than EPDM with Bonding Adhesive and EPDM to EPDM bonds requires Butyl Splice Adhesive.
2. All deteriorated form flashing at all vertical transitions shall be secured by using a termination bar at the base or a reinforced EPDM strip per repair methods described in the MRCA manual for repair of shrinking EPDM, attached as an addendum to this guideline. This detail will serve all areas of EPDM shrinkage at vertical transitions.
3. Deteriorated flashing and membrane shall be repaired with Fabric Faced Butyl Tape whenever possible. Areas shall be cleaned and primed with SINGLE PLY PRIMER prior to Fabric Faced Butyl Tape. Flashings may also be cleaned, primed with SINGLE PLY PRIMER and coated with #127 SOLAR ONE PLUS at 25 wet mils followed by embedding polyester fabric into the coating in a wrinkle free manner. Flashing shall extend a minimum of 4" onto the single-ply membrane and the coating shall extend beyond the fabric by 4".
4. All field seams at end laps and side laps shall be re-sealed. Areas shall be cleaned and primed with SINGLE PLY PRIMER a minimum of 4" beyond area to receive 5" Fabric

Faced Butyl Tape. Fabric Faced Butyl Tape shall be used on all flat surfaces (round all corners on the tape) and Uncured EPDM Cover Tape may be used at corners, walls, transitions or wherever movement is possible. All tapes shall be placed into position and rolled with a 2" silicone roller.

5. All factory seams shall be probed. Any rubber, which is loose at the factory seams, shall be trimmed back with knife. That area shall then be cleaned and stripped in with Fabric Faced Butyl Tape as described above.
6. All patches shall be checked. Loose patches shall be replaced. Loose caulk shall be brushed smooth, loose rubber edges shall be trimmed, and Fabric Faced Butyl Tape applied at perimeter of patch.
7. If patch is weathered or repaired with asphalt it shall be cut out, a new patch installed, skirting the repair hole by a minimum of 4" and sealed with Seam Adhesive followed by EPDM Cover Tape application at perimeter of the patch to provide a double seam.
8. Breaks, tears, cuts and any areas where the EPDM is deteriorated, shall be repaired by cutting out the deteriorated area, and patching with new EPDM membrane, adhesive and EPDM Cover Tape as described above. Small punctures may be repaired with a patch of EPDM Cover Tape.

B. TPO & CSPE (Hypalon™):

1. Repair deteriorated flashings, cracks, and other surface imperfections with SINGLE PLY PRIMER, #127 SOLAR ONE PLUS, polyester fabric and ELASTEK #103 CRACK & JOINT Acrylic Sealant or repair may also be made with SINGLE PLY PRIMER and Fabric Faced Butyl Tape of 5" width.
2. Deteriorated flashing and membrane shall be repaired with Fabric Faced Butyl Tape whenever possible. Areas shall be cleaned and primed with SINGLE PLY PRIMER prior to Fabric Faced Butyl Tape. Flashings may also be cleaned, primed with SINGLE PLY PRIMER, and coated with #127 SOLAR ONE PLUS at 25 wet mils followed by embedding polyester fabric into the coating in a wrinkle free manner. Flashing shall extend a minimum of 4" onto the single-ply membrane; and the coating shall extend beyond the fabric by 4".
3. As an alternate to repairing flashing with tape, fabric, or coating, sprayed Polyurethane foam may be used as an alternate. The surface must be cleaned and primed prior to foam application.
4. All field seams and patches shall be probed. Repair deficient seams by cleaning, re-welding, priming with SINGLE PLY PRIMER and cover with Fabric Faced Butyl Tape of 5" width - round all corners on tape. All Fabric Faced Butyl Tape shall be placed into position and rolled with a 2" silicone roller.

C. Insulation fasteners which are backing out shall be repaired by retightening or moving to the side to the point of grabbing firmly to the substrate. Single-ply membrane shall then be patched with a 6" square of Fabric Faced Butyl Tape as described in 3.02B above.

D. Thoroughly clean the single-ply membrane to remove all dirt, residue and foreign material from the surface. Pressure washing of 1500-2000 psi is typically sufficient. TSP may be

used as a detergent if necessary to remove dirt; brushing with a firm bristle broom may be required in some areas. Surface of the membrane is to be rinsed well and allowed to dry. Mechanical scrubbers utilizing low volumes of water may also be used to remove excessive dirt, oil contamination, mildew, etc.

E. If mildew exists on the single-ply membrane surface, remove by washing with a solution of detergent and bleach (1 tablespoon of laundry detergent with 1-2 pints of bleach in 1 gallon of water). Brush or scrub and rinse thoroughly.

F. If single-ply membrane has been leaking, repair or replacement of insulation or substrate materials may be required to provide a sound system.

G. Take action to ensure proper drainage on the roof exists.

3.03 DRAINAGE

A. Areas exhibiting a lack of positive drainage or ponding water will adversely affect performance of any roofing system and will be excluded from warranty. Where positive drainage does not exist, water removal from the roof surface must be facilitated by lowering drains and/or taking other corrective action. Additional maintenance inspections, repair work, the addition or use of primers and/or higher system mil-build may be required in these areas to extend coating life.

3.04 COATING APPLICATIONS: (Note: Total dry mil minimums not acceptable uniformly over entire field)

A. Priming: SINGLE PLY PRIMER shall be applied at the rate of 1/3 gallon per SQ. (approximately 300 sq. ft. per gallon) dependent on the surface porosity. Under normal drying conditions, 10-30 minutes will be required prior to recoating.

B. Repair deteriorated areas: #127 SOLAR ONE PLUS shall be applied to flashings, seams, cracks and substrate areas requiring repair at the rate of 1.5 to 2 gallons per SQ. (24-32 wet mils). #127 SOLAR ONE PLUS shall be applied over the Fabric Faced Butyl Tape in a 10" to 12" width; and over the polyester fabric repaired areas (see 3.02B) sufficient to cover the repair. Under normal curing conditions, repaired areas will require a day to cure prior to recoating.

C. ERSYSTEM® #127 SOLAR ONE PLUS

First Coat: #127 SOLAR ONE PLUS is applied to the properly prepared surface at the rate of 1 gallon (3.79 LITER) per 100 square feet in one pass. Rough and irregular surfaces may require a heavier application. Back rolling will assist in acquiring a uniform membrane thickness.

Second Coat: After allowing the #127 SOLAR ONE PLUS first coat to cure, a second coat of #127 SOLAR ONE PLUS will be applied at the rate of 1.5 gallons (5.68 liters) per 100 square feet in one pass (total dry mils: 21, min 19). Finish coat may be spray applied or rolled on perpendicular to the base coat application.

A. Contact ITW POLYMERS SEALANTS NORTH AMERICA, INC. Technical Department for warranty requirements.

PROTECTION AND CLEAN-UP

PROTECTION

A. The roof system and all components must be protected from all other trades at the job site.
B. All damage to the system must be repaired to comply with ITW POLYMERS SEALANTS NORTH AMERICA, INC. guidelines prior to final inspection for warranty approval. The cost of all related repairs will be borne by the trades and/or subcontractors responsible for the damages.

CLEAN-UP

A. Site clean-up is the responsibility of the contractor.
B. All debris, containers, materials, equipment, and protection materials must be removed from the premises and properly disposed of. All work and storage areas must be in an undamaged and acceptable condition upon completion of clean-up.