



## Asphalt Restoration Aged BUR and Modified Bitumen Sample Design Guideline

# POLYURETHANE 300

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**ASPHALT RESTORATION AGED BUR AND MODIFIED BITUMEN SAMPLE DESIGN GUIDELINES – URETHANE****PART 1 – GENERAL****1.01 DESCRIPTION**

- A. This guideline includes the installation of the liquid applied acrylic asphalt primer and the installation of the liquid applied polyurethane coating system to repair and restore aged Modified Bitumen single-ply membrane roofs and aged smooth asphalt BUR. The process effectively repairs cracks, splits and defects in the aged roof, protects the Modified Bitumen or BUR 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 guidelines and details as approved by ITW POLYMERS SEALANTS NORTH AMERICA.
- 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 preferred applicator.
- C. No deviation from this guideline will be accepted without prior written approval of ITW POLYMERS SEALANTS NORTH AMERICA.

**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 above 40°F (4.45°C) and below 80°F (26.7°C) 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. Temperature should be above 40°F (4.45°C), more than 5°F above the dew point and rising, for best application results.
- 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 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/Contractor Coating System Warranty is available through preferred contractors and at a cost. Consult ITW POLYMERS SEALANTS NORTH AMERICA 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 or products approved by ITW POLYMERS SEALANTS NORTH AMERICA as compatible; or approved equal.

#### **2.02 ERSYSTEMS® POLYURETHANE 300 AROMATIC BASE COAT (Gray)**

- A. See Technical Data Sheet

#### **2.03 ERSYSTEMS® POLYURETHANE 300 ALIPHATIC FINISH COAT (White)**

- B. See Technical Data Sheet

#### **2.04 ERSYSTEMS® ACRYLIC ASPHALT PRIMER**

- A. See Technical Data Sheet

#### **2.05 ERSYSTEMS® HER: POLYURETHANE DETAIL SEALANT**

- A. See Technical Data Sheet

#### **2.06 FABRIC REINFORCEMENT: TIE-TEX T272 POLYESTER KNIT FABRIC**

- B. See Technical Data Sheet

## 2.07 RELATED MATERIALS

- A. Gap/Joint Sealant: **PERMATHANE® SM7120 PU**
- B. Metal Primer: **ERSYSTEMS® POLYURETHANE METAL RUST PRIMER.**
- C. **ERSYSTEMS® QUICKET:** Pourable self-leveling repair sealant. Quickly builds cricket and a pourable sealer.

**NOTE:** See Technical 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 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 alligating. 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 ACRYLIC ASPHALT PRIMER and POLYURETHANE 300 AROMATIC BASE COAT to a representative and properly prepared area of the Aged BUR or Modified Bitumen membrane. Consult ITW POLYMERS SEALANTS NORTH AMERICA if a primer is needed. Contact ERSystems® Tech Service for details of adhesion test.

### 3.02 SURFACE PREPARATION & CLEANING

- A. Prepare the roof surface by high pressure washing with water at a pressure of 2,000 p.s.i. to 3,000 p.s.i. to remove dirt, miscellaneous soils, oily films, and the brown chalky residue which develops on the surface of many smooth Modified Bitumen membranes over time.
- B. Repair deteriorated flashing, cracks, and other surface imperfections with POLYURETHANE 300 AROMATIC BASE COAT, polyester fabric, and PERMATHANE® SM7120 PU.
- C. Repair major substrate defects and replace with appropriate materials to provide a sound surface to which the coating may be applied.
- D. Repair and prepare incidental metal on the roof by priming with POLYURETHANE METAL RUST PRIMER.
- E. Take action to ensure proper drainage on the roof exists.

### 3.03 SEAMS AND LAPS

- A. To help maintain the monolithic integrity of our restoration system we recommend treating all membrane seams and laps.
- B. H.E.R. shall be applied to seams and laps at the rate of 60 mils in a 3"-4" width.

- Allow to cure overnight prior to coating.
- C. Deeper gaps and voids can also be detailed with 2100 MS ADHESIVE SEALANT.  
Allow to cure overnight prior to coating.

### 3.04 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.

### 3.05 COATING APPLICATIONS: (Total dry mil minimums not acceptable uniformly over entire field)

- A. Repair deteriorated areas: POLYURETHANE 300 AROMATIC BASE COAT shall be applied to flashings, cracks and substrate areas requiring repair at the rate of 1.5 gallons (5.68 liters) per 100 square feet. (25 wet mils). Polyester fabric of the appropriate width shall be embedded into the wet coating and brushed or rolled to be wrinkle-free. A second coat of POLYURETHANE 300 AROMATIC BASE COAT of approximately .5 gallon (1.89 liters) per 100 square feet is then applied over the fabric. Under normal curing conditions, repaired area will require a day prior to re-coating.
- B. Option A – POLYURETHANE 300 ALIPHATIC FINISH COAT (White)

PRIMER COAT: ACRYLIC ASPHALT PRIMER is applied to the properly prepared surface at the rate of .75 - 1.0 gallon (2.84-3.79 liters) per 100 square feet in one pass. Allow to cure

BASE COAT: POLYURETHANE 300 AROMATIC BASE COAT is applied to the properly prepared surface at the rate of approximately 1.5 gallons (5.68 liters) per 100 square feet in one pass. Rough and irregular surfaces may require a heavier application. The POLYURETHANE 300 AROMATIC BASE COAT can be spray applied or applied by squeegee or roller in 1 pass at a minimum of 1 – 1.5 gallon (3.79-5.68 liters) per pass. Back rolling will assist in acquiring a uniform membrane thickness.

FINISH COAT: After allowing the first coat of POLYURETHANE 300 AROMATIC BASE COAT to cure, POLYURETHANE 300 ALIPHATIC FINISH COAT (White) is applied to the properly prepared surface at the rate of approximately 1 gallon (3.79 liters) per 100 square feet in 1 pass at a minimum of 1 gallon (3.79 liters) per 100 square feet per pass (total dry mil 37, minimum 32).

- D. Granule application - Roofing granules shall be applied into a tack coat of Finish Coat. 35 - 40 pounds of No. 11 Roofing granules shall be immediately embedded into 0.5 - .75 gallons (1.89 – 2.84 liters) per 100 square feet of Finish Coat. Granule application should occur within 2 to 3 minutes of coating application and should be evenly distributed over the horizontal surface. Excess granules may be removed after the system has cured.
- E. Consult ITW POLYMERS SEALANTS NORTH AMERICA 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 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.