

## POLYURETHANE COATING FOR RESTORING MODIFIED AND SMOOTH BUILT UP ROOFING MEMBRANES (07 56 40)

1. All applicable parts of the General Roofing Specification (07 30 00) shall be included within this section.
2. Assessment of Polyurethane Roof Coating Systems
  - 2.1. A Polyurethane Roof Coating System shall be determined as failed when any of the following conditions exist and removing and correcting the deficiencies would be more than 50% of the cost to remove the existing roof system and install a new roof system.
    - 2.1.1. When the Polyurethane Roof Coating System loses adhesion to the substrate to which it has been applied or between application of coats of coating.
    - 2.1.2. When the Polyurethane Roof Coating System surface cracks due to faulty products within the Polyurethane Roof Coating System or improper installation of the Polyurethane Roof Coating System.
    - 2.1.3. When the Polyurethane Roof Coating System allow water to pass through it and no longer serves to protect the existing roof system from moisture intrusion.
    - 2.1.4. When coating blisters are present on a sizable portion of the roof.
  - 2.2. Polyurethane Roof Coating Manufacturer shall submit the following documents to the Registrant Professional for review to have their Polyurethane Roof Coating being specified:
    - 2.2.1. Product data and safety data sheets.
    - 2.2.2. Test report from an independent ASTM accredited testing facility validating that the roof coating complies with ASTM D6947.
    - 2.2.3. Sample copy of Polyurethane Roof Coating Manufacturer's ~~20~~20-year no dollar limit (NDL) warranty stating that the roof coating will comply with all labor and materials to repair or remove and replace all and any roofing materials that leak or develop failures due to defective coating or faulty installation for the length of the warranty.
    - 2.2.4. Fire classification for the proposed coating comply with ASTM E108 per Underwriters Laboratories or another ASTM recognized fire testing facility.

- 2.2.5. A list of five (5) projects in Arizona where the proposed coating has been installed, including project name, project size, address, owner contact, and year applied.
        - 2.2.6. A letter from the Polyurethane Roof Coating Manufacturer stating that the Roofing Contractor is an authorized applicator of the roof coating system.
3. Roof Slope Use, as defined in Part 7, General Roofing Specification (07 30 00).
  - 3.1. The Polyurethane Roof Coating can be used on the following roof slopes:
    - 3.1.1. Low Slope
    - 3.1.2. Transitional Slope
    - 3.1.3. High Slope, in accordance with the manufacturer's limitations and testing data.
  - 3.2. The recommended minimum slope for Polyurethane Roof Coatings is  $\frac{1}{4}$ " per vertical unit 12 inches per unit horizontal when possible. The absolute minimum slope for elastomeric silicone coatings shall be "positive roof drainage". Ponding water is not acceptable.
4. Repair or replacement of roof, not to contradict Part 6, General Roofing Specification (07 30 00)
  - 4.1. If an existing roof system does not meet the criteria established to be acceptable to receive a new Polyurethane Roof Coating System, then the replacement or overlay of the existing roof system with a new roof system is required.
  - 4.2. If a Polyurethane Roof Coating System is beyond repair, it shall be either removed or isolated with a recovery board before new roof system is installed.
  - 4.3. Additional information for what constitutes a failed Polyurethane Roof Coating System can be found in Part 2 of this Section.
5. Demolition Requirements for Polyurethane Roof Coating Systems
  - 5.1. All items as found in Part 10, General Roofing Specification (07 30 00).
  - 5.2. No special demolition requirements for Polyurethane Roof Coating Systems.
6. Back of Parapet Wall Treatment

- 6.1. Polyurethane Roof Coating System on the back of parapet walls shall be spray or roller applied as required within this section and by the Polyurethane Roof Coating Manufacturer.
  - 6.1.1. Height of Coating System to the back of parapet walls shall be determined by the type of parapet wall surface. Coating may be terminated beneath the metal wall counterflashing or extend up the back of the parapet wall. If the back of the parapet wall is stucco or a synthetic wall system, the coating shall be either terminate beneath the metal parapet wall counterflashing or extend up the full height of the back of the parapet wall.
  - 6.1.2. At locations where the Polyurethane Roof Coating system terminates less than the full height of the parapet wall, the back of the parapet wall surface shall be waterproofed with materials suitable to the substrate.
7. High Wall Treatment
  - 7.1. Polyurethane Roof Coating system shall be spray or roller applied to properly prepared high wall substrate.
  - 7.2. Height of coating system on high walls is unlimited.
  - 7.3. If the Polyurethane Roof Coating system can be seen from the ground, custom matched color Polyurethane Roof Coating shall be installed to match the surrounding substrate. If a color match is not practical, the Polyurethane Coating system shall be terminated at a height that is not visible from the ground.
  - 7.4. Areas where the Polyurethane Roof Coating system does not extend the full height of the high wall, the high wall shall be waterproofed with materials compatible with the substrate.
8. Components of Cool Roof Acrylic Coating System
  - 8.1. Biodegradable Cleaner (where required by Manufacturer)
    - 8.1.1. Biodegradable cleaner to be used where required to ensure the existing roof surface is in a clean condition to receive the Polyurethane Roof Coating system.
  - 8.2. Fabric Adhesive and Bleed Block Primer (where required by Manufacturer)

- 8.2.1. Fabric Adhesive and Bleed Block Primer to be used on asphaltic surfaces to increase the adhesion of the Polyurethane Roof Coating system and to prevent asphalt bleed from the existing roof system through the Polyurethane Roof Coating system.
- 8.3. Primer to Other Substrates
  - 8.3.1. Primer as required by Polyurethane Roof Coating Manufacturer to provide greater adhesion to aluminized asphalt, metal, concrete masonry units (CMU), or other surfaces to receive the Polyurethane Roof Coating system.
- 8.4. Self-flashing SPF Roof Insulation (Optional Reinforcement Flashing)
  - 8.4.1. Self-flashing SPF Roof Insulation is an option to be used to seal parapet walls, pipe penetrations, curbs, and other roof top penetrations. SPF shall be UL 723 fire rated and 50 psi compressive strength.
- 8.5. Construction Grade Sealant
  - 8.5.1. Polyurethane sealant, as approved by the Polyurethane Roof Coating Manufacturer, for in filling cracks, splits or voids and for sealing reglet counterflashing
- 8.6. Reinforcement Fabric
  - 8.6.1. Stich bonded polyester fabric, as supplied by the Polyurethane Roof Coating Manufacturer, for reinforcement at drains / scupper areas, valley lines, pipe penetrations, curbs, split seams, flashings, tears, perimeter areas or for the full reinforcement of the Polyurethane Roof Coating System where specified.
- 8.7. Fluid Applied Polyurethane Sealant
  - 8.7.1. Polyurethane sealant to be used as an option to stich bonded fabric on certain detail areas, leveling small rough textured areas and for reinforcing metal flanges at drip edges.
- 8.8. Polyurethane Roof Coating
  - 8.8.1. Polyurethane Roof Coating shall be a single component moisture cure product that is fire classified by Underwriters Laboratories or a recognized fire testing agency to comply with ASTM E108 Class A or

Class B as required. The Polyurethane Roof Coating shall meet all requirements of ASTM C957; ASTM D6947 or ASTM D7311 and comply with the following physical property requirements:

Volume Solids 80% Content Minimum SBV

350% Minimum Elongation

2100 PSI Tensile Strength

Greater than 360 lbs / inch tear resistance

Adhesion Minimum 2.0 pli

- 8.8.2. No private label coating manufacturers allowed.
- 8.8.3. The Polyurethane Coating System shall have a minimum ten (10) year, no dollar limit (NDL) material and labor warranty to be provided by the Polyurethane Roof Coating Manufacturer.
- 8.8.4. The minimum dry mil thickness of the Polyurethane Roof Coating shall be 35 mil or greater if required by the Coating Manufacturer for a ~~ten~~ twenty (~~10~~20) year no dollar (NDL) manufacturer warranty.
- 8.8.5. The Polyurethane Roof Coating manufacturer's guide specification for the proper repairs of the existing roof system, surface preparation and installation of the Polyurethane Roof Coating system components shall be considered an integral part of this Section.

#### 9. Closeout Documents

- 9.1. All items found in Part 16, General Roofing Specification (07 50 00).

#### 10. Preventive Maintenance Criteria

- 10.1. All items found in Part 17, General Roofing Specification (07 50 00).
- 10.2. Roof Coating manufacturer shall provide District maintenance personnel training in the proper inspection and housekeeping procedures on an annual basis for the entire warranty period. Any deficiencies observed during the annual inspection shall be documented and reported in writing to the District for either warranty repair or third-party damage repair.

#### 11. Budget Cost Range

11.1. This part shall apply only to SFB budgeting and economic projections and analysis. Not to be used for anything else

11.2. Budget Cost Range Polyurethane Roof Coating Restoration

11.2.1. 10 Year Manufacturer NDL \$5.00 - \$8.00 per square foot (Basis of Design)

11.3. Budget Life Cycle Costs

11.3.1. Roof Manufacturer to provide no cost inspection on an annual basis for the term of the warranty.

11.3.2. Roof Coating System Maintenance to clear the roof of debris and repair minor nicks or damage to the roof system = .01 per square foot per year.

11.3.3. Roof Coatings are sustainable and can be re-coated after the warranty period expires. Re-coating budget is \$3.50 - \$5.50 per square foot to receive a new Roof Coating Manufacturer 10 Year NDL Warranty.

#### ~~12. Expected Roof Coating End of Life~~

~~12.1. A properly installed and maintained Polyurethane Roof Coating System can be sustained at the end of the warranty period by making any repairs needed and installing additional coating to receive a new Roof Coating Manufacturer 10 Year NDL Warranty. Based on local roof coating performance of greater than 20 years, the expected End of Life (EOL) of a Polyurethane Roof Coating System with recoats at the 10-15 year time frame is 30 years.~~

Note: This type of coating system has failed miserably in the past. This system should be considered only on a project-by-project basis in the Scope Confirmation Meeting.

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