

Installation Guide Specification For Coating BUR & Mod Bit Roofs

I. GENERAL

1.01 SUMMARY

- A. Provide labor, materials, equipment, and supervision necessary to install Spray-Applied Elastomeric Acrylic Coating System as outlined in this specification to preserve and extend the life of built-up and modified bitumen roofing membranes.
- B. NCFI's application instructions for each product used are to be considered part of these specifications and should be followed at all times.

1.02 SUBMITTALS

- A. Submit product data sheets and literature verifying the physical properties of materials.
- B. Submit material safety data sheets.

1.03 QUALITY ASSURANCE

- A. Supplier Qualifications: The ENDURATECH Premier Roofing System for preserving built-up and modified bitumen roofs, as supplied by NCFI Polyurethanes, is approved for use on the project.
- B. Applicator Qualifications: The applicator shall be approved by NCFI Polyurethanes to apply the system. Manufacturer's written verification of Tier One applicator approval is required.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Containers and Packaging: Deliver materials in original sealed containers, clearly marked with manufacturer's logo, full product name, and lot number(s).
- B. Storage: Store materials between 40°F and 100°F with careful handling to prevent damage to products. If conditions exceed these ranges, special consideration in storage must be taken. Do not store at high temperatures in direct sunlight.
- C. Protection: Protect all materials from freezing and other damage during transit, handling, storage, and installation.

1.05 PROJECT CONDITIONS

- A. These minimum recommendations for material usage are for ideal conditions. The number of gallons per 100 square feet may need to increase due to uneven application, rough surface texture, wind conditions while spraying or other variables.

- B. Wet insulation must be thoroughly evaluated and then addressed with removal or other measures. Consult NCFI Polyurethanes regarding the need for moisture surveys and other assessments.
- C. Structural cracks should be referred to NCFI Polyurethanes for recommendations.
- D. This installation guide specification assumes that the deck, if wood, is in sound condition.
- E. Do not apply materials unless surface to receive acrylic roofing system is clean, dry and prepared as specified.
- F. Install all material in strict accordance with all published safety, weather, or applicable regulations of the manufacturer and/or local, state, and/or federal agencies which have jurisdiction.
- G. The entire system shall be fully adhered to the surface on which it is applied. Voids left under the system, creating bridges, are not acceptable.
- H. Do not proceed with application of coating or sealing materials when temperature is less than 45°F. No coating system shall be applied if weather will not permit it to dry prior to exposure to precipitation or freezing.
- I. Excessive coating on the roof is not acceptable.
- J. Follow instructions for use of all roofing materials and application equipment.
- K. As a general principle, to prevent the ponding of water, install additional drains as necessary.

1.06 DETAIL WORK

- A. This specification does not extensively outline procedures for preparation and finishing of drains, vents, ducts, flashings, parapet walls, sheet metal work, etc. This work should be outlined by the contractor before work commences, and shall be performed observing good trade practices.

II. PRODUCTS

2.01 ENDURATECH ROOF COATING SYSTEM

- A. The roofing system is a 100% acrylic, elastomeric, spray-applied ENDURATECH Coating System manufactured to NCFI Polyurethanes specifications.
- B. Physical Properties of Cured Coating System: The testing of the coating shall be done under ASTM-D6083, "Standard Specification for Liquid Applied Acrylic Coating Used in Roofing", unless otherwise specified.
 - 1. The roofing system shall have good resistance to ponding water.
 - 2. The roofing system shall contain no plasticizers.

3. The roofing system shall contain no migrating fire retardants.
4. The roofing system shall have a Class A fire rating on a noncombustible deck when tested according to the procedures outlined in ASTM E-108.
5. The roofing system shall also meet the following physical property requirements:

Property	ASTM Method	Results
Tensile Strength, psi (Max @ 73°F)	D6083	Minimum 250
% Elongation @ Break (73°F)	D6083	Minimum 250
Wet adhesion to Specified Substrate	D6083	Minimum 3.0 pli
Permeance, perms	D6083	Maximum 20
Volume Solids % Weight Solids %	D6083	> 50 > 65

- C. The reinforcing fabric shall be Tietex T272, T325 or T326 or an equivalent that meets the following physical property requirements:

Properties	Test Method	Average Value		
		T272	T325	T326
Weight (per sq yard)	Calculated by formula	3 ounces	2.75 ounces	2.75 ounces
Bursting Strength (lbs)	ASTM D3786	177	127	99.6
Tensile Strength (psi)	ASTM D1682	57.1	41	31.6
Tear Strength (lbs)	ASTM D1117	16.1	14.2	13.2
Elongation (%)	ASTM D1682	62	25.8	40.6
Conformability		Excellent	Good	Excellent
Ease of Saturation		Excellent	Excellent	Excellent

2.02 RELATED MATERIALS

- A. Flashing, adhesives, thinners, elastomeric caulking compounds, primers, and similar materials shall be approved by NCFI Polyurethanes. All materials used shall be applied in accordance with its manufacturer's recommendations.

2.03 EQUIPMENT

- A. For recommended spray equipment guidelines, please refer to NCFI Polyurethanes Technical Service Department.

III. EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with NCFI's product data, including product technical bulletins and product guide specification instructions.

3.02 EXAMINATION

- A. Inspect surfaces that will receive the ENDURATECH Premier Roof System to make sure they are clean, smooth, sound, properly prepared, and free of moisture, dirt, debris, or other contamination.
- B. Verify that all roof penetrations, mechanical equipment, cants, edge metal, and other on-roof items are in place and secure.
- C. Verify that all critical areas around the immediate vicinity of the spray area are suitably protected.
- D. Verify all roof drains are clean and in working order.
- E. Verify that all air conditioning and air intake vents are suitably protected or closed.

3.03 PREPARATION

- A. The surface must be clean, sound, dry and free of any materials that would inhibit proper adhesion of the coating or sealant. Achievement of this condition may require the use of industrial cleaner, scraping, power brooming, vacuuming or other means, and shall always be performed observing responsible trade practices.
- B. Repair all cracks, voids, holes or other surface imperfections in the roof field or flashing areas with ENDURATECH S as appropriate. After allowing the sealant or coating to dry (normally at least 24 hours), these areas shall be coated with ENDURATECH applied at the rate of at least 2 gallons per 100 square feet. A T272 Polyester Reinforcing Fabric shall then be embedded in the wet coat of ENDURATECH, with a second coat of ENDURATECH being immediately applied on top of the fabric, at the rate of at least 1 gallon per 100 square feet. The T272 Polyester Fabric shall extend 4-6 inches beyond the area in need of repair. Both the first and second coats of ENDURATECH shall extend 2 inches beyond the edges of the T272 Polyester Reinforcing Fabric.
- C. All blisters shall be cut, dried out, re-adhered and sealed with appropriate roof mastic. After allowing sealant to dry, apply the ENDURATECH and T272 Polyester Reinforcing Fabric as described in Section 3.03, Paragraph B of this guide specification.
- D. Seal all HVAC duct work joints as needed with ENDURATECH S and T272 Polyester Reinforcing Fabric or BUTYL SEAM TAPE. Coat entire duct assembly two 1½ gallon coats of ENDURATECH.
- E. Reseal around all mechanical equipment and roof penetrations with ENDURATECH S.
- F. All loose seams, ridges and other membrane deficiencies of existing roof system shall be fastened down and sealed with ENDURATECH S. Sealant must seal fasteners as well. After allowing sealant to dry (normally at least 24 hours), apply ENDURATECH and T272 Polyester Reinforcing Fabric as described in Section 3.03, Paragraph B of this guide specification.

- G. All valley areas, waterways, drain areas or other areas where potential water accumulation is a concern, apply ENDURATECH at the rate of 2 gallons per 100 square feet, approximately 48 inches wide. Immediately embed 40 inch wide T272 Polyester Reinforcing Fabric into the wet coating, with a second coat of ENDURATECH being immediately applied on top of the fabric at the rate of 1 gallon per 100 square feet. Both the first and second coats shall extend a minimum of 2 inches beyond the edges of the T272 Polyester Reinforcing Fabric. In any large valley area, multiple widths of fabric should be used, overlapping them a minimum of 3 inches so that the coating and fabric extend at least six inches up above the potential waterline.
- H. Allow coating to dry thoroughly (normally 8 to 24 hours depending on weather conditions), before proceeding to application of the remainder of the roofing system as described in section 3.04 of this guide specification.

3.04 APPLICATION

- A. After thorough preparation as necessary, the entire roof shall receive the ENDURATECH Premier Roofing System consisting of 4 gallons per 100 square feet of ENDURATECH, applied evenly in two separate coats.
- B. Apply a base coat of ENDURATECH coating by spray or roller at a rate of 2 gallons per 100 square feet. Allow to thoroughly dry for normally 8 to 24 hours depending on weather conditions.
- C. Apply a top coat of ENDURATECH coating in a cross-hatch technique at a rate of 2 gallons per 100 square feet. Allow to thoroughly dry before exposing to foot traffic.
- D. All coating edges shall be coated in an evenly uniform manner so as to provide an aesthetically pleasing appearance.
- E. Total dry mil thickness should not be less than 30 mils in any given area. The average of several test areas within the field of the roof should be a minimum of 35 mils.

3.05 FIELD QUALITY REQUIREMENTS

- A. Manufacturer's Field Services: For warranted projects, inspection by an NCFI manufacturer's representative shall be made to verify the proper installation of the system. Any areas that do not meet the minimum standards for application as specified herein shall be corrected at the contractor's expense. NCFI's inspection or verification shall not constitute acceptance of responsibility for any improper application of material.

3.06 CLEANING

- A. Surfaces not intended to receive the ENDURATECH Premier Roofing System shall be protected during the application of the system. Should this protection not be effective, or not be provided, the respective surfaces shall be restored to their proper conditions by cleaning, repairing or replacing. All debris from completion of work shall be completely removed from the project site.

IV. MATERIALS

The following materials listed in these recommendations are available from NCFI Polyurethanes:

1. ENDURATECH, 100% acrylic, high performance elastomeric roof coating.
2. ENDURATECH S, trowel grade sealant.
3. BUTYL SEAM TAPE, polyester reinforced waterproofing tape.
4. T272 Polyester Reinforcing Fabric, 6 inch, 10 inch, 20 inch and 40 inch.
5. INDUSTRIAL CLEANER, water based biodegradable cleaner.