

**Legacy report on the 1997 Uniform Building Code™**

**DIVISION: 07—THERMAL AND MOISTURE PROTECTION**  
**Section: 07570—Coated Foam Roofing**

**PRO-TECH EC-100 COATED FOAM ROOFING SYSTEM**

**PRO-TECH PRODUCTS, INC.**  
**3003 NORTH 73rd STREET**  
**SCOTTSDALE, ARIZONA 85251**

**1.0 SUBJECT**

Pro-Tech EC-100 Coated Foam Roofing System.

**2.0 DESCRIPTION**
**2.1 General:**

The Pro-Tech EC-100 Coated Foam Roofing System is a roof covering consisting of Pro-Tech EC-100 acrylic elastomeric coating and spray-applied polyurethane foam plastic over combustible or noncombustible roof decks or existing code-complying built-up roof coverings. When installed as set forth in this report, the systems have roof covering classifications as indicated in Table 1. Wind resistance is described in Section 2.7.

**2.2 Materials:**

**2.2.1 Pro-Tech EC-100 Coating:** Pro-Tech EC-100 is a liquid-applied acrylic elastomeric coating used as the first and second base coats of the Pro-Tech EC-100 roof coverings specified in Table 1. The coating materials are supplied in 5- and 55-gallon (18.9 and 208 L) containers, and have a shelf life of one year when stored in unopened containers at temperatures between 60°F and 110°F (16°C and 43°C).

**2.2.2 Foam Plastic Insulation:** P-2.5 insulation consists of spray-applied polyurethane foam plastic insulation, installed as specified in Section 2.4 and Table 1. The foam plastic is manufactured by North Carolina Foam Industries. It is supplied in 5-, 55- and 275-gallon (18.9, 208 and 1040 L) containers and has a shelf life of 12 months when stored at temperatures between 60°F and 110°F (16°C and 43°C).

**2.2.3 Pro-Tech Granules:** Pro-Tech granules consisting of #6 high calcium grit stones are installed over the second base coat of Pro-Tech EC-100 coating, as specified in Section 2.5.

**2.2.4 Top Coat:** The top coat is installed as specified in Section 2.6 and Table 1, and consists of the following ingredients:

1. Pro-Tech Dry Mix-II, consisting of a proprietary cementitious mixture.
2. Rohm & Haas MC-76, which is a liquid polymer product with a one-year shelf life when stored in unopened containers at 34°F to 120°F (1°C to 49°C).
3. Rhone-Poulenc Colloid 622, a liquid polymer; the product has a one-year shelf life when stored in unopened containers at 55°F to 110°F (13°C to 43°C).

**2.3 Preparation of Substrates:**

**2.3.1 General:** The substrates to be covered must be free of all grease, oil, loose particles, moisture, and other foreign materials. All parapet surfaces, valleys, etc., must be flashed and counterflashed as required by Sections 1508 and 1509 of the 1997 *Uniform Building Code*™ (UBC). Areas where polyurethane foam plastic insulation is not being applied must be masked off or otherwise protected from overspray. The substrate surface shall be completely dry. See Figure 1 for typical installation details.

**2.3.2 Wood Substrates:** Wood substrates must be Exposure 1 or exterior-grade plywood complying with UBC Standard 23-2, must be at least 1/2 inch (12.7 mm) thick and bonded with exterior glue, and must be adequate for the required roof loading. All plywood edges must be supported by blocking or tongue-and-groove joints, as required in Section 2602.5.3 of the UBC. All joints in the deck must be taped with one layer of 2-mil-thick (0.002 inch [0.051 mm]), aluminum backed, 2-inch-wide (50.8 mm) tape. The plywood surface must be primed with a primer/sealer material that is not waxy or oily.

**2.3.3 Noncombustible Substrates:** New concrete decks must be allowed to cure at least 21 days prior to application of foam. Primer is not required over the decks, but may be applied at the installer's discretion.

Metal decks must be cleaned of any adhesion inhibitors, and gaps in end or sidelaps must be sealed with an approved sealant.

**2.3.4 Existing Built-up Roof Covering:** The Pro-Tech EC-100 Foam Roofing System may be applied over existing built-up roof coverings, as described in Table 1, subject to inspection of the existing roof covering, and written approval by the building official, in accordance with Section 1515.1 of Appendix Chapter 15 of the UBC. The existing roof must be securely attached to the deck. Prior to application of the spray-applied polyurethane foam plastic, the existing surface must be prepared in accordance with Section 1516.2 of the Appendix of the

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UBC. The substrates must comply with Section 2.3.2 or 2.3.3 of this report. The Pro-Tech EC-100 Coated Foam Roofing System must be installed over existing uninsulated systems only.

## 2.4 Foam Plastic Application:

The polyurethane foam plastic insulation described in Section 2.2.2 and Table 1 shall be applied to substrates that are prepared in accordance with Section 2.3, using foam-spraying equipment approved by Pro-Tech Products, Inc. Application of the foam plastic is prohibited if the substrate or ambient temperatures are less than 50°F (10°C) or if the wind velocity is above 15 miles per hour (24 km/h). Application is also prohibited if precipitation is expected prior to achievement of a fully cured full-thickness application.

The foam plastic is applied in two 1/2-inch (12.7 mm) passes, to reach the desired 1-inch (25.4 mm) thickness. The total finished thickness must be achieved within the same day. Flash passes of less than 1/4 inch (6.4 mm) are not acceptable in the top layer. The finished surface of the foam must be smooth and free of voids, pinholes and crevices.

## 2.5 Application of Pro-Tech EC-100 Coatings:

The Pro-Tech EC-100 coatings described in Section 2.2.1 are applied using spray equipment designed for use with high-viscosity coatings. The coatings must be applied as two base coats at the rate specified in Table 1. Application of Pro-Tech EC-100 coatings is prohibited if either, or both, of the following conditions exist:

1. Substrate surface temperature is less than 50°F (10°C).
2. Surface is subject to weather conditions that include precipitation or freezing.

After application of the first base coat, depending on weather conditions, approximately 8 hours must be allowed, prior to application of the second base coat. The second base coat is covered with a coating of Pro-Tech granules applied at a rate of 64 pounds per 100 square feet (2.1232 kilograms per square meter). Foam plastic insulation must be coated the same day as foam application, to avoid the possibility of moisture absorption and of oxidation. If the foam plastic is oxidized, it must be repaired or replaced. The foam surface shall be completely dry and frost-free before coating, and shall be free of any degraded foam, grease, oil, dirt or other contaminants.

## 2.6 Application of Pro-Tech Top Coat:

The base coats are allowed to cure for 24 hours, and then a top coat consisting of a mixture of 40 pounds (18.15 kg) Pro-Tech Dry Mix-II, 1/2 gallon (1.892 L) of Rohm & Haas MC-76, 3/4 ounce (22.18 mL) of Rhone-Poulenc Colloid 622, and 3 1/2 gallons (13.25 L) of water, is spray-applied to cover 100 square feet (9.29 square meters).

## 2.7 Wind Resistance:

Installation is limited to areas having a maximum basic wind speed of 80 miles per hour (129 km/h), on structures a maximum of 40 feet (12,192 mm) in height, in Exposure B areas. A typical attachment of perimeter flashing to wood substrate is shown in Figure 2. For alternate perimeter flashing applications to wood substrates, or

perimeter flashing applications in alternate substrates, the fasteners must be engineered to satisfy attachment of flashing for a minimum design capacity of 75 plf (1,095 N/m). Refer to the UBC, current evaluation reports, or code-referenced standards for allowable fastener capacity. Alternate designs must be approved by the local building official. Fastening of the hook strip shown in Figure 2 is not a structural connection; field attachment must be provided as required by the manufacturer.

## 2.8 Fire Classification:

The assemblies described in Table 1 have the roof classifications noted in the table.

## 2.9 Identification:

Containers of Pro-Tech EC-100 coating, Pro-Tech granules and Pro-Tech Dry Mix-II have labels bearing the Pro-Tech Products, Inc., name and address; the product designation; the date of manufacture; the shelf life; and the evaluation report number (ER-5979).

The P-2.5 foam plastic insulation is labeled with the North Carolina Foam Industries, Inc., name; product name; and flame-spread characteristics.

## 3.0 EVIDENCE SUBMITTED

Descriptive literature; installation instructions; data in accordance with the ICC-ES Acceptance Criteria for Membrane Roof-covering Systems (AC75), dated June 2003, and the ICC-ES Acceptance Criteria for Foam Plastic Insulation (AC12), dated July 2002; reports of tests in accordance with UL 1256 and ASTM E 84; and a quality control manual.

## 4.0 FINDINGS

**That the Pro-Tech EC-100 Coated Foam Roofing System described in this report complies with the 1997 Uniform Building Code™, subject to the following conditions:**

- 4.1 All system components are installed by applicators approved by Pro-Tech Products, Inc., in accordance with this report and the manufacturer's instructions.
- 4.2 Where moderate or heavy foot traffic occurs, such as for maintenance of equipment, the roof coating system must be adequately protected to prevent rupture or wearing of the surface.
- 4.3 Installation is limited to areas noted in Section 2.7 of this report.
- 4.4 Pro-Tech EC-100 coating, Pro-Tech granules and Pro-Tech Dry Mix-II are manufactured at the Pro-Tech Products, Inc., facility in Scottsdale, Arizona, under a quality control program with inspections by ICC-ES.
- 4.5 The P-2.5 foam insulation described in Section 2.2.2 is manufactured by North Carolina Foam Industries under a quality control program with inspections by ICC-ES.

**This report is subject to re-examination in two years.**

TABLE 1—PRO-TECH COATED FOAM ROOFING SYSTEM

SYSTEM NUMBER AND ROOFING CLASSIFICATION	SUBSTRATE	FOAM INSULATION <sup>3</sup>			PRO-TECH EC-100 COATING			MAXIMUM ROOF SLOPE
		Product	Nominal Density (pcf)	Nominal Thickness (inches)	Base Coat Application Rate (gal. per 100 square feet)		Total Dry-film Thickness (mils)	
					First	Second <sup>1</sup>		
1. Class A	As described in Section 2.3.2 or 2.3.3	P-2.5	2.5	1	1½	1½	48	½:12
2. Same as existing roof covering <sup>2</sup>	Class A, B or C BUR over substrate as described in Section 2.3.4	P-2.5	2.5	1	1½	1½	48	½:12

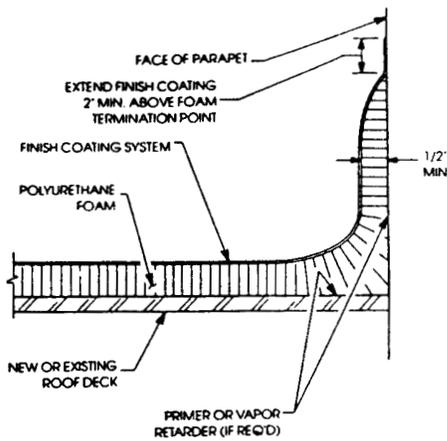
For **SI**: 1 mil = 0.0254 mm, 1 pound/100 square feet = 0.0488 kg/m<sup>2</sup>, 1 oz./sq. yd. = 33.905 g/m<sup>2</sup>, 1 gal/100 feet<sup>2</sup> = 0.41 L/m<sup>2</sup>, 1 inch = 25.4 mm, 1 pcf = 16.02 kg/m<sup>3</sup>.

<sup>1</sup>Top Coat as described in Section 2.6 is applied over the second coat.

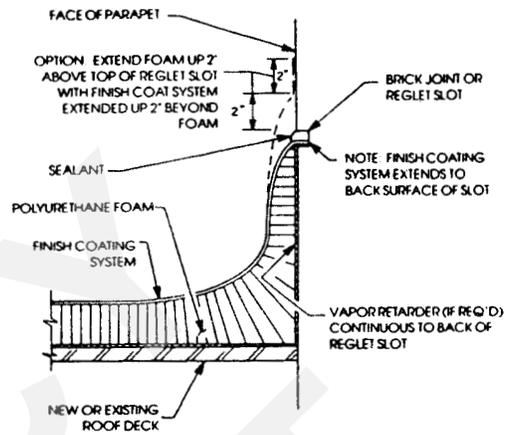
<sup>2</sup>Pro-Tech EC-100 Coated Foam Roofing System shall be installed over existing uninsulated systems only.

<sup>3</sup>Foam insulation is manufactured by North Carolina Foam Industries, Inc.

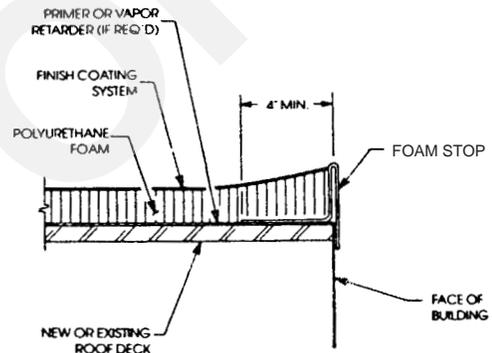
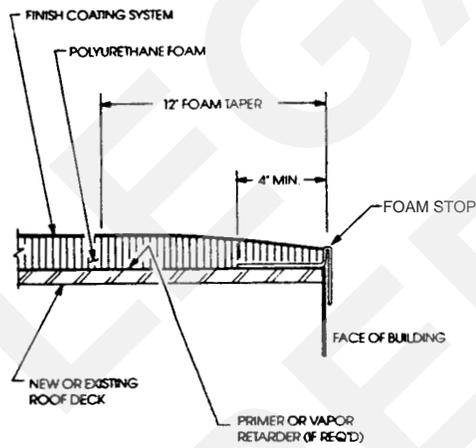
BUR = Existing built-up roof covering.



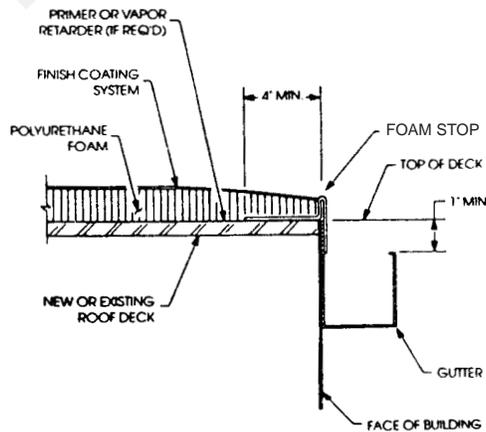
**Self Flashing at Parapet Wall**



**Flashing at Parapet**

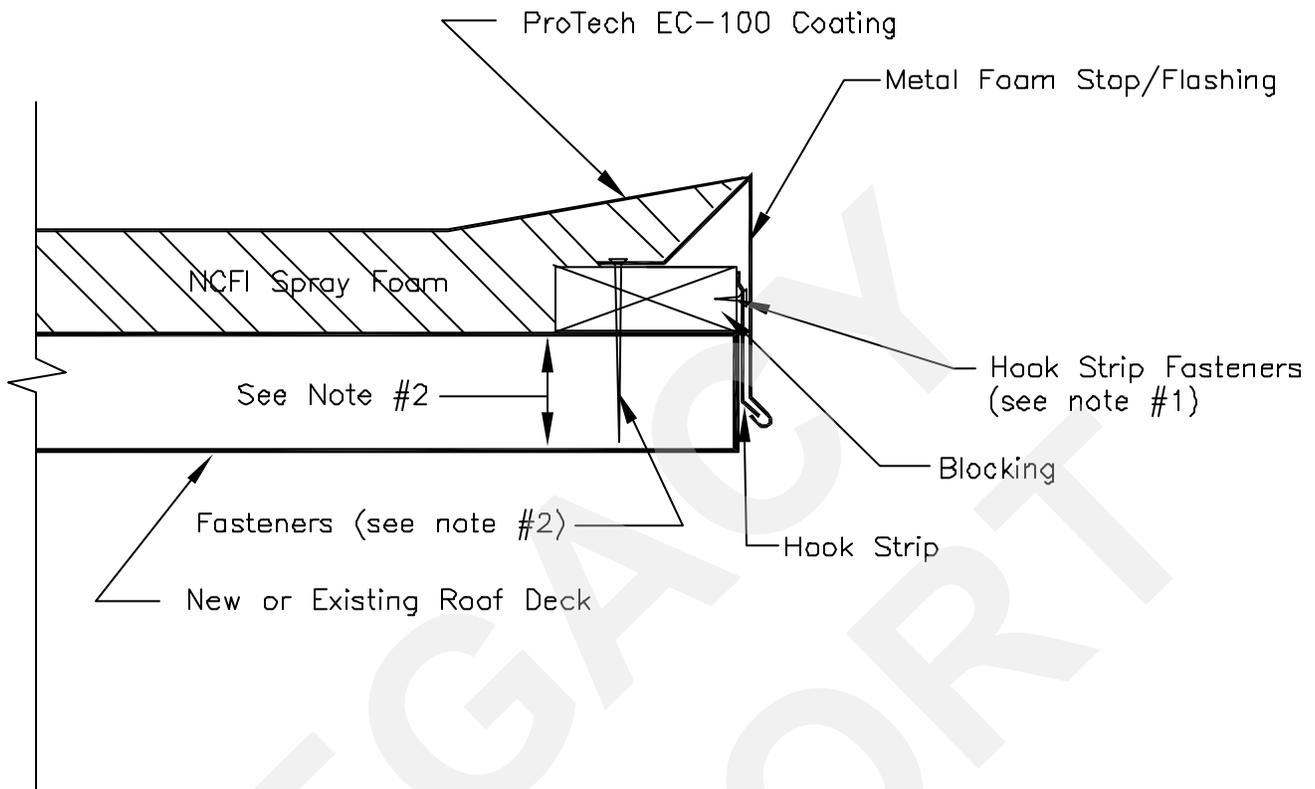


**Foamstop Detail**



**Gutter Detail**

**FIGURE 1—INSTALLATION DETAILS**



Note #1 - Hook Strip Fasteners as recommended by manufacturer

Note #2 - Fastener penetration as follows:

8d screws @ 12" o/c 1-1/4" penetration

10d screws @ 16" o/c 1-3/8" penetration

12d screws @ 18" o/c 1-1/2" penetration

**FIGURE 2—TYPICAL ATTACHMENT OF PERIMETER FLASHING TO WOOD SUBSTRATE**