

## SECTION 07531

### ELASTOMERIC SINGLE PLY ROOFING - FULLY ADHERED

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Insulation, membrane roofing, edge fastening flashings, accessories, and trim.

##### 1.2 SYSTEM DESCRIPTION

- A. Elastomeric Sheet Membrane Conventional Roofing System: Single ply membrane system with insulation and adhesive applied membrane.

##### 1.3 SUBMITTALS

- A. Submit the following in accordance with the requirements of Section 01300:
  1. Catalog data indicating characteristics of membrane materials, flashing materials and insulation.
  2. Manufacturer's certification that products are composed of the specified materials and that they meet or exceed specified requirements.
  3. Manufacturer's installation instructions. Indicate special precautions required for seaming the membrane.
  4. Shop drawings indicating roof configuration and sheet layout, details at perimeter, terminations, overlaps, penetrations, equipment supports, pipe and duct supports, etc.
  5. Submit warranty as specified herein.

##### 1.4 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the products specified in this section.
- B. Applicator: Company specializing in performing the work of this section with documented experience and approved by system manufacturer. As a minimum, include a written record indicating 10 projects which the applicator has successfully completed, with the name and address of the purchasers of the service and location of the work performed.

##### 1.5 REGULATORY REQUIREMENTS

- A. Underwriters Laboratories, Inc. (UL): Class A Fire Hazard Classification.
- B. Factory Mutual Engineering & Research Corporation (FM): Roof Assembly Classification, of Class 1 Construction, wind uplift requirement of I90, in accordance with FM Construction Bulletin 1-28. Manufacturer's system must have passed the preceding (FM, I90) testing, but may exceed (FM, I90) if necessary to meet the requirements of 1.06 wind resistance. Submit test documentation upon request.

##### 1.6 WIND RESISTANCE

- A. Install the roof system to resist a 75 mph basic wind speed measured at the roof surface.

##### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products in manufacturer's original containers, dry, undamaged, seals and labels intact.
- B. Store products in weather protected environment, clear of ground and moisture.
- C. Handle all weather sensitive materials as required by the manufacturer. Permanently remove from the job any materials not handled per manufacturer's requirements.

1.8 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply roofing materials during inclement weather.
- B. Do not apply roofing materials to damp or frozen surfaces.
- C. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.

1.9 WARRANTY

- A. Provide written warranty, signed by manufacturer of primary roofing materials and his authorized installer, agreeing to replace/repair defective materials and workmanship.
  - 1. Warranty period is 10 years after date of final acceptance by LANL, manufacturer, installer and contractor for all material and labor.
  - 2. Warrant installation to remain damage free through 75 mph basic winds.

PART 2 PRODUCTS

2.1 MANUFACTURERS - MEMBRANE MATERIAL

- A. Tremco, Inc., fully adhered Chlorosulfonated Polyethylene (CSPE) Membrane.
- B. Other acceptable manufacturers offering equivalent (CSPE) products.
  - 1. J. P. Stevens, Hi-tuff
  - 2. Dunlop Construction Products, Inc.

2.2 MEMBRANE AND ASSOCIATED MATERIALS

- A. "Hypalon" synthetic rubber as produced by E.I. du Pont de Nemours & Company, formed into uniform flexible sheets, complying with the following:
  - 1. Thickness: 45 mils, nominal.
  - 2. Reinforcing Scrim: Polyester or nylon.
  - 3. Exposed Face Color: White.

<u>Properties</u>	<u>Test</u>	<u>Results</u>
Tensile Strength:	ANSI/ASTM D751	225
Ultimate Elongation:	ANSI/ASTM D751	25
Hardness - Shore A:	ASTM D2240	
Tear Strength:	ASTM D751	90
Water Absorption:	ASTM D471	+2.5
Moisture Vapor Perms:	ASTM E96	
Exposure:	ASTM D822	

Low Temperature Brittleness: ANSI/ASTM D746 -30°F Pass

### 2.3 ADHESIVE MATERIALS

- A. Membrane Adhesives: As recommended by membrane manufacturer.
- B. Thinner and Cleaner: As recommended by adhesive manufacturer, compatible with sheet membrane.

### 2.4 INSULATION MANUFACTURER

- A. The manufacturer of the insulation products must be approved by the manufacturer of the roofing system.

### 2.5 INSULATION

- A. Polyisocyanurate Board Roof Insulation: Rigid, cellular thermal insulation with polyisocyanurate closed-cell foam core and manufacturer's standard facings; complying with FS HH-I-1972/2, Class 1; aged R-values as designated at mean temperatures indicated, after conditioning per RIC/TIMA Bulletin #281-1; and as follows.
  - 1. Surface Burning Characteristics: Maximum flame spread of 25.
  - 2. Thermal Resistance: Minimum thermal resistance "R"=5.56 per inch.

### 2.6 FLASHINGS

- A. Flexible Flashings: Same material as membrane.
- B. Penetration Flashings: Pre-formed manufacturer approved hypalon or neoprene.

### 2.7 RECOVER BOARD

- A. As approved by membrane manufacturer as bondable surface to provide required wind resistance.

### 2.8 ACCESSORIES

- [A. Termination Bar: 1in. x 1/4in. aluminum bar fastened to [concrete roof with thread cutting, cadmium plated steel screws, 1/4in. x 1 1/2,in. Con-Sert System manufactured by DFS/USA or approved equal.]]
- B. Insulation Fasteners: Appropriate for purpose intended and approved by Factory Mutual and system manufacturer; length required for thickness of material plus metal washers.
- C. Sealants: As recommended by membrane manufacturer.
- D. Roof Edging: 26 ga. sheet metal [galvanized or coated with membrane material].
- E. Scuppers
- F. Drains

PART 3 EXECUTION

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**3.1 DEMOLITION**

**A. Remove existing roof membrane and loose bituminous materials.**

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**3.2 INSULATION AND RECOVER BOARD APPLICATION**

- A. Verify deck surfaces are dry and free of snow or ice.
- B. Mechanically fasten insulation and recover board to deck simultaneously in accordance with insulation manufacturer's instructions and FM I90 requirements, or greater requirements if necessary to withstand 75 mph basic winds. Install recover board on top of insulation to form substrate for membrane.
- C. Minimum Total Insulation Thickness: [2in.]
- D. Maximum Insulation Thickness Per Sheet: [2in.]
- E. Lay boards with edges in moderate contact without forcing. Cut insulation and recover board to fit neatly to existing coping.
- F. Tape joints of insulation in accordance with insulation manufacturer's instructions.
- G. Install insulation greater than 2in. in total thickness in two layers with joints staggered.

**3.3 MEMBRANE APPLICATION**

- A. Apply membrane in accordance with manufacturer's instructions, as required to meet I90 installation as a minimum. Exceed I90 standard per these specifications when appropriate to meet wind resistance requirements.
- B. Secure edges of membrane with termination bar fastened to concrete coping with screws at 12in. on center.

**3.4 PROTECTION**

- A. Protect building surfaces against damage from roofing work.
- B. Where traffic must continue over finished roof membrane, protect surfaces with membrane manufacturer approved reconstituted rubber walkway.

END OF SECTION