ELASTRON®

BUTYL RUBBER VAPOR BARRIER COATING

Technical Data & Application Instructions

PRODUCT DESCRIPTION

ELASTRON is a single-package polymerized butyl rubber coating. It is extremely resistant to the passage of mass water or gas vapor due to its unique, low molecular chemical structure. **ELASTRON** cures by solvent evaporation to form a highly impermeable, elastomeric membrane that also offers excellent chemical resistance.

ELASTRON is designed for application through standard airless spray equipment. It may also be applied by brush or roller on smaller projects or those with special restrictions.

BASIC USES

ELASTRON was developed primarily for application as a vapor barrier over polyurethane foam, concrete and masonry, aged BUR, wood and metal. The outstanding properties of the coating have resulted in successful applications throughout the world over roofs, in high humidity areas, controlled atmosphere rooms, dry kilns, cold storage areas, over insulated pipelines and cryogenic storage tanks — wherever an effective vapor barrier is required.

ELASTRON possesses an exceptionally low perm rating, making it far more effective than conventional vapor retarders. It will break down upon extended UV exposure and should therefore be topcoated. UNITED'S **Diathon**, **Acron**, **Roof Mate**, **Roofshield**, **Sunshield**, **Kymax** or **Elastuff 102** can all be utilized to provide a barrier to ultraviolet degradation and resistance to all forms of weather.

COLORS

ELASTRON is available in standard medium gray color only. For exterior applications or for interior applications requiring a particular color, **ELASTRON** should be coated with an approved topcoat. Topcoats are available in standard white and can be tinted to match a wide variety of custom colors.

TYPICAL PROPERTIES (WET)

1. **Solids by Weight:**
   42% (±2) [ASTM D7232]
2. **Solids by Volume:**
   50% (±2) [ASTM D2697]
3. **Dry Time to Touch:**
   4 to 6 hours @ 75°F (24°C) [ASTM D1640]
4. **Cure Time:**
   90% cure: 24 hours @ 75°F (24°C), 50% R.H.
5. **Flash Point:**
   68°F (20°C) [ASTM D1310]
6. **VOC Content:**
   517 grams/liter [calculated]

TYPICAL PROPERTIES (CURED)

1. **Permeance:**
   0.45 U.S. Perms @ 12 mils (305 microns) [ASTM D1653]
2. **Tensile Strength:**
   1200 psi (±200) [ASTM D2370]
3. **Elongation:**
   1100% (±200) [ASTM D2370]
4. **Hardness:**
   45 Shore A [ASTM D2240]
5. **Water Absorption:**
   <0.5% after 7 days at 75°F (24°C) [ASTM D471]
6. **Low Temperature Flexibility:**
   Passes 180 degree flex over ¼" mandrel without cracking @ 0°F (-18°C). Federal Test Method Standard No. 141a-6221
7. **Temperature Limits for Service Conditions:**
   -50°F to +200°F (-46 °C to 93°C)

PACKAGING & MIXING

ELASTRON is a material available in 1-gallon (3.8 l) cans and 5-gallon (19 l) pails. Some separation or settling may occur during shipment and storage. Thoroughly mix for a minimum of 5 minutes using an air-driven power mixer prior to application. Thinning the material is not recommended.

Shelf life in unopened containers is 12 months from date of manufacture. Material should be stored inside at temperatures between 50 and 90°F (10 and 32°C).

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PERFORMANCE PROPERTIES & ADVANTAGES

1. **Low Permeability:**
   Because of its unique low molecular chemical structure, **ELASTRON** is extremely resistant to the passage of mass water and water vapor. Its permeance rating of 0.45 U.S. Perms at 12 mils (305 microns) also makes it extremely resistant to the passage of most other gas vapors. Tested in accordance with ASTM D1653.

2. **Resistance to Salt Spray:**
   Test panels were placed in the Harshaw Salt Spray Cabinet and maintained at a temperature of 95°F (35°C), utilizing a fog solution of not less than 5% by weight of sodium chloride. After 1,000 hours of continuous testing, **ELASTRON** panels topcoated with **Diathon/Roof Mate** and **Elastuff 102** had no loss of adhesion, no blistering or softening, and no loss of flexibility. Tested in accordance with ASTM B117.

3. **Bond Strength:**
   Tested in accordance with ASTM C297 – Instron Universal Testing Instrument. No failure of bond between the coating and most polyurethane foam samples tested. All polyurethane foam systems are not equal in surface chemistry. It is recommended that the applicator evaluate the specific foam system to be used in regard to adhesion between the foam system and **ELASTRON**. It also develops a tenacious physical bond to properly prepared concrete, masonry, aged BUR, steel and wood substrates.

4. **Low Temperature Flexibility:**
   ELASTRON retains its ability to withstand ¼" (0.64 cm) mandrel bends without cracking at temperatures to 0°F (-18°C). Tested in accordance with Federal Test Method Standard No. 141a-6221

5. **Low Temperature Impact:**
   Steel Ball Drop Procedure using a 4.6 ounce (130 gram), 1¼" diameter (3.19 cm) steel ball dropped from a height of 5 feet (1.5 m) onto polyurethane foam coated with **ELASTRON**. Temperature of test panels was maintained at 23°F (-5°C). No surface cracks or breaks were observed in the coating. Test is adapted from National Bureau of Standards using 2.7 lb./cu. ft. (43.3 kg/m³) density foam.

6. **High Build Sprayability:**
   Applied at the coverage rate of 1 gallon per 100 sq. ft., the coating will theoretically yield 8.0 dry mils (203 microns). The highly cohesive qualities of **ELASTRON** allow for vertical film builds in excess of 20 wet mils.

SURFACE PREPARATION

POLYURETHANE FOAM:

Polyurethane foam and adjacent surfaces to be coated shall be free of any moisture, degraded foam, grease, oil, dirt, or other contaminants that will interfere with proper adhesion. Any physical damage to the polyurethane foam shall be repaired before coating application commences. Excessive oxidation of polyurethane foam shall be removed. Do not coat directly over polyurethane foam that has been mechanically scarified. Surfaces shall be completely dry and frost-free.

METAL:

Metal surfaces must be free from moisture, dust, corrosion, dirt and grease, and any other materials that could interfere with proper adhesion. Surfaces shall then be sandblasted to gray metal in accordance with SSPC-SP6 Commercial Blast Cleaning with a minimum anchor pattern of 1.5 mils (38 microns). Where sandblasting is not possible, all rust must be removed with power equipment, or by wire brushing and the use of a liquid rust remover.

Metal surfaces shall be primed with UNITED'S **Primer 302** at a thickness of 1.0 to 1.5 dry mils (25 to 38 microns), depending upon surface profile. For details, refer to separate literature entitled **Primer 302** Technical Data and Application Instructions.

For product use under immersion conditions, contact UNITED'S Technical Service Department.

CONCRETE AND MASONRY:

Concrete and masonry surfaces shall be dry and clean, free from dirt, grease, curing agents, form release agents, or other foreign contaminants that could interfere with proper adhesion. Surfaces shall be free of sharp projections, ridges and loose aggregate. Sandblasting will be required if the surfaces have been previously coated or if surfaces are contaminated to the point that acid, chemical cleaning, or power washing is not sufficient for removal.

Concrete and masonry shall be primed with one coat of UNITED'S **Uni-Tile Sealer** or **Uni-Tile HS Sealer** applied at 200 to 300 sq. ft. per gallon (4.9 to 7.3 m²/l).

WOOD:

Wood must be dry and clean, free from dirt, grease or any other contaminants that could interfere with proper adhesion. Surfaces shall be primed with one coat of UNITED'S **Uni-Tile Sealer** or **Uni-Tile HS Sealer** applied at 200 to 300 sq. ft. per gallon (4.9 to 7.3 m²/l). For details on application, refer to literature entitled **Uni-Tile Sealer** or **Uni-Tile HS Sealer** Technical Data and Application Instructions.

COATING APPLICATION

ELASTRON may be applied utilizing brush, roller or airless spray. Airless spray is the preferred method for most applications. An airless pump capable of a minimum of 1.5 gallons (5.7 liters) per minute output at 2000 psi (13,793 kPa) is required. High pressure airless hose shall be minimum ½" (1.2 cm) I.D. up to 200' (61 m) in length, and minimum ¾" (1.9 cm) diameter over 200' (61 m) in length. A high pressure airless gun is recommended, equipped with a reversible spray tip between .029" and .035" (7 mm and 9 mm) and a 50° fan angle. Filter screens must be 30 mesh or larger.

Prior to introducing **ELASTRON** into the pump and hoses, thoroughly flush the system with Xylol or Mineral Spirits to remove any contaminants.

The theoretical dry film thickness given for coverage per gallon is based on smooth, non-porous surfaces. Actual gallons required in the field to achieve the minimum thickness will depend upon the surface texture, spraying technique of the applicator, and weather conditions at the time of application. It is the responsibility of the applicator to apply sufficient material to achieve the minimum dry film thickness.

ELASTRON applied at the rate of 1 gallon per 100 sq. ft. (.4 l/m²) will theoretically yield 8.0 dry mils (203 dry microns).

Coverage rates and dry film thickness are determined by specific project requirements. Contact UNITED'S Technical Service Department for recommendations.

ELASTRON shall be applied in two (2) or more separate coats to ensure positive coverage and proper film build. Criss-cross or cross-spray technique shall be used. All surfaces must be uniformly coated and be free from voids, pinholes and blisters. Cracks, seams, and gaps in excess of 1/16" should be sealed with a compatible caulk or with United's **Uni-Tape** before coating with **ELASTRON**.

Subsequent coats of **ELASTRON** shall be applied as soon as the previous coat has dried sufficiently to allow the applicator to walk on. Care must be taken to allow adequate time for solvent evaporation to take place from the previous coat(s). Cold temperatures and high humidity will retard cure. Normal recoat time will require overnight cure.

Edges of flat roof areas and all projections shall be precoated in a "picture frame" configuration. Do not apply when the ambient temperature is below 50°F (10°C) or if rain is anticipated within 4 hours of application.

Sprayability will depend on the combination of proper equipment and temperature of the coating at time of application. Store **ELASTRON** in a warm area 24 hours prior to application. Material temperature of 75°F (24°C) or greater is recommended for proper mixing. Cure time will be greatly retarded at temperatures below 60°F (15°C).

Clean equipment with Xylol or Mineral Spirits. Leave clean solvent in the equipment and spray hose until next use.

TOPCOAT:

Topcoating is required on all exterior applications. The standard topcoats for **ELASTRON** are **Diathon**, **Roof Mate**, **Roofshield**, **Acron** or **Sunshield Topcoat** and, for applications requiring a semi-gloss finish, **Kymax** or **Elastuff 102**. Contact UNITED'S Technical Service Department for specific topcoat requirements. All topcoats come in standard white with custom colors available upon request.

Allow **ELASTRON** to cure sufficiently prior to topcoating. A sufficient cure time is generally achieved overnight. Under no circumstances shall **ELASTRON** remain uncoated for more than 72 hours. If contamination is detected on surfaces to be topcoated, it will be necessary to remove this contamination by power washing. For details on the topcoats refer to individual product technical data and application instructions.

PRECAUTIONS

During application and until solvent vapors are gone, keep material away from open flame, sparks or lighted cigarettes. Use explosion-proof application equipment that has been grounded and bonded.

Welders must be kept away from premises until the entire **ELASTRON** application is fully cured. This is dependent on a combination of temperature, ventilation and film thickness. The film may appear dry within a few days, but total evaporation of solvents may not occur for weeks, depending on conditions. It is recommended that special precaution signs be posted if welding or torching is to be done in the area.

Use only in a well ventilated area. Avoid breathing of vapor or spray mist. For exterior applications, approved (MSHA/NIOSH) chemical cartridge respirator must be worn by applicator and personnel in vicinity of application. Check filters frequently to ensure proper protection. If used indoors, provide mechanical exhaust ventilation. During indoor spray operations, air line masks or positive pressure hose masks must be worn. Avoid contact with eyes and skin.

For additional information on safety requirements, refer to OSHA guidelines and **ELASTRON** Material Safety Data Sheet.

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