

ELASTUFF 310

HIGH PERFORMANCE POLYUREA ELASTOMER

Technical Data & Application Instructions

PRODUCT DESCRIPTION

ELASTUFF 310 is a high performance, 100% solids elastomeric aromatic polyurea coating. It sets and cures rapidly to form a durable membrane exhibiting a high degree of abrasion and chemical resistance. ELASTUFF 310 was formulated to achieve an optimum balance of physical properties, including outstanding tensile strength, tear strength, impact resistance and elongation. Its high durometer finish also exhibits excellent thermal stability and good UV resistance. ELASTUFF 310 is applied using heated plural-component equipment, enabling fast, high film build without solvent entrapment.

ELASTUFF 310 is a 1:1 ratio, thermosetting coating, providing a durable, highly elastomeric film with good chemical resistance to a wide range of acids and bases. It also exhibits excellent hydrolytic stability to withstand a wide range of temperature extremes, in dry or aqueous environments. Because of its rapid gel time, ELASTUFF 310 can be applied in high humidity conditions or on substrates with relatively high moisture content without fear of blistering or film cellularity common with many coatings systems.

BASIC USES

ELASTUFF 310 was especially developed for providing a durable, waterproof membrane over primed metal, concrete, wood, fiberglass, geotextile fabric and foam substrates (EPS, isocyanurate or polyurethane). It provides a high degree of corrosion protection, as well as chemical, abrasion and impact resistance over vertical and horizontal substrates.

ELASTUFF 310 is primarily used in below-grade or non-UV exposure applications. In areas where color stability is of primary importance, ELASTUFF 310 should be topcoated with an approved aliphatic, UV stable finish, such as Elastuff 102, Elastuff 200 or Elastuff 220.

ELASTUFF 310 can be used wherever a resilient, abrasion resistant membrane is required, and is ideally suited for bridge deck encapsulation. It is able to withstand the application of the hot asphalt driving surface, providing protection for the concrete substructure below. It can also be used for below grade waterproofing of foundation walls, inter-slab membraning, secondary containment, truck beds, planter boxes, waste/water treatment, cooling towers, geotextile fabric systems, manhole & sewer lining, EPS or ISO foam stock, and many other waterproofing applications.

TYPICAL PROPERTIES

1. **Solids By Weight:** 100% [ASTM D1644]
2. **Solids By Volume:** 100% [ASTM D2697]
3. **Weight Per Gallon:**
Part A = 9.2 lbs. (4.2 kg)
Part B = 8.4 lbs. (3.8 kg)
4. **Gel Time:**
15 seconds @ 75°F (24°C), 50% R.H.
5. **Tack Free Time:**
<10 minutes @ 75°F (24°C), 50% R.H.
6. **Cure Time:** 75% @ 24 hours [ASTM D1640]
7. **Ultimate Tensile Strength:**
2,200 psi (\pm 100) (13.7 MPa) @ 75°F (24°C) [ASTM D412]
8. **Elongation at Break:**
500% (\pm 50) @ 75°F (24°C) [ASTM D412]
9. **Tear Strength:** 253 pli (\pm 50) (42 Kn/m) [ASTM D1004]
10. **Hardness:**
75-80 Shore A, 35-40 Shore D [ASTM D2240]
11. **Abrasion Resistance:**
0.65 mg loss w/H10 wheels using 1,000 gm weights at 1,000 revolutions on Taber Abraser [ASTM D4060]
12. **Impact Resistance:**
Passes 160 Inch-Pounds direct and inverse [ASTM D2794]
13. **Adhesion:**
Concrete: 350 psi (\pm 50) (2.4 kPa) – substrate failure [ASTM D4541]
14. **Water Absorption:**
<1% after 7 days immersion [ASTM D570]
15. **High Temperature Stability:**
No age hardening or slump
16. **Cold Temperature Flexibility:**
Passes 180°, ¼" mandrel bend at -4°F (-20°C) [ASTM D522]
17. **Volatile Organic Content (VOC):**
0 g/liter [Calculated]
18. **Temp. Limits For Normal Service Conditions:**
-30°F to 300+°F (-22°C to 149°C)

PACKAGING & MIXING

ELASTUFF 310 is a two-component, fast cure material available in 5-gallon (19 liter) pails and 55-gallon (208 liter) drums. Mix each component prior to use using a mixer with a blade capable of uniformly mixing the entire container. Once mixed, use drum mixers or recirculation to maintain a homogenous consistency. Shelf Life is 1 year from date of shipment from UNITED'S factory.

SURFACE PREPARATION

ELASTUFF 310 shall be applied to previously prepared and/or primed substrates. Concrete and wood are typically primed using **Uni-Tile Sealer LV**, while metal surfaces are primed with **Primer 302 LV**. **Primer 302 LV** can be applied at full strength, however, thinning is recommended for increased "wetting" capability over most substrates. Thin up to 50% by volume using Methyl Ethyl Ketone (MEK), Xylol or Acetone. Apply reduced primer at the rate of 250 to 300 sq. ft. per gallon (6.1 to 7.3 m²/l) for a minimum thickness of 1.0 to 1.5 dry mils (25 to 38 microns). Refer to separate literature entitled **Elastuff Surface Preparation** or individual primer technical data sheets for detailed information. **ELASTUFF 310** is applied using 1:1 ratio plural component airless spray equipment, of which there are several suitable types and manufacturers.

APPLICATION

All prep work, including treatment of cracks, surface repairs, etc. must have been completed in accordance with UNITED'S published recommendations. Do not apply **ELASTUFF 310** when ambient temperature is below 40°F (4°C) or above 100°F (38°C) or if rain is anticipated within 1 hour.

Coverage rates and thicknesses are determined by specific project requirements. The versatility of **ELASTUFF 310** allows the specifier to solve a multitude of protection problems utilizing one coating system at a wide range of dry film thicknesses. Contact UNITED COATINGS' Technical Service Department for specific project recommendations.

ELASTUFF 310 applied at the coverage rate of 1 gallon per 100 sq. ft. (.4 l/m²) will theoretically yield 16.0 dry mils (406 microns). The following dry film thicknesses are provided for guideline use only for typical applications:

- Light Abrasion** – Dry or Immersion
32 to 40 mils (813 to 1,016 microns)
- Medium Abrasion** – Dry or Immersion
45 to 60 mils (1,143 to 1,524 microns)
- Heavy Abrasion** – Dry or Immersion
65 to 120+ mils (1,651 to 3,048+ microns)

ELASTUFF 310 is capable of rapid, high film build utilizing multiple-pass application technique. Most required thicknesses can be achieved in one or two applications using this method. Ultra-high film builds may require three or more coats. The number of coats required to achieve the specified thickness will vary depending on application method, jobsite and ambient conditions. Allow each coat of **ELASTUFF 310** to dry tack free prior to applying an additional coat. This will normally require less than 5 minutes at 75°F (24°C).

All surfaces must be uniformly coated and free of voids, pinholes or blisters. When applying **ELASTUFF 310** over rough concrete, or concrete exhibiting "bug holes", the surface should be scrape-troweled using UNITED'S **Uni-Crete** or **Wall-Bond 90**, polymer-modified cements, or epoxy mastic, or equivalent.

ELASTUFF 310 is self-flashing at natural termination points such as expansion joints, corners, edges, counter-flashings, tank wall caps, etc. Coated areas that do not tie into a natural termination must be sawcut around the perimeter to a minimum width and depth of 1/4" (6 mm). The coating shall then be applied so that it flows into and terminates at the saw cut. Tape off the adjacent edge of the saw cut to eliminate overspray and create a clean finish edge.

The **ELASTUFF 310** coating installation shall be inspected as soon as practical to ensure that all surfaces have been uniformly coated and are free from holidays, bug-holes, blisters and thin areas. Any deficient areas should be resprayed within 48 hours of initial application.

ELASTUFF 310 is available in standard Buff. A limited selection of custom colors is also available to meet specific project requirements.

Small repairs to the coating membrane, which require a hand-applied material, can be made using **Elastuff 504**. Surfaces shall first be roughened by mechanically abrading with a wire wheel, wire brush, coarse sandpaper, or other similar means in order to create a mechanical bond.

Solvent wipe the roughened surface with M.E.K. to remove all dust and other contaminants, and to soften the existing coating surface. After thoroughly blending the **Elastuff 504** components, apply repair material to the designated area. Apply multiple coats until the repaired area is equal to or greater than the existing film thickness, tapering edges of the repair material over the edges of the existing membrane.

TOPCOAT APPLICATION

ELASTUFF 310 is designed as a functional coating system and will lose some sheen and chalk slightly under extended exterior exposure. It is recommended that **ELASTUFF 310** be topcoated when subject to severe UV exposure, or in areas where aesthetics are of prime importance. **Elastuff 102, 200** or **220** are typically used as topcoats. Contact UNITED'S Technical Service Department for topcoat recommendations.

LIMITATIONS & PRECAUTIONS

ELASTUFF 310 components are affected by moisture prior to catalyzation and must be protected from moisture contamination. After opening and if all components are not used, purge containers with nitrogen or dry air and tightly seal. Keep all containers tightly closed during storage. Although **ELASTUFF 310** is not affected by the presence of slight moisture, surfaces should be dry for best results.

Use only in a well ventilated area. Avoid breathing of vapor or spray mist. For exterior applications, approved MSHA/NIOSH chemical respirator must be worn by applicator and personnel in vicinity of application. If used indoors, air line masks or positive pressure masks must be worn. Avoid contact with eyes and skin. For additional information on safety requirements, refer to OSHA guidelines and **ELASTUFF 310** Material Safety Data Sheet.



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