Elastuff™ 101 & Elastuff™ 103

Product Data Sheet

PRODUCT DESCRIPTION

Elastuff™ 101 & **Elastuff™ 103** is a high solids, moisture-catalyzed, single-component polyurethane coating system. The system consists of **Elastuff™ 101**, an aromatic polyurethane basecoat, and **Elastuff™ 103**, a UV-resistant, color stable aliphatic polyurethane topcoat. **Elastuff™ 103** is a low VOC aliphatic topcoat available to meet VOC regulations in specific areas. This combination provides an excellent balance of tensile strength, elongation and hardness, resulting in superior durability, dirt and mildew resistance, chemical resistance and weatherproofing. High abrasion and impact resistance also offer protection from maintenance traffic and severe weather conditions.

Elastuff™ 101 & **Elastuff™ 103** sytem is a permanently flexible "breathing" membrane, allowing moisture vapor to pass through the film while preventing water infiltration.

WARRANTY

See applicable warranties and guarantees for complete coverage and restrictions.

PACKAGING & SHELF LIFE

Elastuff™ 101 and **103** are single component materials. **Elastuff™ 103** is supplied with a separate booster unit, which must be thoroughly mixed into the topcoat to ensure optimum cured properties.

Elastuff™ 101
5 gallon (18 liter) pail
50 gallon (189 liter) drum

Elastuff™ 103

5 gallons	*54 gallons*
Part A - 4.8 gal (18 L) pail	Part A - 52 gal (197 L) drum
Part B - 0.2 gal (0.75 L) unit	Part B - 2 gal (7.57 L) unit

Store material indoors at temperatures between 40°F and 90°F (4°C and 32°C). Shelf life in unopened containers is 6 months from date of manufacture.

GAF Liquid-Applied

January 2016, supercedes March 2015

BASIC USES & INFORMATION

The Elastuff™ 101 & Elastuff™ 103 System is designed for protecting a wide range of substrates from the effects of weathering and moisture intrusion. It is particularly effective as a protective membrane over new or existing roof substrates, including concrete, metal, polyurethane foam, and asphaltic substrates. It provides a barrier to the effects of degradation caused by normal weathering, aging, and ultraviolet exposure.

Elastuff™ 101 & Elastuff™ 103 is also effective when used on other horizontal or vertical applications requiring a tough, abrasion, and chemical-resistant membrane, such as secondary containment and hot or ambient storage tanks.

The Elastuff™ System also achieves excellent adhesion to primed concrete, masonry, metal and wood surfaces. Elastuff™ **103** is very effective when used on its own in a wide variety of applications requiring a tough, abrasion resistant finish.

Elastuff™ 101 and Elastuff™ 103 are single-component elastomers that are catalyzed through exposure to moisture in the air. They are designed for application through standard airless spray equipment.

Elastuff™ 101 is available in standard Light Gray only. Elastuff™ **103** is available in standard White, which is certified to meet ENERGY STAR®, Cool Roof Rating Council (CRRC) and LEED reflectance and emissivity criteria, as well as California Title 24 requirements.

PHYSICAL PROPERTIES

ELASTUFF™ 101 BASECOAT	
Solids By Weight	82% (±2) [ASTM D2369]
Solids By Volume:	80% (±2) [ASTM D2697]
Flash Point	75°F (24°C) [ASTM D3278]
Dry Time to Walk On	Basecoat: 6-8 hours @ 24 wet mils Dry Times at 70°F (21°C), 50% RH
Tensile Strength	1,000 psi (±100) [ASTM D412]
Elongation	500% (±50) [ASTM D412]
Tear Strength	125 lbs. per inch (±20) [ASTM D1004]
Hardness	65–70 Shore A [ASTM D2240]
VOC	<250 g/L

ELASTUFF™ 103 TOPCOAT	
Solids By Weight	Elastuff™ 103 Topcoat: 68% (±2) [ASTM D2369]
Solids By Volume:	Elastuff™ 103 Topcoat: 58% (±2) [ASTM D2697]
Flash Point	75°F (24°C) [ASTM D3278]
Dry Time to Walk On	8-12 hrs @ 16 wet mils with booster Dry Times at 70°F (21°C), 50% RH
Tensile Strength	2,500 psi (±200) [ASTM D412]
Elongation	400% (±50) [ASTM D412]
Tear Strength	285 lbs. per inch (±25) [ASTM D1004]
Hardness	90–95 Shore A [ASTM D2240]
VOC	<250 g/L

ELASTUFF™ 101 & ELASTUFF™ 103 SYSTEM	
Abrasion Resistance	Less than 35 milligrams weight loss using CS-17 abrasive wheels and 1000 gram weights after 1000 cycles on Taber Abraser. [ASTM D4060]
High Temperature Stability	Tested in thermostatically controlled heat chamber. Will not age harden or slump at temperatures up to 200°F (93°C). [ASTM D794]
Low Temperature Flexibility	Passes 180 degree flex over 1/8" (3 mm) mandrel at -7°F (-22°C), Federal Test Method No. 141a-6221.
Low Temperature Impact Resistance	No surface cracks or breaks when impacted with 4.6 oz (130 gram), 1¼" (3.18 cm) steel ball dropped from a height of 5' (1.5 m) at -12°F (-25°C).
Temperature Limits For Normal Service Conditions	Tested from -30°F to 200°F (-34°C to 93°C).
Fire Resistance	UL-790 Class "A" listed system. Consult UL Building Material Directory.
Ponded Water Adhesion	5" (12.7 cm) column of water over polyurethane foam coated with the Elastuff™ 101 & Elastuff™ 103 system. No significant loss of adhesion after 30 days of continuous testing. No blistering or other deleterious effects. No migration of water into the substrate.
Standard Colors	Elastuff™ 101 is available in standard Light Gray only. Elastuff™ 103 is available in standard White.

PERFORMANCE PROPERTIES & ADVANTAGES

Building Code Acceptance: These UL-790 Class "A" roofing systems are accepted by all major model building code authorities for class "A" construction. The code authorities include the Uniform Building Code (UBC), Building Officials and Code Administrators (BOCA) and Southern Building Code Authority (SBCA).

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Elastuff™ 101 & Elastuff™ 103

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APPROVALS	
UL 790 Class A	UL-790 Class "A" Systems: Elastuff™ is UL-790 Class "A" Classified over spray-applied polyurethane foam. Refer to UL Building Materials Directory for foam manufacturers and types, foam thicknesses and densities, inclines and coating requirements of rated roof systems.
CA Fire Marshal	4175 767:0102
CRRC (Cool Roof Rating Council coolroofs.org	*Elastuff™ 103 White* Initial Solar Reflectance 0.81 Initial Thermal Emittance 0.89 Initial SRI 101 Product ID 0614-0003
Department of Energy, ENERGY STAR®	Approved: Elastuff™ 103 white
California Title 24	Meets all Title 24 reflectivity & emissivity criteria.

PERFORMANCE PROPERTIES & ADVANTAGES

Resistance to Accelerated Weathering: Test panels were placed in the QUV Accelerated Weathering Tester. Cycling is set at 4 hours of ultraviolet radiation, during which time temperatures reach approximately 135°F (57°C), and 4 hours with no U.V. radiation. A water bath at the bottom of the unit is maintained at 100°F (38°C) to create a constant high humidity condition. After 3,000 hours of continuous testing, the **Elastuff™ 101 & Elastuff™ 103** system showed no surface checking or cracking, no delamination, no loss of flexibility and no chalking. Tested in accordance with ASTM G53.

Resistance to Freeze-Thaw: Elastuff™ 101 & Elastuff™ 103 test panels were exposed to freeze-thaw cycles under complete immersion in deionized water. Cycles consisted of 16 hours at 0°F (-18°C) and 8 hours at 70°F (21°C). After 4 complete cycles, the physical integrity of the coating remained unaffected. There was no loss of adhesion, and no blistering or softening.

Water Absorption: 3" (7.5 cm) free film discs were immersed in deionized water at 70°F (21°C). After 7 days immersion, **Elastuff™ 101** showed less than 1% weight gain, while **Elastuff™ 103** showed less than 2.5% weight gain. No visual effect was observed and all elastomeric properties were retained. Tested in accordance with ASTM D543.

Resistance to Salt Spray: Coated polyurethane foam 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% sodium chloride by weight. After 500 hours of continuous testing, the **Elastuff™ 101 & Elastuff™ 103** system had no loss of adhesion, no blistering or softening and no loss of flexibility. ASTM B 117.

Bond Strength: Instron Universal Testing Instrument—50 to 60 lbs./in² (0.34–0.41 MPa) breaking strength. There was no adhesive failure between the **Elastuff™ 101** coating and the polyurethane foam substrate. **Elastuff™ 101** remained totally bonded to the polyurethane foam under all stress conditions. Breaking point occurred within the polyurethane foam itself. ASTM C297.

Impact Resistance: Steel Ball Drop Procedure using a 12 ounce (340 gram), 1¾" diameter (4.45 cm) steel ball dropped from a height of 20 ft (6.1 m) onto 2.7 lb/ft³ polyurethane foam coated with the **Elastuff™ 101** & **Elastuff™ 103** system. No surface cracks or breaks were observed in the coating. Test is adapted from National Bureau of Standards "Falling Hailstone Test".

APPLICATION INFORMATION

Elastuff™ 101 Base Roof Coating

SUBSTRATE PREPARATION: All surfaces shall be dry and clean, and free from any dirt, grease, oil, pollution fallout, loose rust, form release agents, surface chemicals, or other foreign contaminants that could interfere with adhesion. Remove oxidation, chalking, and/or loose paint or coating from previously painted or coated surfaces by water blasting. Surfaces shall be free of sharp projections, ridges, and loose aggregate. Any cracks, splits, tears, seams, holes, protrusions, blisters, drains, scuppers, vertical/ horizontal interfaces, etc., must be reinforced using **UniTape Seam Tape**, as per guidelines for each individual substrate. Incidental metal, cementitious decks, or wood may require priming. No primer needed on fresh SPF. See gaf.com for more details.

MIXING: Thoroughly mix using a power mixer for a minimum of 5 minutes prior to application. For 5-gallon (19 L) pails, use a 3" (76 mm) minimum-diameter mixing blade; for 55-gallon (208 L) drum, use a 6" (152 mm) minimum diameter blade.

APPLICATION: Apply to polyurethane foam surfaces between 24 and 72 hours after final application, depending on climate and manufacturer (refer to foam manufacturer for more information). Apply within this time frame to prevent surface oxidation that would interfere with coating adhesion. Apply in two or more separate coats to ensure proper coverage and cure rate, and to achieve a pinhole-free continuous film. Each coat must be dry and cured before an additional coat is applied. All surfaces must be uniformly coated and free from voids, pinholes, or blisters. Moisture curing in hot humid weather requires application of thinner coats. Drier weather may require misting of the membrane. Apply product with an airless sprayer, covering the surface at an even rate. Use an airless spray pump with a 1 gallon-per-minute (3.8 L/minute) output and 2,000 psi (13,790 kPa) pressure capability. Use a reversible, self-cleaning tip with orifice size 0.021" – 0.035" (0.5 – 0.9 mm) and a fan angle of 40° to 50°. Filter screens should be 30 mesh or larger. Use a 3/8" (9.5 mm) minimum inside diameter, nylon high pressure-type hose for lengths up to 75 ft. (23 m) from pump. For 75 ft. – 200 ft. (23 – 51 m), use 1/2" (12.7 mm) inside diameter hose added to pump side of existing 3/8" (9.5 mm) hose to maintain pressure and delivery. Over 200 ft. (51 m), use 5/8" to 3/4" (16 to 19 mm) inside diameter hose added to pump side of existing hose. Apply at a minimum rate of 100 ft²/gallon (2.5 m²/L) per coat. Total coverage depends on substrate. Rough substrates will require more. Minimum 2 coats required. **Elastuff™ 101** Base Roof Coating MUST be coated over within 48 hours with **Elastuff™ 103** Roof Coating.

Apply in two coats at a minimum total rate of 1-1.5 gallons per 100 ft² (.4-.6 l /m²). Consult GAF's product specifications for specific film thickness requirements to qualify for GAF's product warranty.

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APPLICATION INFORMATION, CONT'D.

Elastuff™ 103 Roof Coating

SUBSTRATE PREPARATION: All surfaces shall be dry and clean, and free from any dirt, grease, oil, pollution fallout, loose rust, form release agents, surface chemicals, or other foreign contaminants that could interfere with adhesion. Remove oxidation, chalking, and/or loose paint or coating from previously painted or coated surfaces by water blasting. Surfaces shall be free of sharp projections, ridges, and loose aggregate. Any cracks, splits, tears, seams, holes, protrusions, blisters, drains, scuppers, vertical/ horizontal interfaces, etc., must be reinforced using **UniTape Seam Tape**, as per guidelines for each individual substrate. See gaf.com for more details.

MIXING: Mix one quart (.94 L)of Elastuff **103** Part B catalyst/ booster unit per 5 gallons (19.1 L) of ELASTUFF **103** Part A ,2 gallons (7.6 L) of Elastuff **103** Part B catalyst/booster per 55 gallon (208 L) drum of ELASTUFF **103** Part A, or one half-pint (0.24 L) catalyst/booster unit per 1 gallon (3.8 L) of ELASTUFF **103** for larger quantities. Thoroughly mix using a power mixer for a minimum of 5 minutes prior to application. For 5-gallon (19 L) pails, use a 3" (76 mm) minimum-diameter mixing blade; for 55-gallon (208 L) drum, use a 6" (152 mm) minimum diameter blade.

APPLICATION: Apply to polyurethane foam surfaces between 24 and 72 hours after final application, depending on climate and manufacturer (refer to foam manufacturer for more information). Apply within this time frame to prevent surface oxidation that would interfere with coating adhesion. Apply in two or more separate coats to ensure proper coverage and cure rate, and to achieve a pinhole-free continuous film. Each coat must be dry and cured before an additional coat is applied. All surfaces must be uniformly coated and free from voids, pinholes, or blisters. Moisture curing in hot humid weather requires application of thinner coats. Drier weather may require misting of the membrane. Apply product with an airless sprayer, covering the surface at an even rate. Use an airless spray pump with a 1 gallon-per-minute (3.8 L/minute) output and 2,000 psi (13,790 kPa) pressure capability. Use a reversible, self-cleaning tip with orifice size 0.021" – 0.035" (0.5 – 0.9 mm) and a fan angle of 40° to 50°. Filter screens should be 30 mesh or larger. Use a 3/8" (9.5 mm) minimum inside diameter, nylon high pressure-type hose for lengths up to 75 ft. (23 m) from pump. For 75 ft. – 200 ft. (23 – 51 m), use ½" (12.7 mm) inside diameter hose added to pump side of existing 3/8" (9.5 mm) hose to maintain pressure and delivery. Over 200 ft. (51 m), use 5/8" to ¾" (16 to 19 mm) inside diameter hose added to pump side of existing hose. Apply at a minimum rate of 100 ft²/gallon (2.5 m²/L) per coat. Total coverage depends on substrate. Rough substrates will require more. Minimum 2 coats required. Coats MUST be installed within 48 hours of each other.

Apply in two coats at a minimum total rate of 1-1.5 gallons per 100 ft² (.4-.6 l /m²). Consult GAF's product specifications for specific film thickness requirements to qualify for GAF's product warranty.

LIMITATIONS & PRECAUTIONS

Elastuff™ 101, and **103** components are affected by moisture and must be protected from moisture contamination. Keep all containers tightly closed during storage. Containers are factory sealed with an inert gas to prevent contamination. For further storage after opening, containers must be purged with nitrogen gas or dry air and tightly sealed to protect from moisture contamination.

Elastuff™ 101 & **Elastuff™ 103** is slippery when wet, as are loose roofing granules. Exercise caution when walking on a roof under these conditions. Adequate precautions must be taken when applying **Elastuff™ 101** & **Elastuff™ 103** to occupied buildings to ensure that air conditioners and ventilation units are turned off and covered to prevent solvent vapors from entering the building. Windows should also be kept closed. Signs should be posted around the area to advise building occupants or visitors of the spray activity.

SAFETY & HANDLING

Solvents in **Elastuff™ 101**, and **103** are flammable. Use only in a well ventilated area. Keep away from heat, sparks, open flames or lighted cigarettes. Use explosion-proof application equipment, which has been grounded and bonded.

If personal exposure concentrations cannot be maintained below the appropriate OSHA/NIOSH exposure limits using engineering controls or natural ventilation, an approved respirator may be appropriate based on employer-determined exposure levels.

For specific information regarding safe handling of this material, refer to product Safety Data Sheet (SDS).
For specific information on safety requirements, refer to OSHA guidelines.

CLEAN UP

Clean equipment with MEK or Methylene Chloride. Do not leave Methylene Chloride in fluid hoses or pumps for prolonged periods. It can cause swelling and deteri- oration of hoses and corrosion in the pump.

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