



POLYGEM
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307FR Lite Flex II™ Sculpting Epoxy

SEMI-RIGID - LIGHTWEIGHT - PUBLIC SPACE SAFE

E-84 CLASS A FLAME-RATED



ZOO POXY™
theming epoxy

TB - TECHNICAL BULLETIN

PRODUCT DESCRIPTION

307FR Lite Flex II™ Sculpting Epoxy is a two-component, semi-rigid epoxy system that is E-84 Class A Flame-Rated and public space safe. It is available in **BLACK** or **TAN** and is formulated to be an easy-to-mix “putty-like” consistency that is commonly used to create display elements that are semi-rigid and extremely tough. **307FR Lite Flex II** is also great for industrial bonding applications. It is solvent free and contains no VOCs.

307FR Lite Flex II cures to a strong and semi-flexible, material with excellent impact and abrasion resistance.

Cured **307FR Lite Flex II** withstands freeze/thaw cycles when used for exterior projects.

Use to make perfectly detailed tree branches, planks and other themed elements for zoos and amusement parks. Because finished elements are semi-rigid, reptiles and birds can comfortably grip them without affecting the material.

WORKING FEATURES & BENEFITS

EASY TO MANIPULATE

- **Can Be Smoothed with Water**
- **Can be Sculpted, Stamped, or Textured**
- **Bonds to Itself and Many Other Substrates**
- **Will Not Melt or Dissolve Foam Surfaces**
- **Easy to Clean Up with Just Water**

USE WITH POLYGEM THICKENING AGENT

Polygem Thickening Agent allows you to customize your working consistency from a “putty” to a thicker “dough” or “clay” material to best fit your preferred working style and project needs.

Thickening Agent makes **307FR Lite Flex II** easier to manipulate, sculpt, & stamp. It also minimizes sag when applying the material to vertical surfaces. Adding Thickening Agent will increase coverage rate.

NOTE: Thickening will reduce **307FR Lite Flex II**'s flexibility. The more added the less flexible the material will be.

When using as an adhesive, do not add **Thickening Agent**.

SUBSTRATES

307FR Lite Flex II forms a permanent bond to a variety of surfaces including foam, steel and stainless steel, wood, PVC, ABS plastic, concrete and more.

NOTE: 307FR Lite Flex II DOES NOT BOND to silicone, polyethylene, polypropylene, or plastic wrap.

PERFORMANCE BENEFITS OF CURED MATERIAL

- **ASTM E-84 Class A Flame Rated**
- **No VOCs**
- **Chemically Inert**
- **No Solvents**
- **Halogen-Free**
- **Contains No Heavy Metals**
- **Cures to a Durable, Semi-rigid Material**
- **Easy to Sand, Shape, and Machine**
- **Paintable, Stainable and Pigmentable**
- **Weather Resistant to Heat & Moisture**
- **For Aquatic Use**
- **Solvent Resistant**

THICKENING AGENT TO ADD PER KIT SIZE

THESE ARE SUGGESTED STARTING AMOUNTS WHEN ADDING BY WEIGHT

2 Gallon Kit 20 lbs (9.08 kgs) add 1.6 lb. (680 g) or **1 Gallon Kit**

10 Gallon Kit 100 lbs (45.36 kgs) add 8 lb. (3.6 kg) or **5 Gallon Kit**

UNIT SIZE & COVERAGE RATE @ ¼ in. (6.35 mm)

2 Gallons 20 lb (9.08 kg) **10 square ft.** (0.92 m²)

10 Gallons 100 lb (45.36 kg) **50 square ft.** (4.6 m²)

TECHNICAL SPECIFICATIONS

TYPICAL PROPERTIES | All values measured after 7 days at 73°F (23°C).

Mix Ratio: 1A:1B | Pot Life: 45 Min.* (100 gms)
by weight or volume

Mixed Viscosity: Putty **ASTM D-2393**

Working Time*: 1 Hr. | **Cure Time:** 24 Hrs*

Shore Hardness: 90 A **ASTM D-2240**

Colors: Available in Black or Tan (Colors may vary)

Die C Tear Strength, pli: 300 **ASTM D624**

Specific Gravity: 1.55 g/cc **ASTM D1475**

Specific Volume: 17.9 cu. in./lb. **ASTM D1475**

Properties are based on the mixed material without Polygem Thickener.

* When mixed or cured at 73°F (23°C).

Manufactured by Polygem, 5600 Lower Macungie Rd. | Macungie, PA 18062 | 630-231-5600 | Made in USA

012926PA | Data sheets are subject to change without notice.

307FR Lite Flex II™ Sculpting Epoxy

SEMI-RIGID 2 COMPONENT SCULPTING EPOXY THAT IS E-84 CLASS A FLAME-RATED

PROJECT PREPARATION

BEST PRACTICE: CONDUCT A SMALL-SCALE TEST.

Before mixing substantial amounts of epoxy, always conduct a small-scale test to ensure the planned material & process yields desired results.

- 1. Storage** – Store and use product at room temperature 73°F (23°C) **DO NOT USE** below 60°F (16 °C).
- 2. Safety** – Use in a well-ventilated area (“room size” ventilation). If you use any epoxy system regularly, wearing a NIOSH-approved respirator is advised. Wear safety glasses, long sleeves, and rubber gloves to minimize skin contact. Wear nitrile or vinyl gloves only.
- 3. Plan Your Project & Rate of Coverage** – Recommended minimum thickness is ¼ in (6.35 mm).
- 4. Prepare Your Substrate/Surface** – If applying to smooth surfaces such as PVC, plastics, glass etc., surface may be roughened with sandpaper (120 grit) to aid adhesion. Clean surface thoroughly to ensure it is free of dust, oils, release agents, etc.
For Metal Substrates– Abrade the surface to a white metal finish, then wipe down and clean it thoroughly. Apply a fiberglass sheet saturated in a laminating epoxy to the surface. When possible, wrap the sheet around the substrate to ensure a good mechanical bond before applying **307FR Lite Flex II**.
- 5. Measure & Mix**– After pre-mixing Parts A and B, measure out equal parts 1A:1B by volume. Combine and mix material thoroughly until “streak-free”. Large volumes can be mixed on a flat surface using two trowels. **DO NOT** mix more than can be applied within the working time of 1 hour.
- 6. When using with Polygem Thickening Agent** – First, thoroughly coat gloves and working area with **Thickening Agent** to prevent sticking. Knead Parts A & B together while folding small amounts of powder into the mixture. The amount of powder to add depends on the desired working consistency. Continue to fold mixture repeatedly until it is streak-free.
- 7. Application:** Trowel or spread by gloved hand onto your substrate.

WORKING TIME - MATERIAL IS MASS SENSITIVE.

More Mass = Less Time to Work.

Apply and spread quickly to achieve the maximum working time. Temperatures above 73°F (23°C) will reduce working time.



SCULPT | STAMP | TEXTURE

SCULPT: Sculpt using a gloved hand and/or tools to shape material to your desired form. Water may be used to minimize material build up on gloves and/or tools.

STAMP: When stamping, we recommend using a flexible rubber stamp. Using a spray bottle filled with water, lightly dampen your stamp, and press it firmly into the material. Once the impression has been made, peel the stamp away carefully. There should be minimal transfer of material onto the stamp.

TEXTURE: Smooth Glass-Like Surface

Apply clear plastic food wrap to the uncured epoxy and smooth it to eliminate all wrinkles. Leave the wrap in place until the epoxy cures. Once cured, the plastic wrap can be peeled away easily, leaving a high gloss finish.

Rough, Distressed or Patterned Surface

A gloved hand or tools may be used to roughen or distress the surface. Small amounts of water applied to the tools or surface before & during texturing will minimize material build up.

CURING

307FR Lite Flex II cures in approximately 24 hours at room temperature 73°F (23°C). Elevated temperatures will accelerate this cure time. Full physical properties will be achieved in approximately 7 days.

FINISHING, PAINTING, AND CLEAN UP

Finishing – Cured material may be finished either by hand or with power tools. For best results & to minimize build up of material, use power tools at lower speeds.

NOTE: Wearing a dust mask is recommended when machining this material.

Painting – Cured **307FR Lite Flex II** can be painted with any water or solvent based paint system available from your local distributor. Follow paint manufacturer's instructions.

Sealing – For outdoor or post-finish applications, **307FR Lite Flex II must be sealed** with a commercially available, UV-resistant 2K clear coat. Apply in accordance with the clear coat manufacturer's instructions to ensure long-term performance and environmental resistance.

IMPORTANT: Sealing is optional for components intended for aquatic environments. However, if a component has been painted, sealing is **mandatory**. The recommended sealer is Polygem **1618™ CLEAR**.

Clean Up – Uncured **307FR Lite Flex II** by removing as much uncured material from the surface as possible. Clean any remaining residue with soap and water.

Cleaning – When cleaning cured **307FR Lite Flex II** wipe with a mild solvent followed by a water rinse. **DO NOT** allow water or solvent to pool on the surface.



POLYGEM

POLYGEM LIMITED WARRANTY:

Polygem warrants that during the shelf life of the product (as determined from the date of manufacture), the product will conform to the specifications provided in this technical bulletin. **POLYGEM MAKES NO OTHER WARRANTIES, EXPRESSED, IMPLIED, OR STATUTORY, INCLUDING WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.** Neither any performance or other conduct, or any oral or written representation, statement or advice provided by Polygem or any of Polygem's distributors, agents, or employees will create a warranty, or in any way increase the scope or duration of this limited warranty. Polygem will have no warranty obligation if the product becomes defective, in whole or in part, as a result of: (i) the transportation of the product; (ii) any alteration or modification to the product by third parties; or (iii) improper handling or storage of the product (including improper handling or storage by third-party carriers or distributors).