

# Free Form™ Habitat™ Flex FR

Mix & Apply-By-Hand Epoxy Dough



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## PRODUCT OVERVIEW

**Free Form™ Habitat™ Flex FR Epoxy Putty** is a mix-and-apply-by-hand putty that is certified flame resistant (E84, Class A) and is used to create display elements that are semi-rigid and extremely tough. It is also used for industrial bonding applications. Habitat™ Flex FR is solvent free and contains no VOC's. Working time is 90 minutes and handling time is 24 hours at room temperature (73°F/23°C). Cured epoxy has some flexibility with excellent impact resistance and abrasion resistance.

**Use with or without Habitat™ Folding Powder™** – mix equal parts A+B and apply Habitat™ Flex FR. For thickening, add Folding Powder™ into epoxy putty. Folding Powder™ reduces stickiness and makes the epoxy more handle-able. Once putty is applied, it can be stamped with a silicone rubber stamp to create repeating patterns with intricate detail over a large surface area. Surface can be smoothed with alcohol or water. New Habitat™ Flex FR will bond to cured Habitat™ Flex FR without delamination.

**Habitat™ Flex FR** forms a permanent bond to a variety of surfaces including foam, steel and stainless steel, wood, PVC, ABS plastic, concrete and more. It withstands freeze/thaw cycles for exterior applications. When using as an adhesive, **do not** use folding powder. It is easy to paint with acrylic paints or stains. Use to make perfectly detailed tree branches, vines, 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.

## PROCESSING RECOMMENDATIONS

### TECHNICAL OVERVIEW

Mix Ratio: 1A:1B by weight or volume

Mixed Viscosity: Dough (ASTM D-2393)

Pot Life: 90 minutes (ASTM D-2471)

Handling Time: 24 hours

Specific Gravity, g/cc: 1.55 (ASTM D-1475)

Specific Volume, cu. in. /lb.: 17.9 (ASTM D-1475)

Color: Light Brown

Shore A Hardness: 90 (ASTM D-2240)

Die C Tear Strength, pli: 300 (ASTM D-624)

\* All values measured after 7 days at 73°F/23°C  
\*\* Depending on mass

**Safety** – Use in a well-ventilated area ("room size" ventilation). Generally, if you use any epoxy system on a regular basis, 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.

**Rate Of Coverage** - Assuming a thickness of 0.25 in. (6.3 mm), 1 lb. (454 g) of Free Form™ Habitat™ Flex FR will cover approximately 71.6 in<sup>2</sup> (462 cm<sup>2</sup>). The following table indicates coverage rate per size of Habitat™ Flex FR packaging.

Habitat™ Flex FR Unit Size	Coverage Rate
1-Gallon (20 lb./9.08 kg.)	10 ft <sup>2</sup> (0.92 m <sup>2</sup> )
5-Gallon (100 lb./45.36 kg.)	50 ft <sup>2</sup> (4.6 m <sup>2</sup> )
Drum (1100 lb./498.96 kg.)	525 ft <sup>2</sup> (50.6 m <sup>2</sup> )

**How Much Folding Powder™ Do I Need?** - Amount of powder recommended per unit of Habitat™ Flex is as follows:

Habitat™ Flex FR Unit Size	Folding Powder™ Recommended
1-Gallon (20 lb./9.08 kg.)	1.5 lb. (680 g)
5-Gallon (100 lb./45.36 kg.)	8 lb. (3.6 kg)
Drum (1100 lb./498.96 kg.)	80 lb. (25 kg)

**Preparation** – Materials should be stored and used at room temperature (73°F/23°C). This product has a limited shelf life and should be used as soon as possible. Mixing should be done in a well-ventilated area. Wear safety glasses, long sleeves and rubber gloves to minimize contamination risk. **Before mixing materials, apply Folding Powder™ to work surface** in a 1/4" (6.3 mm) layer. Powder gloves with Folding Powder™ to eliminate sticking. **Because no two applications are quite the same, a small test application to determine suitability for your project is recommended if performance of this material is in question.**

## Safety First!

The Material Safety Data Sheet (MSDS) for this or any Smooth-On product should be read prior to use and is available upon request from Smooth-On. All Smooth-On products are safe to use if directions are read and followed carefully.

### Keep Out of Reach of Children

**Be careful.** Use only with adequate ventilation. Contact with skin and eyes may cause irritation. Flush eyes with water for 15 minutes and seek immediate medical attention. Remove from skin with waterless hand cleaner followed by soap and water.

**Important:** The information contained in this bulletin is considered accurate. However, no warranty is expressed or implied regarding the accuracy of the data, the results to be obtained from the use thereof, or that any such use will not infringe upon a patent. User shall determine the suitability of the product for the intended application and assume all risk and liability whatsoever in connection therewith.

**Applying A Release Agent** – This product is adhesive and will bond to many surfaces. Where adhesion is not desired, a thorough application of Ease Release™ 200 release agent (available from Smooth-On) is recommended.

## MEASURING & MIXING

**Measuring** - Free Form™ Habitat™ Flex FR comes as two parts. Dispense equal amounts of Part A and Part B. These products have a limited shelf life and should be used as soon as possible.

**Mixing** - This product is mixed by hand. **You must wear gloves when mixing this material**, wearing vinyl gloves reduces inhibition risk.

**Without Folding Powder** - measure equal amounts of A and B and stir with a flat edge, stiff paddle until all color streaks disappear (uniform color).

**With Folding Powder** - First, thoroughly coat gloves with folding powder to prevent sticking. Knead parts A+B together while folding powder into mixture. The amount of powder to add depends on desired working consistency. The more powder you add, the thicker the mixture becomes. Fold mixture into itself repeatedly until desired consistency is attained (3-5 minutes or a minimum of 20 folds). For more on correct mixing technique, you can view our video; [www.smooth-on.com/habitatmixing](http://www.smooth-on.com/habitatmixing)

## APPLYING

Apply by gloved hand to horizontal, vertical or inverted surface. Important; pot life and cure time are reduced with elevated temperatures and increased in colder temperatures.

**Stamp, Sculpt or Mold** - Once in place, putty can be stamped using a rubber stamp (Rebound™ 25 silicone). Apply alcohol to stamp detail before using for precise detail and to keep stamp clean. Sculpt using gloved hands or tools. Putty can also be pressed into a silicone rubber mold to reproduce detail.

**Smoothing Surface** – Epoxy surface can be smoothed with water or isopropyl alcohol. **Option;** cover putty surface with clear plastic food wrap and smooth or sculpt with hand or tool. Leave wrap in place until material cures and remove. Cured surface will have a high gloss finish.

## CURING

Habitat™ Flex FR can be handled after 24 hours at room temperature. Full physical properties are reached in 7 days. In most cases, material will have a slight “tack” for up to 48 hours.

## PAINTING & CLEAN UP

**Painting** – Cured Free Form™ Habitat™ Flex FR can be primed and then painted with acrylic enamel paints. Let paint fully dry before putting part into service.

**Removing Uncured Free Form™ Habitat™ Flex FR** - Remove as much uncured material from the surface as possible. Clean any residue with soap and water. **Optional** - Use E-POX-EE KLEENER™ available from Smooth-On.

**For helpful mixing and application tips, visit [www.smooth-on.com/habitat](http://www.smooth-on.com/habitat)**



**Call Us Anytime With Questions About Your Application.**

Toll-free: (800) 381-1733 Fax: (610) 252-6200

The new [www.smooth-on.com](http://www.smooth-on.com) is loaded with information about mold making, casting and more.