

SILPAK SP-328-12

Rigid Polyurethane Foam

SP-328-12 A/B is a two-component, self-skinning, rigid, closed cell, water blown, polyurethane rigid foam system. SP-328 foam can be hand mixed or machine dispensed. Small batch mixes are easily achieved using fast, aggressive mixing methods with larger mixes better achieved using a high shear mixing blade (Jiffy Mixer). Once cured, parts can be stained, sanded, or painted shortly after demolding.

Features

- 1:1 volume mix
- Excellent Flow
- Self-skinning
- Fast de-molding times

Applications

Recommended for any application where a high-density, light-weight part is required:

- Furniture production
- Hollow, light weight furniture parts
- Picture frames
- Duck Decoys
- Floats

Physical and Handling Properties

Property	Value
Density/cu ft (ft ³)	12 lb / ft ³
Expansion Rate (volume)	<6 times mixed volume
Compressive Strength	300 psi
Cream Time, sec.	60
Rise Time	2 min / 30 sec
Demold Time, min.	10-15
Color	Light brown
Mix Ratio, by weight	52% A : 48% B
Mix ratio by volume	50 A : 50 B
Initial Viscosity, at 77°F, Part A, cP	150-190
Initial Viscosity, at 77°F, Part B, cP	900-1300
Specific Gravity, Part A	1.2
Specific Gravity, Part B	1.07
Expansion Rate (Volume)	<6 times
Compressive Strength	300 psi

Values listed above are typical and not intended for use in specifications.

Proper Use and Safety

Read all instructions and safety data sheets prior to use. Consult safety data sheets for all recommended safety precautions.

Mold Preparation

Polyurethane foams adhere to most surfaces and a release agent should be applied prior to casting. Silicone RTV and hard tool molds (Aluminum, Fiberglass, Plaster, and Epoxy) can be used to mold foam parts. Prepare mold surface with proper mold release such as Mold Wax (**Partall High Temp Wax**) prior to casting when using non-silicone molds. Mold should also be completely free of any moisture. For optimal castings, mold should be heated to 75-85F for initial casting. Once mold is heated and cycled, it should maintain heat for continued production. **If using Silicone RTV Mold, ensure that rubber is stiff enough so as not to distort under the packing pressures of foam.*

Mixing

Mix materials by volume at recommended ratio—off ratios can result in poorly formed parts and surface. Mix A & B with high-speed mixer for 15-20 seconds, and pour immediately into mold cavity, swishing liquid over mold surface to improve product's surface skin. Small batch mixes are easily achieved using fast, aggressive mixing methods. Several experimental parts will be needed to adjust the amount of material to achieve a satisfactory part.

Curing

Over-packing foams by 3-5% over their free-rise density is recommended to achieve best surface detail and mold fill. Proper mold venting such as the use of bleeder paper or a vented lid (holes drilled in various areas) that allows air to escape as foam rises should be firmly clamped in place prior to material rise. Once rise begins, avoid agitating or moving molds, which may cause foam cells to collapse. Castings should remain in mold until cured.

Finishing

Unfinished castings are subject to discoloration, yellowing, and chalking when exposed to direct or indirect sunlight and should be painted, coated, or sealed. Oil-based paints work well. Using an oil-based primer will improve paint adhesion. If release was used, wash the surface with grease dissolving soap before painting. It is best to perform any finishing when parts are fully cured, 24-72 hours at 75°F.

Storage & Shelf Life

- A. Component A (Isocyanate) must be stored in tightly closed containers and kept protected from moisture and foreign materials. Storage area should be maintained at between 64F and 86F (18C - 30C).
- B. Component B (Resin) is hydroscopic. Containers must be kept closed to prevent absorption of moisture. Storage area should be maintained at between 64F and 86F (18C - 30C).

Shelf life of materials when kept in unopened sealed containers, at the recommended storage conditions, is 6 months. Containers should not be opened until ready for use. Once opened, storage life can be extended with the use of a purging gas—Nitrogen.

Accessories

Colorant

CU Pigment Red, Yellow, White, Blue, Black, Brown, Fleshtone. All pigments should be added to the "B" side only at 1-2%. Castable urethanes are affected by direct and indirect sunshine and should be painted with oil based paint to protect color and surface.

Release

PartAll Paste Waxes Hi Temp Wax or Paste #2 Mold release for hard tooling molds.
PartAll Film #10 PVA liquid release, Cleans off part with warm soap and water.

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