

# X-30 Polyurethane Foam

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## Tips

- Do **NOT** combine 'X-30' Foam with any other brands of foam.
- 'X-30' can be fiberglassed with TAP Polyester and Epoxy Resins. Many other foams (Styrofoam or polystyrene) will dissolve when coated with a polyester resin.
- Shrinkage is caused by the mix ratio being incorrect or by inadequate mixing.
- Inadequate mixing creates large coarse cells, causing water absorption when environment is wet.
- Stir/shake individual components before measuring.
- Open caps slowly to release any pressure.
- 'X-30' foam yield may vary due to size, temperature, and configuration of cavity.
- 'X-30' must be protected from sunlight when used in an exterior application. Latex paint will provide adequate protection.
- 'X-30' Foam is resistant to petroleum products when fully cured and can be used in bilges. Pour only 12" of foam thickness per 4-hour period and protect from excessive heat or flame.
- Component temperatures over 70°F will dramatically reduce the time before foaming begins.
- Use caution when encapsulating metal tanks. Small voids in the foam may accumulate water which cannot evaporate and will accelerate corrosion (especially on aluminum).

## Technical Data

### Physical

Core Density	2.0 - 2.1 lbs per cu ft
K-Factor (BTU/hr-ft <sup>2</sup> F)	.145
R-Value	5.6 per inch
Closed Cell Content	90 - 93%
Compressive Strength	25 - 30 psi
Tensile Strength	30 - 40 psi
Shear Strength	25 - 30 psi
Water Absorption (gms/cc)	.020
Water Vapor Transmission	3.0 perms
Oil Resistance	no change

### Dimension Stability      % Volume Change

-20°F • 7 days	-0.8%
160°F • 7 days (dry)	+2%
160°F • 100% R.H. 7 days	+6.8%

**Buoyancy** • One cubic foot will support 60 pounds.

### Maximum Service Temperature

Humid Conditions: **158°F**      Dry Conditions: **200°F**

**Note:** Elevated temperature can cause expansion.

### Available Kits

Available Kits	Foamed Volume in Cubic Feet (approximate)	Flotation at (approximate)
Quart Kit	1	60 lb
One-Half Gallon Kit	2	120 lb
* 2-Gallon Kit	8	480 lb
* 10-Gallon Kit	40	2400 lb

Drum Kit Prices upon Request

\* Mixing quantities larger than 1/2 gallon requires a power mixer and experience with foam properties.

## Estimating Volume Requirements

Determine cubic feet (volume) needed to fill area with 'X-30' Foam by using this formula:

$$\text{length} \times \text{width} \times \text{height} = \text{volume}$$

**Example:** A rectangle (or square), such as a box, measuring 18" x 24" x 36" = 15,552 cubic inches.

One cubic foot (12" x 12" x 12") contains 1728 cubic inches. (15,552 divided by 1728 equals 9 cubic feet)

To determine volume in an irregular area, fill with water (or other measurable substance) to measure gallons needed. Convert determined gallons to cubic feet (7½ gallons per cubic foot) and divide number of gallons in area by 7½ to establish cubic foot volume needed. Area to be foamed must be **completely dry** before filling with 'X-30' Foam.



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## Major Uses

### • Flotation

Boats, barges, docks, and floats

### • Reinforcement

Add strength and rigidity

### • Insulation

Thermal and sound insulation

### • Void Filling

Light weight, fills irregular space

### • Display

Super light weight stage props

### • Safety

Buoyancy

### • Packaging

Conforms to any shape

### • Encapsulation

Protection from impact, shock, water

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## Measure

Stir or shake the contents of 'X-30' Foam, both Part 'A' and Part 'B' thoroughly. Measure equally Part 'A' and Part 'B' by volume. Use individual containers (with graduated markings) for measuring each component.



## Mix

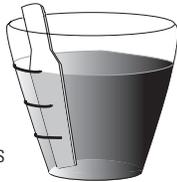
Use a mixing container larger than the combined ingredients of 'A' and 'B' to allow room for vigorous mixing. Mix thoroughly until material is free of streaks. Pour immediately as foaming action will be rapid. Thorough mixing of these components is essential to achieve a



good quality foam of uniform cell structure.

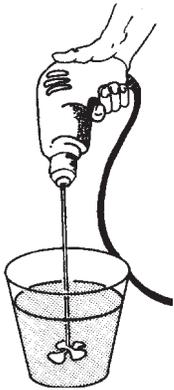
## Manual Mixing

A small volume (up to a pint of combined ingredients, 'A' and 'B') can be mixed by hand. Use a spatula or a flat stir stick in a straight-sided container. Before pouring, mix combined components swiftly and thoroughly until the mass is homogeneous.



## Mechanical Mixing

For large batches (1/2 gallon and up), components must be blended using a high-speed mixer with a suitable size agitator like TAP's Squirrel Mixer. Dip agitator to bottom of mixing container and start motor. Mix 15 to 20 seconds. Moving along bottom, sides, center, and top of the mass in that order. Pour before foaming starts. It may be helpful to chill components separately to 50 or 60°F before mixing to extend available mixing time. **Note:** Chilling can reduce the yield.



Large batches should be mixed by someone who is experienced in the use of foam.

## Pour

Pour measured and mixed 'X-30' Foam into a contained (but not fully enclosed) area. Amount of foam required to fill a cavity or mold depends primarily on size of the cavity (volume). There are secondary

factors, however, such as: bulk, configuration of the cavity, and temperature which affect density and amount of materials required. If the foam is allowed to expand freely without restrictions, a density of two pounds per cubic foot will be obtained.

A higher density can be obtained if the pour of foam is several cubic feet



or is restricted in a closed mold. (See **Caution 1** in the right column.) Foaming in confined cavities usually results in higher foam density and less volume. Elevated temperature has the effect of decreasing the density and increasing the volume. Ideal component temperature is 70°F for a maximum yield.

## Cure Time

Mixing time: **20 to 30 seconds** Rise time: **2 to 3 min**  
Tack-free: **3 to 10 minutes** Full cure: **24 hours**

Cured foams can be easily trimmed, cut, and shaped with common woodworking tools, such as: a cheese-grater type file, sandpaper, etc.

**Tip:** Use a cutoff piece of the cured 'X-30' Foam as a sanding block!

## Release Agents

'X-30' Foam will adhere tenaciously to itself as well as most surfaces, you and your clothes as well. Polyethylene film or polyethylene coated paper are good separating materials. TAP Industrial Mold Release can be used as a release agent. Test prior to using.

## Cleaning Equipment

Immediately clean all tools used in preparation of the foam with a suitable solvent, such as isopropyl alcohol. Cured foam is resistant to solvents.

## Liquid State Storage

TAP 'X-30' Foam contains a volatile fluorocarbon and should be stored at 70°F or lower. Never expose 'X-30' to excessive temperatures. Store in original container. Keep it tightly closed, clean, and dry. Before opening, it is advisable for container to be at a temperature not over 70°F. Loosen the cap slowly to release pressure that may have developed. Parts 'A' and 'B' should never be exposed to air for prolonged periods. Avoid moisture contamination, as moisture reacts with the reactive agents. After pouring measured quantity, tightly close containers to prevent loss of volatile fluorocarbon. When properly stored, both materials are stable for at least six months.

*Since TAP has no control over working conditions or workmanship, our liability is limited to the price of product.*

## Coating X-30

To protect cured 'X-30' from sunlight in exterior applications, it should be painted or fiberglassed. 'X-30' is a polyurethane foam that accepts TAP Polyester or Epoxy Resins. Fiberglass on 'X-30' produces a very strong and light weight product.

## Handling Precautions

### Important: Read Carefully

TAP 'X-30' Foam contains a reactive agent and is classified as a toxic material. Part 'A' contains Diisocyanate and Part 'B' contains 1, 1, 1, 3, 3 – Pentafluoropropane.

**Caution:** Strong skin sensitizer and eye irritant. Avoid contact with skin. Continued exposure can lead to allergic sensitivity. Use rubber gloves when handling. Use with adequate ventilation. Do not use near fire or flame. **KEEP OUT OF REACH OF CHILDREN.**

**Skin:** Wash skin with soap and water. Consult with medical personnel if irritation persists.

**Eyes:** Immediately flush with plenty of water for 15 minutes. Have eyes examined and treated by physician. Can cause cornea damage.

**Ingestion:** Consult medical personnel or poison control center. Do not induce vomiting.

**Inhalation:** Remove victim to fresh air. Consult physician.

**Note:** Due to combustibility 'X-30' Foam is not recommended for use in building construction. Refer to the **Urethane Safety Group Bulletin** for specific information. Available at your TAP store.

## Cautions

1. The rising foam will exert pressure on the mold or cavity walls, which can range from negligible (under free-rise nonrestricted conditions, i.e., with an open mold) to as high as 4-6 pounds per square inch (under restricted conditions i.e., with a closed mold). If molds and cavities are closed they must be suitably strong and rigid or reinforced to resist distortion from the pressure of expanding foam.
2. Provide vent holes (1/2" or larger) in enclosed molds or cavities to allow air and excess foam to escape as it expands.
3. Since 'X-30' adheres to itself, a cavity can also be filled with successive small pours rather than a single large pour. Allow 5 to 10 minutes between one pour and the next. However, it is more desirable to make a single pour to obtain uniform density and even distribution of stress.
4. Do not pour foam more than 12" deep in 24 hours to avoid excessive heat buildup.
5. Cured foam is combustible. Keep away from sparks/flame.