
TECHNICAL DATASHEET

# DAPCO® 40 High Temperature Casting Compound

## Description:

DAPCO® 40 is a two-component, pourable, silicone casting compound.

## Applications

DAPCO® 40 is most commonly used in composite manufacturing for trapped rubber molding. Trapped rubber molding is a cost efficient method for manufacturing composite parts. No expensive autoclave or vacuum bagging techniques are required. Tooling can be simplified to a mold, heat source, and DAPCO® 40 silicone rubber.

The silicone rubber expands at a predictable rate during the cure cycle of the composite part. Molding pressure is generated by constraining the expansion within an outer mold. The molding pressures generated by DAPCO® 40 can be controlled from as little as 10 psi to over 2,000 psi.

For specific mold design and pressures, request “A Guide to Trapped Rubber Molding” from your D Aircraft Representative.

DAPCO® 40 is also used as a caul or pressure intensifier to generate pressure in sharp radii and/ or complex detail areas of a composite part.

## Features and benefits:

- **Very low viscosity, providing ease of flow into intricate molds**
- **The ability to generate pressure at elevated temperature to densify laminates**
- **Low linear shrinkage (0.5%)**
- **High tear strength**
- **Continuous cycling to 400$^{0}$F**
- **No VOCs - 100% solids**

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## Typical properties

| | Part A | Part B | Mixed |
|---|---|---|---|
| Color | Yellow | Clear | Yellow |
| Solids, % | 100 | 100 | 100 |
| Appearance | Liquid | Liquid | Liquid |
| Density lbm/gal | 9.2 | 8.3 | 9.1 |
| Viscosity (cps @72$^0$F) | 70,000 | 3000 | 60,000 |

## Processing

**Mix ratio**

The recommended mix ratio for DAPCO® 40 is:

| | Weight | Volume |
|---|---|---|
| Part A | 100 | 100 |
| Part B | 6 | 6.6 |

DAPCO® 40 must be thoroughly blended to a uniform mixture in order to achieve optimum performance properties. After mixing, it is necessary to de-air DAPCO® 40 to remove air introduced into the material during mixing. Only 5 minutes is required after initial collapse of the material.

The mold should be prepared by using a thin, uniform coating of DAPCO 10080, a water/soap base release. DO NOT USE ANY OTHER RELEASE AGENTS WITHOUT CONSULTING A D AIRCRAFT REPRESENTATIVE! Pour DAPCO® 40 into the mold in a way that reduces introduction of air (tip mold at an angle).

**Working Life**

The pot life of DAPCO® 40 after mixing is 3 -6 hours.

**Curing**

All cure and post cure intervals are based on castings up to 1.0" thickness. For larger castings, extend all cure and post cure times.

Cure DAPCO® 40 at room temperature (70$^0$F) for a minimum of 24 hours.

Cure at 120$^0$F for 4 hours.

Remove casting from mold. FAILURE TO REMOVE CASTING AT THIS TIME COULD RESULT IN CASTING BONDING TO MOLD.

Cure at 350$^0$F for 4 hours.

Post cure at 400$^0$F for 4 hours. Casting is now suitable for continuous service at 375$^0$F.

## Surface preparation

The mold must be free from contaminates, i.e., dirt, oil, grease, etc. Clean the surface with a suitable solvent/cleaning agent and dry thoroughly.

**For Casting** Use DAPCO 10080 Mold Release. Apply a thin, uniform coat by wiping, brushing, or spraying. Allow to dry thoroughly.

**For Bonding** Use DAPCO 1-100 Primer. Apply a thin, uniform coat. Allow to cure for a minimum of 45 minutes. Once cured, you have 90 minutes to pour DAPCO® 40 onto the cured surface.

## Typical cured properties

| | |
|---|---|
| Hardness (Shore A) ASTM D224 | 35 |
| Tensile Strength (psi) ASTM D412 | 500 |
| Elongation (%) ASTM D412 | 200 |
| Tear Strength (pli) ASTM D624 | 100 |
| Linear C.T.E. (in/in/$^0$F) ASTM D2214 | $1.51 \times 10^{-4}$ |
| Bulk Modulus (psi) | $2.37 \times 10^4$ |
| Service Temperature ($^0$F)* | -65 to 400 |

*DAPCO® 40 requires a post cure of 4 hours @ 425$^0$F to achieve this service temperature.

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## Storage and handling

Store in a cool, dry place.

Keep containers tightly sealed.

## Safety

Exercise good housekeeping practices. Material Safety Data Sheets available upon request.

contact us

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