



## Technical Data Sheet

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### **Polycraft PU-5800 Variable Foam (Soft, Medium or Hard)**

*Two Part Hand Casting Polyurethane Foam System.*

Polycraft PU-5800 variable foam is a two component polyurethane foam system, that when mixed gives a medium density soft, medium or hard elastomeric foam. The foam is self-skinning, durable and has excellent physical properties. Typical free rise density is between 140 – 160 kgm-3, however the foam can be over packed in the mould to give higher densities of up to 500 kgm-3. The final hardness of the foam can be adjusted by small adjustments to the mixing ratio.

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### **Special Features**

- Variable Foam,
- Different mix ratios can be added
- Soft, Medium or Hard foam can be achieved
- Self-Skinning, Durable, Easily Pigmented, Rapid Demould

### **Mix Ratio**

Soft : 100A – 33B

Medium : 100A – 36B

Hard : 100A – 40B

### **Product Data**

Property	Units	PU-5800 A	PU-5800 B	PU-5800 Mix
Material	-	Formulated polyol blend.	Isocyanate	Polyurethane
Appearance	-	Clear, yellow liquid	Brown liquid	Flexible yellow foam
Viscosity (25°C)	mPa.s	600 – 800	150 – 250	
Density (25°C)	g/cm <sup>3</sup>	1.00 - 1.05	1.20- 1.25	
Cream Time (133g, 25°C)	Seconds	-	-	30 - 40
Tack Free Time (133g, 25°C)	Seconds	-	-	100 - 140
Rise Time (133g, 25°C)	Seconds	-	-	135 - 165
Exotherm (133g, 25°C)	°C			85 – 95

***For bulk castings using Medium and Hard PU5800, shrinkage of the cured product may be observed.***



Property	Standard	Units	PU-5800 Mix
Free Rise Density	kgm-3		140 - 160
Moulded Density Range	kgm-3		250 – 500
Tensile Strength		MPa	Soft - 0.19 – 0.21 Medium – TBC Hard - TBC
Tear Strength		kN/m	Soft - 0.93 – 0.94 Medium – 1.5 – 1.6 Hard - 2.25 – 2.35
Elongation at break		%	Soft - 120 – 140 Medium – TBC Hard - TBC

## **Method of Use**

### **Calculating Shot Size**

To calculate how much Polycraft PU-5800 variable foam is required to fill the mould, known as the “shot size”, first calculate the volume of the mould (in m<sup>3</sup>). The amount of foam required is then calculated as follows:

Amount of Polycraft PU-5800 variable foam (kg) = Desired Density (kgm-3) × Mould Volume (m<sup>3</sup>)

Polycraft PU-5800 variable foam has a free rise density of approximately 160 kgm-3, but minimum moulded density is approximately 250 kgm-3. Increasing the density will give a harder, less flexible foam.

### **Mould Preparation**

Polycraft PU-5800 variable foam should be cast into a strong, rigid mould with a silicone rubber coating. Alternatively a mould release agent such as Macsil or Macwax should be used. Ensure that the entire mould surface has been coated. The mould should be warmed to 25°C. It is important to allow some small bleed holes to allow any gas generated to escape.

### **Mixing and Pouring**

Once the mould has been prepared, accurately weigh out the required quantity of Polycraft PU-5800A variable foam into a clean mixing vessel. Weigh the required amount of Polycraft PU-5800B variable foam into the mix vessel and immediately mix the two components until they are homogenized. The mixed material should be cream / brown in colour and should be streak free. Poor mixing will result in poor quality foam. Immediately pour the mixed material into the mould. It is important that the mixing / pouring operation is completed before the cream time of the foam (30 seconds).

**Demould**

Polycraft PU-5800 variable foam is a fast curing system. Depending on mould volume and shape, the product can be demoulded after as little as 10 minutes. Full cure can take up to 72 hours.

**Trials**

When using Polycraft PU-5800 variable foam for the first time, or when using new mould shapes or volumes, trials must be carried out to determine the appropriate shot size. Polycraft PU-5800 variable foam can be pigmented, however some pigments may increase the reaction speed so small scale trials should be carried out when using for the first time. We recommend a pigment loading of 1 – 3%

**Storage**

Polycraft PU-5800A and PU-5800B variable foam should be stored in original, unopened containers between 20 and 25°C. Polycraft PU-5800 variable foam may crystallise partially or completely if not stored at above 20°C. Like all polyurethanes, both components are moisture sensitive. Moisture absorption will cause excessive aeration in cast parts.

**KEEP THE PACKING TIGHTLY SEALED WHEN NOT IN USE.**

If stored under the above conditions, Polycraft PU-5800 variable foam A and B will have a shelf life of 6 months, from the date of purchase.