

# Polycraft FC-3680

## Black Fast Cast Polyurethane Resin System



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<b>100:100</b> Resin:Hardener	<b>3-4 Min</b>	<b>60 Min</b>	<b>Black</b>	<b>D70-75</b>	<b>20-25°C</b>	1kg by weight equals approx. 939 ml in volume
Mix Ratio By Weight	Pot Life (200g @25°C)	Demould Time (200g@ 25°C)	Cured Colour	Hardness	Working Temperature	Density



Material	Resin Hardener	Polyol Isocyanate
Colour	A B	Black Brown
Viscosity (mPas) @25°C	Polyol Isocyanate Mixed	300 - 500 100 - 200 250 - 450
Density @ 25°C g/cm <sup>3</sup>	Polyol Isocyanate Mixed	0.98 ± 0.05 1.10± 0.05 1.04 ± 0.05
Mix Ratio	By Weight	100: Polyol 100: Isocyanate
Pot Life (200g at 25°C)	mins	3- 4
Recommended Casting Depth	mm	1 - 20

### Overview

Polycraft FC-3680 Black fast cast resin is an odourless two component polyurethane system which is designed for rapid demould times and can be used filled or unfilled. Polycraft FC-3680 Black can be used unfilled in prototyping and model-making areas, or filled with mineral or metallic fillers in pattern-making or for thermoforming tools. Polycraft FC-3680 Black gives outstanding colour density and removes the need for black pigmentation.

### Special Features

- Strong thin sections
- Good thermal resistance
- Excellent impact resistance
- Excellent dimensional stability

### Mould Preparation

Ensure that the mould is clean and dry and for flexible moulds, use RTV silicone rubber. If the mould is wooden, ensure the wood is well sealed with varnish and/or wax based release agent.

### Resin Preparation

Shake the Part A thoroughly in order to homogenise the resin. For best results, ensure that the two components are at 20 – 25°C before mixing.

### Mixing Instructions

When using unfilled, add the correct amount of Part B to the Part A and stir for 30 seconds. Pour carefully in one place into the mould in order to avoid air inclusion. If using filled, we recommend the use up to 200% filler, Aluminium hydroxide (ATH Filler Powder) for general bulking out and shrinkage reduction, aluminium Powder for higher temperature applications. Large quantities of material, filled or unfilled.

### Curing

The casting can generally be demoulded in 60 minutes at room temperature. The precise demould time will vary with casting thickness, as thin section units will cure slower than thicker section units. When casting thin wall sections, ensure that the mould and resins are at least 20 – 25°C to facilitate a good cure and reduce the risk of brittleness. To reduce the cure time, the mould can be pre-warmed to 40 – 60°C. It is not recommended to heat the liquid components.

### Unfilled Filled w/ 200% ATH Filler

Hardness	Shore D	70-75	80-85
Tensile Strength	MPa	25 - 30.0	7 - 12
Elongation at break	%	4.0 - 6.0	2 - 3
Flexural Strength	MPa	30 - 35	20 - 25
Flexural Modulus	MPa	500 - 800	1500 - 2000
Linear Shrinkage	%	<0.20	<0.20
Heat Distortion Temperature (HDT)	Celsius	60 - 65	65 - 70

### Storage / Shelflife

Keep containers tightly sealed when not in use. Consider the use of a dry gas product, which can be sprayed into opened containers to displace moist air before resealing containers to extend shelf life. Polycraft FC3680 should be kept in dark storage between 18°C and 25°C. Under these conditions, shelf-life in the original unopened containers is six months from the date of purchase.

### Health and Safety

Before use please read product labels, technical sheets and safety data Sheets and ensure you have adequate understanding of the safety precautions and directions before using the materials.