Figure 4® F3 Orange

Rigid Class

PSLA

An economical prototyping plastic material for PSLA that provides high throughput, accurate, mechanically stable parts with excellent surface finish and detail.

FIGURE 4 F3 ORANGE DELIVERS HIGH RESOLUTION, DISTINGUISHABLE PARTS QUICKLY WITH RELIABLE PROPERTIES FOR PROTOTYPE PARTS.

Figure 4 F3 Orange is a prototyping plastic material specifically engineered for PSLA, offering a cost-effective solution for producing high-quality parts with excellent mechanical stability. It is a rigid, general-purpose material suitable for a wide range of applications, including form, fit, and functional testing, as well as the fabrication of fine-detail components, jigs, fixtures, and assemblies.

With fast print speeds and high-resolution color output, it delivers superior visual detail and smooth surface finishes, making it an ideal choice for efficient and accurate prototyping across a wide range of use cases.

APPLICATIONS

- Form, fit and function prototypes
- General purpose prototyping
- Master patterns for RTV/silicone molding
- Fine detail parts, jigs & fixtures, assemblies.

BENEFITS

- Rigid general purpose material for prototyping.
- Properties ideally suited to form, fit and functional testing.
- Colour helps to draw attention to parts for design review and makes parts easily identifiable in RTV mold creation
- Print speeds up to 34mm/hr

FEATURES

- Capability to build in 100um or 150um layer thickness
- Excellent water resistance
- HDT gives stability at higher temperatures

3D SYSTEMS®

Figure 4® F3 Orange

MATERIAL PROPERTIES

The full suite of mechanical properties is given per ASTM and ISO standards where applicable. In addition, properties such as flammability, dielectric properties, and 24 hour water absorption are provided. This allows for better understanding of the material capability to aid in design decisions for the material. All parts are conditioned per ASTM recommended standards for a minimum of 40 hours at 23 °C, 50% RH.
Solid material properties reported were printed along X-axis.

LIQUID MATERIAL			
MEASUREMENT	**CONDITION / METHOD**	**METRIC**	**US**
Viscosity	Brookfield viscometer @ 25°C (77°F)	480 cPs	1161 lb/ft·h
Color		Orange	
Liquid Density	Kruss K11 Force Tensiometer @ 25°C (77°F)	1.13 g/cm³	0.04 lb/in³
Default Print Layer Thickness	Internal	100 µm	0.004 in

SOLID MATERIAL						
METRIC	**ASTM METHOD**	**METRIC**	**ENGLISH**	**ISO METHOD**	**METRIC**	**ENGLISH**
	PHYSICAL				**PHYSICAL**	
Solid Density	ASTM D792	1.2 g/cm³	0.043 lb/in³	ISO 1183	1.2 g/cm³	0.043 lb/in³
24 Hour water absorption	ASTM D570	0.31%	0.31%	ISO 62	0.31%	0.31%
	MECHANICAL				**MECHANICAL**	
Tensile Strength Ultimate	ASTM D638 Type IV	59 MPa	8600 psi	ISO 527 -1/2	52 MPa	7500 psi
Tensile Strength at Yield	ASTM D638 Type IV	56 MPa	8100 psi	ISO 527 -1/2		
Tensile Modulus	ASTM D638 Type IV	2700 MPa	390 ksi	ISO 527 -1/2	2600 MPa	380 ksi
Elongation at Break	ASTM D638 Type IV	3.4 %	3.4 %	ISO 527 -1/2	3.1 %	3.1 %
Elongation at Yield	ASTM D638 Type IV	4.9 %	4.9 %	ISO 527 -1/2		
Flex Strength	ASTM D790	90 MPa	13100 psi	ISO 178	100 MPa	14500 psi
Flex Modulus	ASTM D790	2800 MPa	410 ksi	ISO 178	2700 MPa	389 ksi
Izod Notched Impact	ASTM D256	13 J/m	0.3 ft-lb/in	ISO 180-A	15 J/m²	0.0073 ft-lb/in²
Izod Unnotched Impact	ASTM D4812	70 J/m	1 ft-lb/in	ISO 180-U	170 J/m²	0.0813 ft-lb/in²
Shore Hardness	ASTM D2240	84 D	84 D	ISO 7619	84 D	84 D
	THERMAL				**THERMAL**	
Tg (DMA, E")	ASTM E1640 (E"" at 1°C/min)	72 °C	162 °F	ISO 6721-1/11 (E"" at 1°C/min)	72 °C	162 °F
HDT 0.455MPa/66PSI	ASTM D648	82 °C	179 °F	ISO 75 - 1/2 B	85 °C	186 °F
HDT 1.82MPa/264 PSI	ASTM D648	65 °C	149 °F	ISO 75 - 1/2 A	68 °C	155 °F