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# *MATERIAL* **PA6/66-GF20 FR LS** OVERVIEW

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# Addigy® PA6/66-GF20 FR LS



## FDM® Thermoplastic Filament

The information presented are typical values intended for reference and comparison purposes only.  
They should not be used for design specifications or quality control purposes.



## Overview

Addigy PA6/66-GF20 FR LS is a 20% glass-filled nylon polymer with fire-resistant, low-smoke properties and low levels of toxic fume emissions. PA6/66-GF20 FR LS complies with industry standards EN 455-45-2, NFPA 130, SMP 800-C and FAR 25.853, making it a desirable material for transportation industry applications.

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## Ordering Information

Part Number	Description
<b>Filament Canisters</b>	
355-70020	PA6/66-GF20 FR LS, 92 cu in. - Fortus Plus
355-70090	SUP4000B, 92 cu in. - Fortus Plus
<b>Printer Consumables</b>	
511-10745-S	T20G tip
511-10401	T16 tip
325-00750-S	Nylon build sheet, 0.02 x 16 x 18.5 in. (0.51 x 406 x 470 mm)

## Physical Properties

Property	Test Method	Typical Values	
		XY	XZ/ZX
Melting Point	ISO 11357, DSC	195 °C (383 °F)	

Data provided by Covestro.

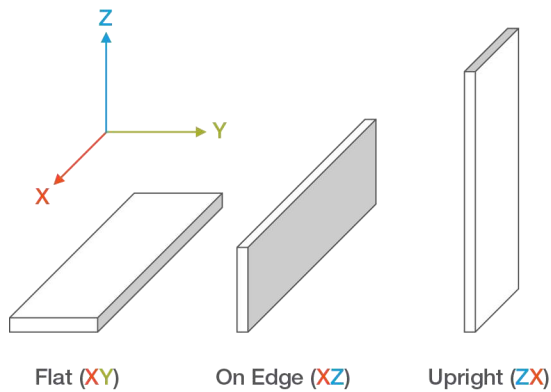
DSC = differential scanning calorimetry at 10°C/minute.

## Mechanical Properties

Samples were printed with 0.010 in. (0.254 mm) layer heights on the Fortus 450mc.

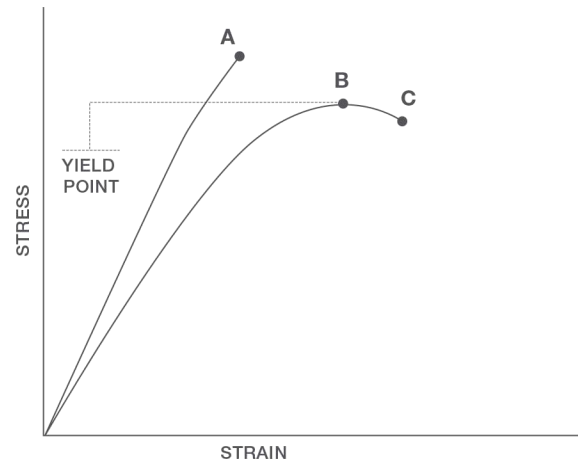
### Print Orientation

Parts created using FDM are anisotropic as a result of the printing process. Below is a reference of the different orientations used to characterize the material.



### Tensile Curves

Due to the anisotropic nature of FDM, tensile curves look different depending on orientation. Below is a guide of the two types of curves seen when printing tensile samples and what reported values mean.



**A** = Tensile at break, elongation at break (no yield point)

**B** = Tensile at yield, elongation at yield

**C** = Tensile at break, elongation at break

		XZ Orientation <sup>1</sup>	ZX Orientation <sup>1</sup>
<b>Tensile Properties: ASTM D638</b>			
Yield Strength	MPa	50.7 (2.0)	No yield
	psi	7350 (290)	No yield
Elongation @ Yield	%	3.5 (0.21)	No yield
Strength @ Break	MPa	50.0 (2.1)	24.7 (1.7)
	psi	7250 (300)	3580 (250)
Elongation @ Break	%	4.0 (0.31)	1.6 (0.33)
Modulus (Elastic)	GPa	4.14 (0.18)	2.60 (0.43)
	ksi	601 (26)	377 (62)
<b>Flexural Properties: ASTM D790, Procedure A</b>			
Peak Stress	MPa	105 (1.0)	51.8 (1.2)
	psi	15300 (150)	7510 (180)
Modulus	GPa	5.10 (0.097)	2.36 (0.038)
	ksi	740 (14)	343 (5.5)
<b>Impact Properties: ASTM D256, ASTM D4812</b>			
Unnotched	J/m	279 (28)	77.9 (15)
	ft*lb/in.	5.23 (0.53)	1.46 (0.28)

<sup>1</sup> Values in parenthesis are standard deviations.

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