

	Dongguan Imai Intelligent Technology Co.,Ltd	Document and Revision Number	IR-HTLHPF010 REV-02
	Impact Strength Test	Revision Date	2024.12.27

Impact Strength Test

Test Purpose: This test aims to obtain high reproducibility value of tensile stress and tensile modulus of specific material.

Responsible: info@iemai3d.com
/Issuing Person

Test Specifications The machine should meet the requirements of JB/T8761

Test Period: 16/12/24 to 26/12/24

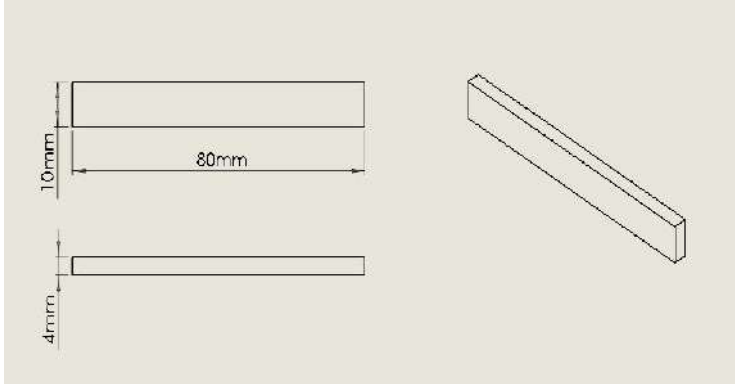
1. Printing Setting

Machine and Operation			
Printer Model:	MAGIC-HT-L	Storage Medium:	SD Card
Nozzle Heating:	Ordinary Heating Rod	Chamber:	90°C
Method		Temperature	
Nozzle Size:	0.4mm	Printing Temperature:	405°C
Nozzle Material:	Copper Alloy	Hot Bed Temperature:	110°C
Platform Gluing:	Spray		
Method			
Printing Material			
Test Material:	PEEK	Material Type/Dia.:	Filament / 1.74mm
New Unsealing:	No	Batch Number:	Nil
Continuous Baking:	Yes	Bake or not:	Yes
during printing			
Continuous Baking:	90°C	Bake Temperature:	120°C / 8hrs
Temperature		/Time	

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Slicing Parameters		
Slicing Software: IEMAI 3D Slicer V1.2		
First Layer Height: 0.25mm Top/Bottom Shell: 3, 3 Layers Z Hop When: 0.4mm Retracting Retraction: 40mm/s Speed Bridge Speed: 50mm/s Skirt Loops: 1Loop Wall Generator: Classic Sparse/Solid: 45° Infill Direction Straggered	Layer Height: 0.2mm Internal Solid: Monotonic Infill Pattern Retraction: 2mm Length Fan Speed for: 30% Pert Cooling Fan Layer Speed: 35mm/s Brim Width: 20mm Wall Loops: 2	Line Width: 0.4mm Detect Thin: Select Walls Detact: Select Overhang Walls Fan Speed for: 100% Overhangs Travel Speed: 70mm/s Brim Type: Outter/Inner Brim Infill Density: 100%

2. Sample

Test Sample Shape	
Printing Part Name: 1b Stretching Spline For each required testing direction, at least 5 test samples should be tested. If higher average accuracy is required, the number of measurements can exceed 5.	
XY axis printing quantity at once: 5unit	Z-axis printing quantity at once: 4units
	

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3. Test Method and Steps

Step 1
Fix the cantilever beam on the experimental platform and adjust the position of the impact device.
Step 2
Set appropriate measuring points on the cantilever beam to record displacement and stress changes.
Step 3
Start the impact experiment by freely dropping the heavy hammer from a certain height and impacting it onto the cantilever beam.
Step 4
Real time recording of displacement and stress changes of cantilever beams, and saving data for subsequent analysis.

4. Test Result

Impact Test Data (XY Direction) :		
Sample Number	Test Method	Impact Strength (J/m2)
01	ISO 527, GB/T 1040	29.935
02		86.998
03		58.590
Maximum Value		86.998
Minimum Value		29.935
Overall Average Value (No maximum or minimum)		58.507
Average Value		58.590

Impact Test Data (Z Direction) :		
Sample Number	Test Method	Impact Strength (J/m2)
01	ISO 527, GB/T 1040	17.686
02		17.686
03		10.894
04		15.720
05		18.122
Maximum Value		18.122
Minimum Value		10.894
Overall Average Value (No maximum or minimum)		16.021
Average Value		17.030