

Dynamism PVA is a dissolvable support material for dual-extrusion 3D printers. Print water-soluble support structures with great adhesion to PLA, Nylon, TPU, and PVB print materials, while it can also be used in combination with PETG print materials (geometry dependent).

### PHYSICAL PROPERTIES

| PROPERTY           | TESTING METHOD    | TYPICAL VALUE                  |
|--------------------|-------------------|--------------------------------|
| Density            | ISO1183, GB/T1033 | 1.10 g/cm <sup>3</sup> at 23°C |
| Melt index         | 260°C, 2.16kg     | 6.6-6.7 g/10min                |
| Light transmission | N/A               | N/A                            |
| Flame retardancy   | N/A               | N/A                            |

### CHEMICAL RESISTANCE DATA

| PROPERTY                  | TESTING METHOD    |
|---------------------------|-------------------|
| Effect of weak acids      | Not resistant     |
| Effect of strong acids    | Not resistant     |
| Effect of weak alkalis    | Not resistant     |
| Effect of strong alkalis  | Not resistant     |
| Effect of organic solvent | No data available |
| Effect of oils and grease | No data available |

### THERMAL PROPERTIES

| PROPERTY                     | TESTING METHOD     | TYPICAL VALUE |
|------------------------------|--------------------|---------------|
| Glass transition temperature | DSC, 10°C/min      | 70°C          |
| Melting temperature          | DSC, 10°C/min      | N/A           |
| Crystallization temperature  | DSC, 10°C/min      | N/A           |
| Decomposition temperature    | TGA, 20°C/min      | 260 °C        |
| Vicat softening temperature  | ISO 306, GB/T 1633 | 67 °C         |
| Heat deflection temperature  | ISO 75 1.8MPa      | 52.7 °C       |
| Heat deflection temperature  | ISO 75 0.45MPa     | 66.5 °C       |
| Thermal conductivity         | N/A                | N/A           |
| Heat shrinkage rate          | N/A                | N/A           |

## MECHANICAL PROPERTIES

| PROPERTY                     | TESTING METHOD     | TYPICAL VALUE               |
|------------------------------|--------------------|-----------------------------|
| Young's modulus (X-Y)        | ISO 527, GB/T 1040 | 1745 ± 151 MPa              |
| Young's modulus (Z)          |                    | N/A                         |
| Tensile strength (X-Y)       | ISO 527, GB/T 1040 | 35.7 ± 1.7 MPa              |
| Tensile strength (Z)         |                    | N/A                         |
| Elongation at break (X-Y)    | ISO 527, GB/T 1040 | 5.8 ± 0.9 %                 |
| Elongation at break (Z)      |                    | N/A                         |
| Bending modulus (X-Y)        | ISO 178, GB/T 9341 | 1198 ± 173 MPa              |
| Bending modulus (Z)          |                    | N/A                         |
| Bending strength (X-Y)       | ISO 178, GB/T 9341 | 60.2 ± 1.2 MPa              |
| Bending strength (Z)         |                    | N/A                         |
| Charpy impact strength (X-Y) | ISO 179, GB/T 1043 | 9.6 ± 0.9 kJ/m <sup>2</sup> |
| Charpy impact strength (Z)   |                    | N/A                         |

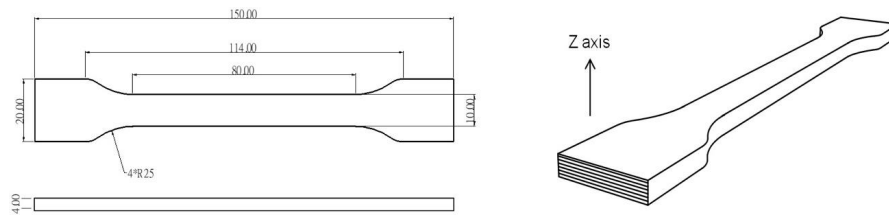
## RECOMMENDED PRINTING CONDITIONS

| PARAMETER                    |                             |
|------------------------------|-----------------------------|
| Nozzle temperature           | 190 – 220 (°C)              |
| Build surface material       | BuildTak®, Glass, Blue Tape |
| Build surface treatment      | Glue                        |
| Build plate temperature      | 25 - 70 (°C)                |
| Cooling fan                  | ON                          |
| Printing speed               | 40-60 (mm/s)                |
| Raft separation distance     | 0.1-0.14 (mm)               |
| Retraction distance          | 1 (mm)                      |
| Retraction speed             | 20 (mm/s)                   |
| Environmental temperature    | Room temperature            |
| Threshold overhang angle     | 60 (°)                      |
| Recommended support material | PolyDissolve™ S1            |

Based on 0.4 mm nozzle and Simplify 3D v.4.0. Printing conditions may vary with different nozzle diameters

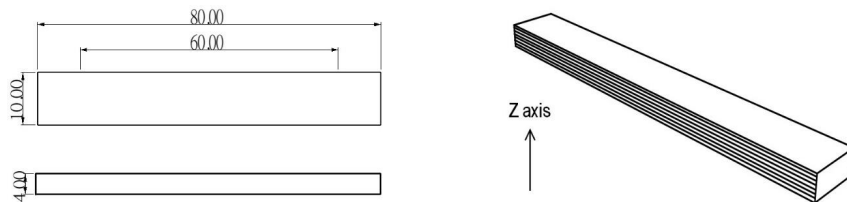
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## TENSILE TESTING SPECIMEN ISO 527, GB/T 1040



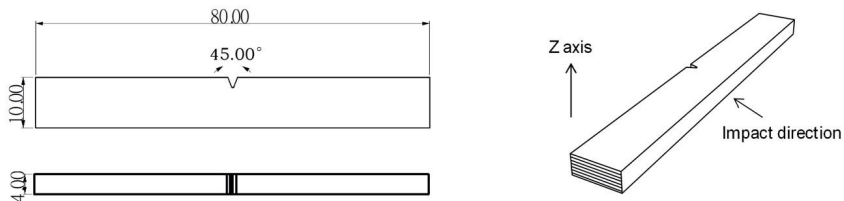
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## FLEXURAL TESTING SPECIMEN ISO 178, GB/T 9341



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## IMPACT TESTING SPECIMEN ISO 179, GB/T 1043



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## HOW TO MAKE SPECIMEN

\*All specimens were conditioned at room temperature for 24h prior to testing

|                           |        |
|---------------------------|--------|
| Printing temperature      | 220 °C |
| Bed temperature           | 60 °C  |
| Shell                     | 2      |
| Top & bottom layer        | 4      |
| Infill                    | 100%   |
| Environmental temperature | 25 °C  |
| Cooling fan               | ON     |

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## DISCLAIMER

The typical values presented in this data sheet are intended for reference and comparison purposes only. They should not be used for design specifications or quality control purposes. Actual values may vary significantly with printing conditions. End- use performance of printed parts depends not only on materials, but also on part design, environmental conditions, printing conditions, etc.

Product specifications are subject to change without notice.

Each user is responsible for determining the safety, lawfulness, technical suitability, and disposal/recycling practices of Dynamism materials for the intended application. Dynamism makes no warranty of any kind, unless announced separately, to the fitness for any use or application. Dynamism shall not be made liable for any damage, injury or loss induced from the use of Dynamism materials in any application.