



Technical Data Sheet

PLA Pro

KELVRA

Engineered FDM Filaments
Print with Confidence

Mechanical Properties

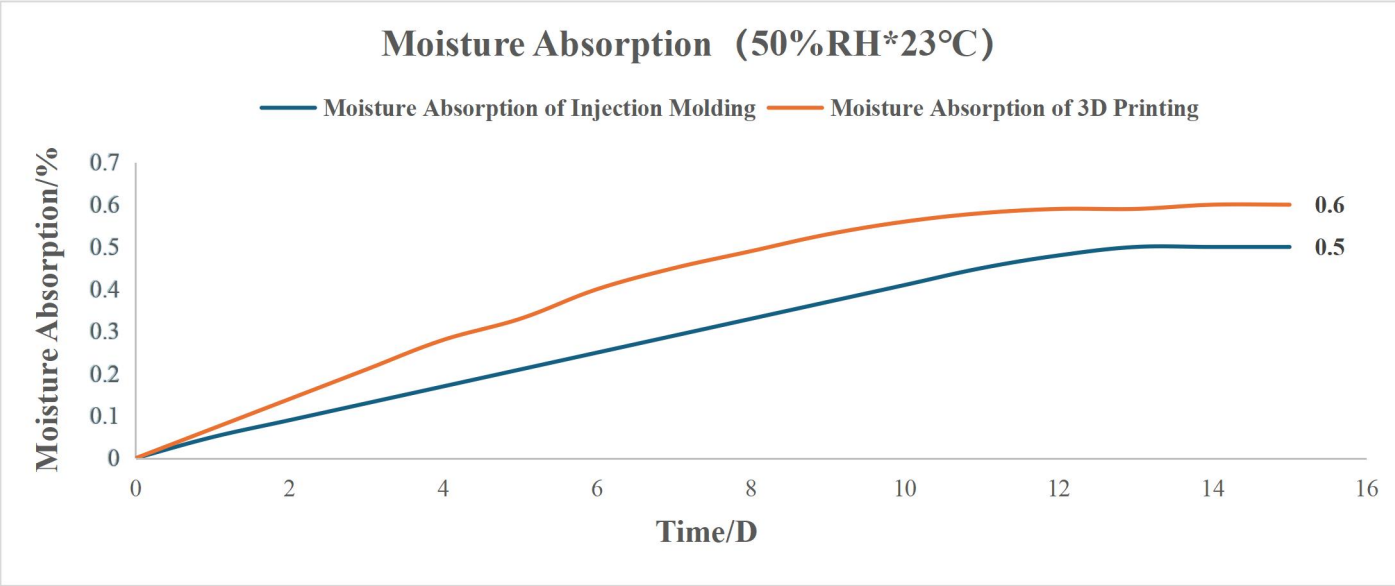
Property	Testing Method	Testing Condition	Injection Molding Typical Value	3D Printing X-Y Axis Typical Value	3D Printing Z Axis Typical Value	Unit
Tensile Strength	ISO 527	50mm/min	50.95	48.96±4	26±4	MPa
Elongation at Break	ISO 527	50mm/min	13	7±1	0.75±0.2	%
Tensile Modulus	ISO 527	50mm/min	5549	3325±100	3100±100	MPa
Flexural Strength	ISO 178	2mm/min	77.33	78.5±5	44±5	MPa
Flexural Modulus	ISO 178	2mm/min	3127.50	2920±100	2550±100	MPa
Charpy Impact Strength Without Notch	ISO 179	23°C	NB	15.5±2	8.5±2	KJ/m ²
Izod Impact Strength Without Notch	ISO 180	23°C	83.05	16.8±2	8.5±2	KJ/m ²

Physical Properties

Property	Testing Method	Testing Condition	Typical Value	Unit
Density	ISO 1183	Immersion	1.24	g/cm ³
Melt Flow index(MFR)	ISO 1133	210°C/2.16kg	5-15	g/10 min

Moisture Absorption

Property	Testing Method	Testing Condition	Injection Molding Typical Value	3D Printing Typical Value	Unit
Moisture Absorption	ISO 62	50%RH*23°C	0.5	0.6	%

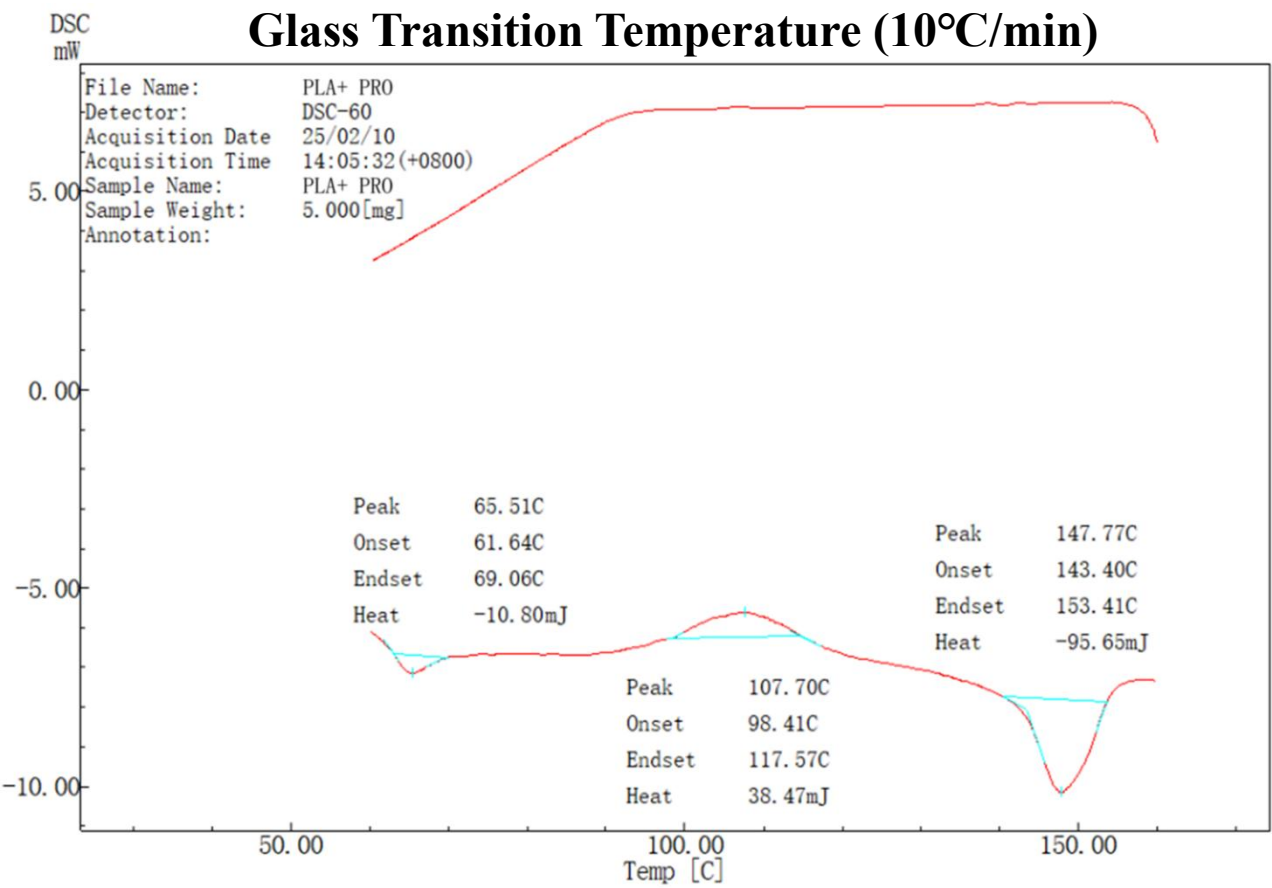


Chemical Properties

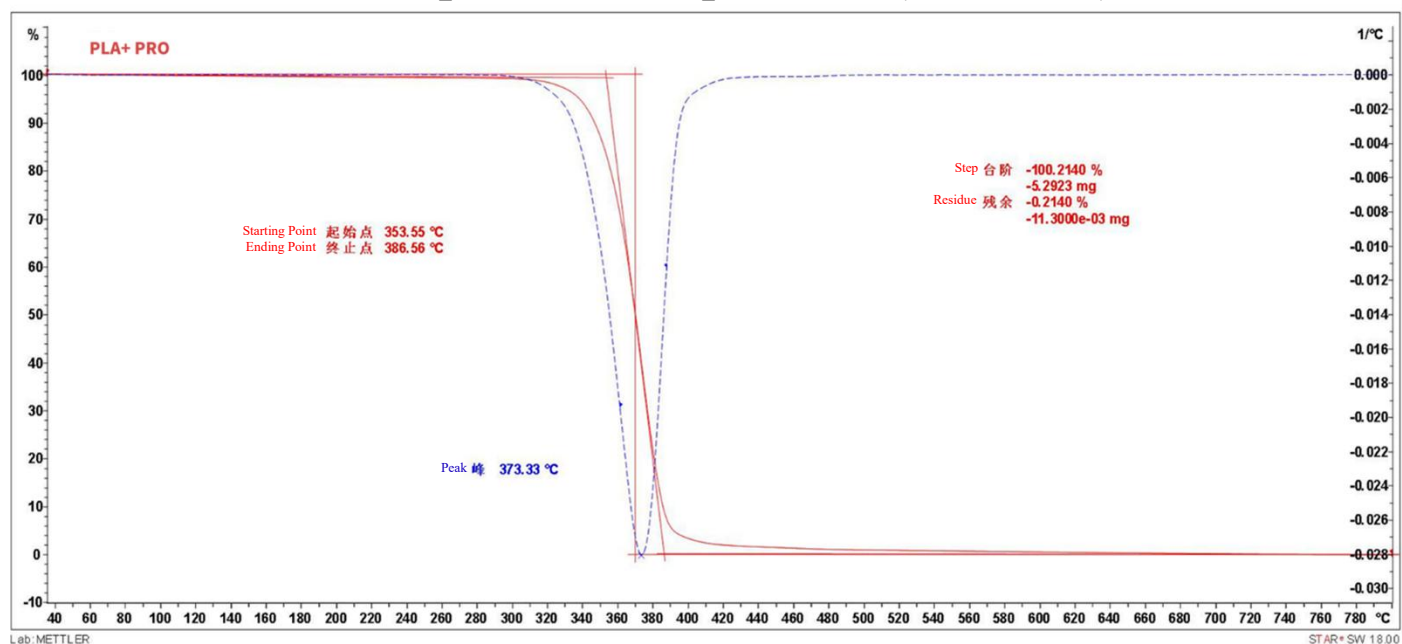
Property	Testing Result
Weak Acid Resistance	Not Resistant
Strong Acid Resistance	Not Resistant
Weak Base Resistance	Not Resistant
Strong Base Resistance	Not Resistant
Organic Solution Resistance	Not Resistant

Thermal Properties

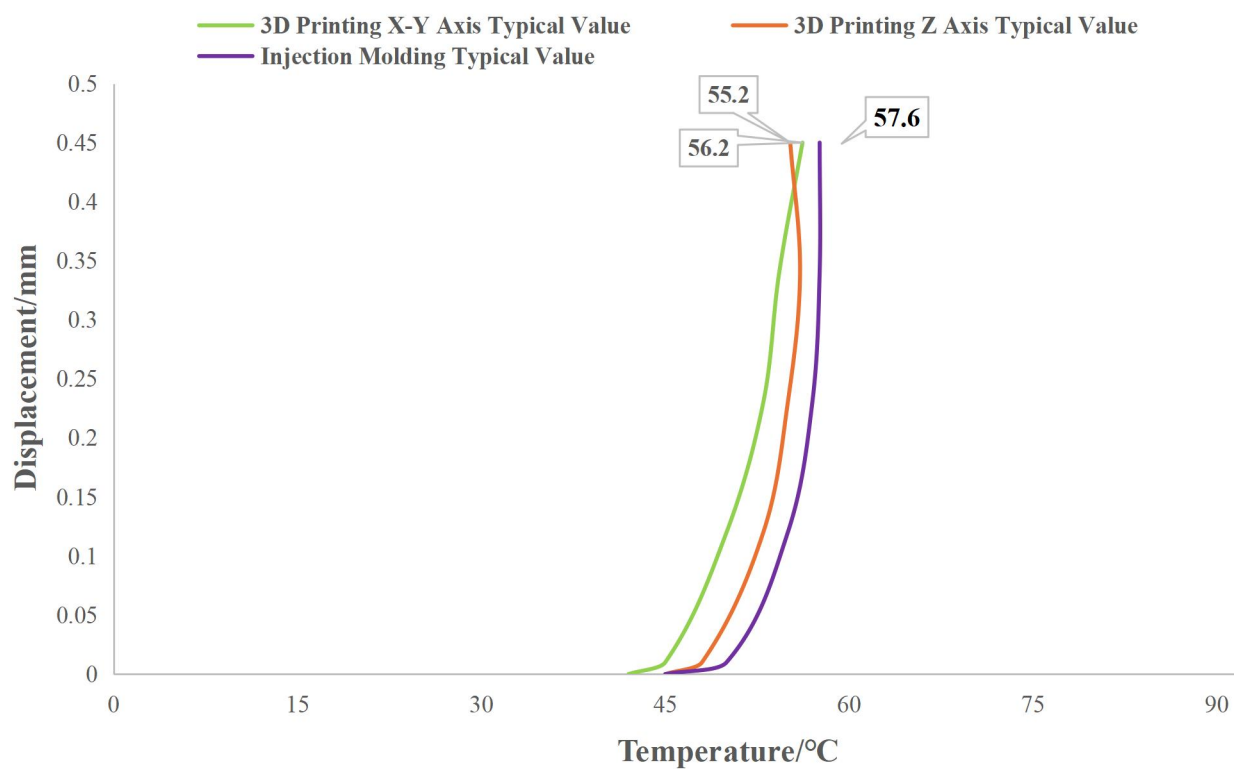
Property	Testing Method	Testing Condition	Injection Molding Typical Value	3D Printing X-Y Axis Typical Value	3D Printing Z Axis Typical Value	Unit
Glass Transition Temperature	DSC	10°C/min	65.51			°C
Crystallization Temperature	DSC	10°C/min	107.7			°C
Melting Point	DSC	10°C/min	147.77			°C
Distortion Temperature	TGA	20°C/min	N/A			°C
Heat Distortion Temperature	ISO 75	0.45MPa	57.6	56.20	55.20	°C
Heat Distortion Temperature	ISO 75	1.8MPa	56.4	54.20	53.20	°C
Vicat Softening Temperature	ISO 306	50°C/10N	56.60	57.80	56.40	°C

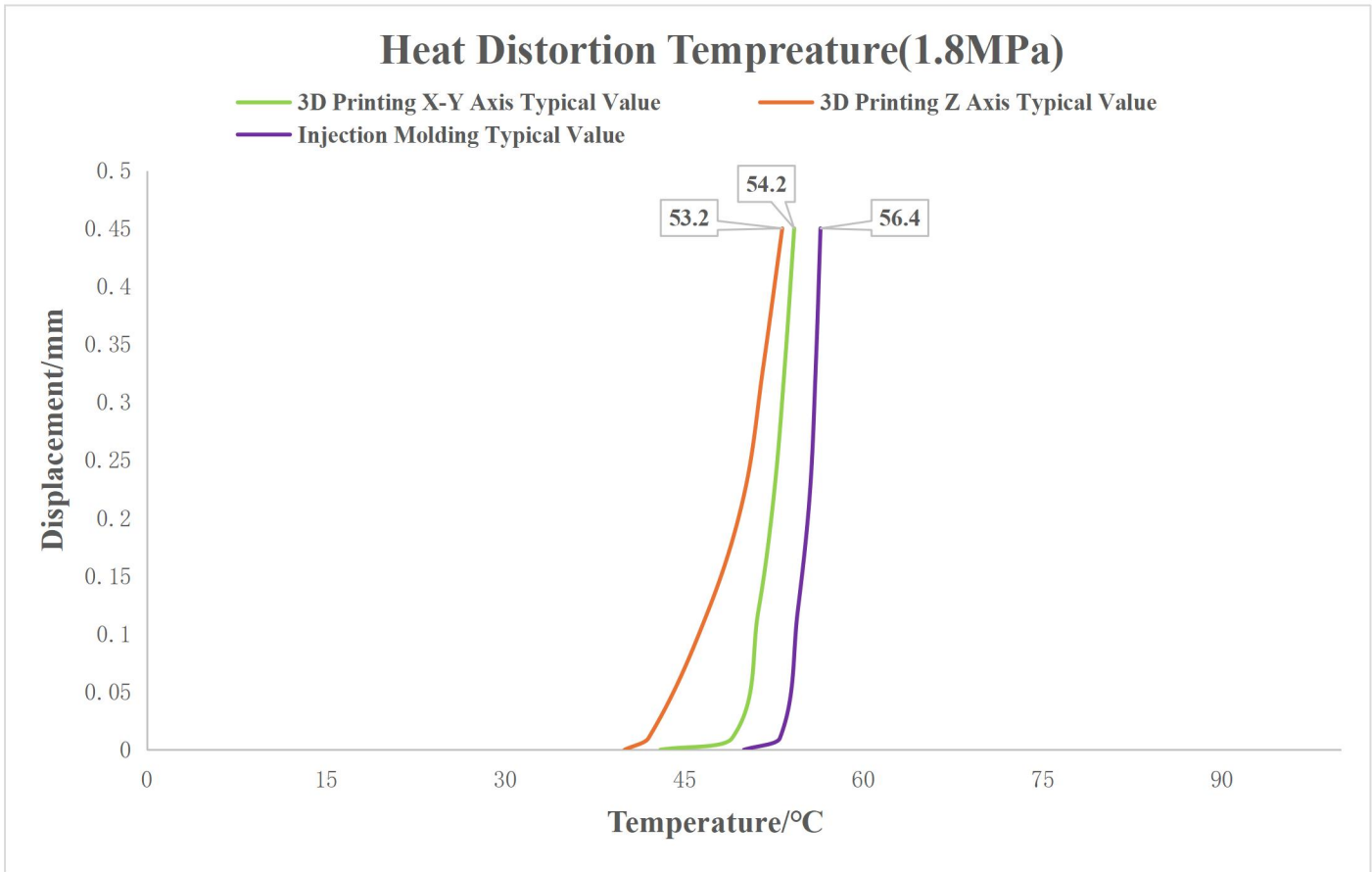


Decomposition Temperature (20°C/min)



Heat Distortion Temperature(0.45MPa)





Recommended 3D Printing Parameters

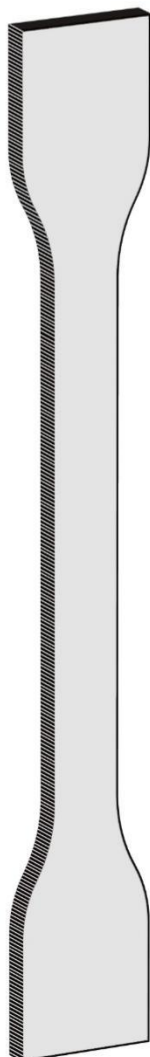
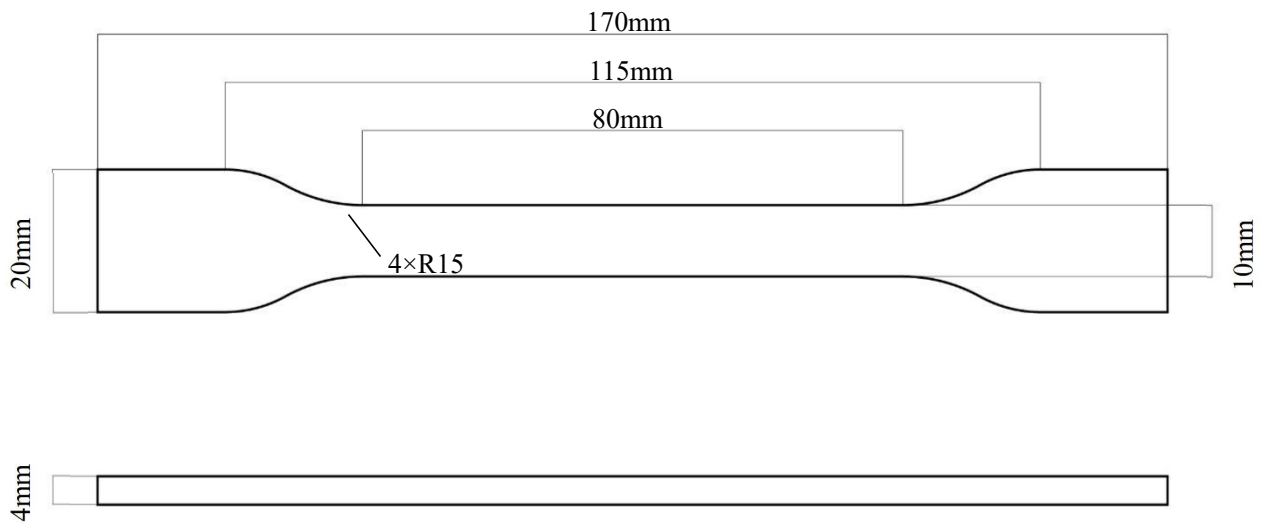
*Based on 0.4 mm nozzle. Printing conditions may vary with different nozzle diameters

Printing Temperature	270-300(°C)
Bed Temperature	80-100(°C)
Wall Layers	2 Layers
Top and Bottom Layers	4 Layers
Infill	100%
Ambient Temperature	25°C
Cooling Fan	0-10%
Printing Speed	30-50(mm/s)
Nozzle Diameter	0.4 mm

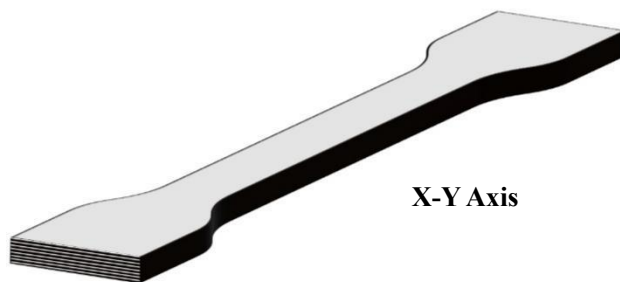
Standard Sample Dimensions

Standard Dimensions of Tensile Test Sample

ISO 527 GB/T1040



Z Axis



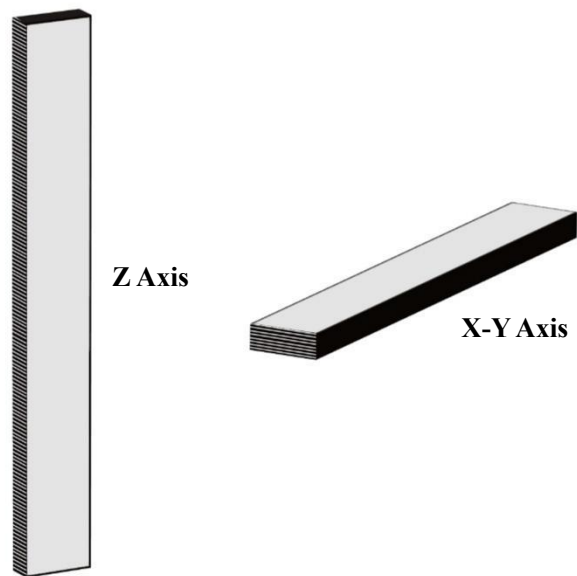
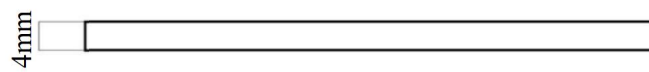
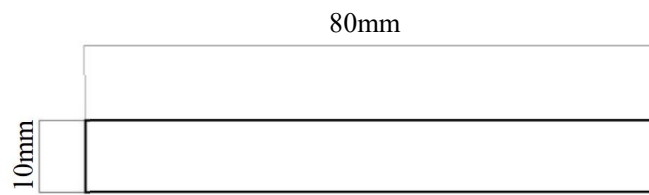
X-Y Axis

Dimensions of Flexural Test Sample/Impact Test Sample

ISO 178 GB/T9341

ISO 179 GB/T1043

ISO 180 GB/T1843



3D Printing Actual Parameters

*All specimens must be left at room temperature for 24 hours before testing. The parameters are based on the Bambulab P1S 3D printer.

Printing Temperature	280(°C)
Bed Temperature	100(°C)
Wall Layers	2 Layers
Top and Bottom Layers	4 Layers
Infill	100%
Ambient Temperature	25°C
Cooling Fan	10%
Printing Speed	50(mm/s)
Nozzle Diameter	0.4 mm

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 the material depends not only on materials, but also on part design, environmental conditions, equipment, etc. Product specifications can be changed without notice.

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