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## Typical Material properties

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ASA<sub>(PRUSAMENT)</sub>

Physical Properties	Typical Value	Method
Specific Gravity (g/cm <sup>3</sup> )	1.07	ISO 1183
MFR (g/10min)	21	ISO 1183
MVR (cm <sup>3</sup> /10min)	22	ISO 1183
Moisture Absorption 24 hours (%)	0.23	Prusa Polymers
Moisture Absorption 7 Days (%)	0.25	Prusa Polymers
Heat Deflection Temperature (0,45MPa) (°C)	93	ISO 75
Heat Deflection Temperature (1,80 MPa) (°C)	86	ISO 75
Hardness – Shore D	40 ± 1	ISO 527
Tensile Yield Strength Filament (0,45MPa)	78	Prusa Polymers
Interlayer Adhesion (MPa)	11 ± 1	Prusa Polymers

(Based on PLA technical data sheet by Josef Prusa)

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## PC BLEND CF <sub>(PRUSAMENT)</sub>

Physical Properties	Typical Value	Method
MFR (g/10min)	18	ISO 1183
MVR (cm <sup>3</sup> /10min)	16	ISO 1183
Density (g/cm <sup>3</sup> )	1.16	Prusa Polymers
Moisture Absorption 24 hours (%)	0.38	Prusa Polymers
Moisture Absorption 7 Days (%)	0.42	Prusa Polymers

Heat Deflection Temperature (0,45MPa) (°C)	114	ISO 75
Heat Deflection Temperature (1,80 MPa) (°C)	106	ISO 75
Tensile Yield Strength Filament (0,45MPa)	55 ± 2	ISO 527
Hardness – Shore D	82	Prusa Polymers
Interlayer Adhesion (MPa)	20 ± 2	Prusa Polymers

(Based on PLA technical data sheet by Josef Prusa)

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## PLA (PRUSAMENT)

Physical Properties	Typical Value	Method
Peak Melt Temperature (°C)	145-160	ISO11357
Glass Transition Temperature (°C)	55-60	ISO11357
MFR (g/10min)	10,4	ISO1133
MVR (cm <sup>3</sup> /10min)	9,4	ISO1133
Specific Gravity (g/cm <sup>3</sup> )	1,24	ISO1183
Moisture Absorption 24 hours (%)	0,3	Prusa Polymers
Moisture Absorption 4 weeks (%)	0,3	Prusa Polymers
Heat Deflection Temperature (0,45MPa) (°C)	55	ISO75
Tensile Yield Strength Filament (0,45MPa)	57,4 ± 0,4	ISO527-1

(Based on PLA technical data sheet by Josef Prusa)

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## PETG (PRUSAMENT)

Physical Properties	Typical Value	Method
Specific Gravity (g/cm <sup>3</sup> )	1.27	ISO 1183
Moisture Absorption 24 hours (%)	0.2	Prusa Polymers
Moisture Absorption 7 Days (%)	0.3	Prusa Polymers
Moisture Absorption 4 weeks (%)	0.3	Prusa Polymers
Heat Deflection Temperature (0,45MPa) (°C)	68	ISO 75
Tensile Yield Strength Filament (0,45MPa)	46 ± 1	ISO 527

(Based on PLA technical data sheet by Josef Prusa)

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## PVB (PRUSAMENT)

Physical Properties	Typical Value	Method
MFR (g/10min)	6	ISO 1183
Density (g/cm <sup>3</sup> )	1.09	Prusa Polymers
Moisture Absorption 24 hours (%)	1 – 2	Prusa Polymers
Moisture Absorption 7 Days (%)	2 – 3	Prusa Polymers
Heat Deflection Temperature (0,45MPa) (°C)	60	ISO 75
Heat Deflection Temperature (1,80 MPa) (°C)	55	ISO 75
Tensile Yield Strength Filament (0,45MPa)	57 ± 1	ISO 527
Hardness – Shore D	77	Prusa Polymers
Interlayer Adhesion (MPa)	9 ± 1	Prusa Polymers

(Based on PLA technical data sheet by Josef Prusa)

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## TOUGH RESIN<sub>(PRUSAMENT)</sub>

<b>Physical Properties</b>	<b>Uncured XY</b>	<b>Cured XY</b>	<b>Method</b>
Heat Deflection Temperature (0,45MPa)(°C)	45	55	ISO 75
Heat Deflection Temperature (1,80 MPa)(°C)	50	42.5	ISO 75
Hardness – Shore D	70.7 ± 0.8	75.7 ± 1.2	ISO 164

Viscosity	180 – 230 mPa.s	ISO 2431
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(Based on PLA technical data sheet by Josef Prusa)

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## ***Mechanical Properties***

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**ASA**<sub>(PRUSAMENT)</sub>

Property/Print Direction	Horizontal	Vertical xz	Method
Tensile Yield Strength (MPa)	42 ± 1	45 ± 2	ISO 527-1
Tensile Modulus (GPa)	1,7 ± 0,1	1,7 ± 0,1	ISO 527-1
Elongation At Yield Point (%)	3,4 ± 0,2	3,8 ± 0,2	ISO 527-1
Flexural Strength (MPa)	64 ± 1	69 ± 1	ISO 178
Flexural Modulus (GPa)	2,0 ± 0,1	1,9 ± 0,1	ISO 178
Deflection at Flex. Strength (mm)	9 ± 0,1	9 ± 1,0	ISO 178
Impact Strength Charpy (kJ/m <sup>2</sup> )	25 ± 3	38 ± 11	ISO 179-1
Impact S.Charpy Notch (kJ/m <sup>2</sup> )	12 ± 1	15 ± 3	ISO 179-1

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## PC BLEND CF (PRUSAMENT)

Property/Print Direction	Horizontal	Vertical xz	Method
Tensile Yield Strength (MPa)	55 ± 4	65 ± 4	ISO 527-1
Tensile Modulus (GPa)	2,3 ± 0,1	2,8 ± 1	ISO 527-1
Elongation At Yield Point (%)	3,5 ± 0,5	3,9 ± 0,4	ISO 527-1
Flexural Strength (MPa)	85 ± 1	106 ± 1	ISO 178
Flexural Modulus (GPa)	3,0 ± 0,1	4,9 ± 0,1	ISO 178
Deflection at Flex. Strength (mm)	8,8 ± 0,2	6,9 ± 0,1	ISO 178

Impact Strength Charpy (kJ/m <sup>2</sup> )	30 ± 6	35 ± 3	ISO 179-1
Impact S.Charpy Notch (kJ/m <sup>2</sup> )	9 ± 1	10 ± 1	ISO 179-1

## PLA (PRUSAMENT)

Property/Print Direction	Horizontal	Vertical X,Y-Axis	Vertical Z Axis	Method
Tensile Yield Strength (MPa)	2,2 ± 0,1	2,4 ± 0,1	2,3 ± 0,1	ISO 527-1
Tensile Modules (GPa)	50,8 ± 2,4	59,3 ± 1,9	37,6 ± 4,0	ISO 527-1
Elongation At Yield Point (%)	2,9 ± 0,3	3,2 ± 0,1	1,9 ± 0,3	ISO 527-1
Impact Strength Charpy (kJ/m <sup>2</sup> )	12,7 ± 0,7	13,7 ± 0,7	5,0 ± 1,4	ISO 179-1

## PETG (PRUSAMENT)

Property/Print Direction	Horizontal	Vertical X,Y-Axis	Vertical Z Axis	Method
Tensile Yield Strength (MPa)	47 ± 2	50 ± 1	30 ± 5	ISO 527-1

Tensile Modules (GPa)	1,5 ± 0,1	1,5 ± 0,1	1,4 ± 0,1	ISO 527-1
Elongation At Yield Point (%)	5,1 ± 0,1	5,1 ± 0,1	2,5 ± 0,5	ISO 527-1
Impact Strength Charpy (kJ/m <sup>2</sup> )	NB	NB	5 ± 1	ISO 179-1

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## PVB<sub>(PRUSAMENT)</sub>

Property/Print Direction	Horizontal	Vertical xz	Method
Tensile Yield Strength (MPa)	50 ± 5	49 ± 5	ISO 527-1
Tensile Modules (GPa)	1,6 ± 0,3	1,6 ± 0,2	ISO 527-1
Elongation At Yield Point (%)	4,6 ± 0,7	4,4 ± 0,7	ISO 527-1
Flexural Strength (MPa)	72 ± 1	73 ± 3	ISO 178

Flexural Modulus (GPa)	2,2 ± 0,1	2,3 ± 0,1	ISO 178
Deflection at Flex. Strength (mm)	8,4 ± 0,4	8,5 ± 0,3	ISO 178
Impact Strength Charpy (kJ/m <sup>2</sup> )	55 ± 7	59 ± 12	ISO 179-1
Impact S.Charpy Notch (kJ/m <sup>2</sup> )	7 ± 1	10 ± 1	ISO 179-1

## TOUGH RESIN<sub>(PRUSAMENT)</sub>

Property/print direction	Uncured XY	Cured XY	Method
Tensile strength (MPa)	24,3 ± 0,9	41,6 ± 3,7	ISO 527-1
Elongation (%)	8,0 ± 1,3	5,8 ± 1,2	ISO 527-1
Tensile Modulus (GPa)	0,6 ± 0,04	1,6 ± 0,1	ISO 527-1
Impact strength Charpy (kJ/m <sup>2</sup> )	25,0 ± 3,3	23,7 ± 4,9	ISO 179-1
Notched impact strength Charpy [kJ/m <sup>2</sup> ]	4,9 ± 0,4	1,97 ± 0,26	ISO 179-1
Flexural strength [MPa]	21,6 ± 1,3	33,5 ± 2,3	ISO 178
Flexural modulus [GPa]	0,66 ± 0,05	1,11 ± 0,09	ISO 178
Deflection at flexural strength [mm]	12,6 ± 0,7	11,0 ± 1,5	ISO 178



<b>Property / print direction</b>	<b>Uncured YZ</b>	<b>Cured YZ</b>	<b>Method</b>
Tensile strength [MPa]	22,4 ± 1,2	28,5 ± 2,1	ISO 527-1
Elongation [%]	9,2 ± 0,8	4,6 ± 0,5	ISO 527-1
Tensile modulus [GPa]	0,7 ± 0,07	1,2 ± 0,07	ISO 527-1