

Stereolithography Material Properties

FOR COMPARATIVE PURPOSES ONLY

Measurement	Test Method	Unit	Huntsman Renshape®								DSM Somos®					
			SL 7510		SL 7520		SL 7545		SL 7565		11120 WaterShed™		11122XC WaterShed™		18420 ProtoGen™	
			STANDARD	+ THERMAL POST CURE	STANDARD	+ THERMAL POST CURE	STANDARD	+ THERMAL POST CURE	STANDARD	+ THERMAL POST CURE	STANDARD	+ THERMAL POST CURE	STANDARD	+ THERMAL POST CURE	STANDARD	+ THERMAL POST CURE
Key benefits & Notes			✓ Good ✓ Suitable for Quickcast™		✓ Good ✓ Suitable for Quickcast™		✓ Polypropylene simulant ✓ Excellent durability ✓ Multi-functional material		✓ ABS like rigidity ✓ Good durability ✓ Good optical clarity* ✓ Suitable for Quickcast™ ✓ Multi-functional material		✓ ABS like rigidity ✓ Excellent water resistance ✓ Excellent optical clarity* ✓ Excellent for Quickcast™ ✓ Multi-functional material		✓ ABS like rigidity ✓ Excellent water resistance ✓ Excellent optical clarity* ✓ Excellent for Quickcast™ ✓ Multi-functional material		✓ ABS like rigidity ✓ High accuracy ✓ Good humidity tolerance ✓ Good temp. tolerance ✓ Multi-functional material	
Colour			Translucent amber		Translucent amber		Translucent amber + blue tint		Transparent* + amber		Transparent* + green [§] tint		Transparent* + blue [§] tint		Opaque white	
Hardness, Shore D	ASTM D 2240		87		86	90	79	81	84	85					86 - 88	86 - 87
Flexural modulus	ASTM D 790	MPa	2386		2827 - 2903	3785 - 3854	1390 - 1560	1460 - 1600	1900 - 2100	1900 - 2100	2040 - 2370		2040 - 2370		1990 - 2130	2280 - 2340
Flexural strength	ASTM D 790	MPa	81		97 - 103	90 - 127	50 - 55	52 - 56	60 - 66	60 - 66	63 - 74		63 - 74		66.7 - 70.5	84.9 - 87.7
Tensile modulus	ASTM D 638	MPa	2634		2937 - 3158	2882 - 2958	1400 - 1900	1500 - 1900	2000 - 2500	2000 - 2500					2180 - 2310	2880 - 2960
Tensile strength	ASTM D 638	MPa	57		62 - 65	63 - 69	35 - 40	35 - 40	46 - 54	46 - 54	47 - 56		47 - 56		42.2 - 43.8	66.1 - 68.1
Elongation at break	ASTM D 638	%	10.1		5.2 - 7.2	2.9 - 3.8	12.0 - 21.0	10.0 - 16.0	19.0 - 30	22.0 - 35.0	11.0 - 20.0		11.0 - 20.0		8 - 16	6 - 9
Impact strength notched Izod	ASTM D 256	J/m	37.4		15.5 - 18.1	10.7 - 15.0	28.0 - 39.0	22.0 - 33.0	27.0 - 38.0	28.0 - 38.0	20.0 - 30.0		20.0 - 30.0		20 - 22	9 - 21
Heat deflection temperature	ASTM D 648	@ 66 PSI	°C	58	89	54	89	48 - 50	58 - 60	48 - 52	51 - 57	46 - 55		46 - 55	53 - 56	93 - 98
		@ 264 PSI	°C	49	73	49	72	43 - 48	48 - 50			49 - 50		49 - 50	46 - 47	74 - 78
Glass transition, Tg	DMA, E" peak	°C	65		68	87	55	58	56	72	39 - 46		39 - 46		57 - 59	98 - 111
Coefficient of thermal expansion	TMA (T<Tg)				99 x 10 ⁻⁶	105 x 10 ⁻⁶			117 x 10 ⁻⁶	101 x 10 ⁻⁶	90 x 10 ⁻⁶		90 x 10 ⁻⁶		101 x 10 ⁻⁶	
Thermal conductivity		W/m °K	0.175		0.176											
Density		g/cm ³	1.18		1.24		1.19		1.21							

Please Note: ⁺ Resins may be withdrawn without notice. Humidity and temperature will affect material properties, therefore all figures are approximate.

^{*} Transparent, 'optical clarity' is only achieved with hand finishing and paint application, please contact an Arrk representative for more information.

[§] Intensity of 'tint' is dependent on section thickness, please contact an Arrk representative for more information.