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RenShape® SL 7820

Accurate and durable black coloured SL Resin

Key features

- Black parts with high strength and good dimensional stability, even in humid conditions
- ABS like, fine surface
- Low viscosity supports easy recoating during the build as well as good drainage for fast cleaning
- Good green strength requires minimal finishing

Key benefits

- Users can build accurate, robust parts
- Throughput is increased with reduced cure time and minimal part finishing
- Black color produces aesthetically pleasing parts with an ABS-like appearance

Key applications

RenShape SL 7820 is a black, low viscosity stereolithography resin with excellent accuracy, designed for use on solid state SLA® platforms. It offers a large working envelope of physical properties, high elongation and impact strength suitable for building concept models, functional prototype parts

7820 RenShape® SL

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RenShape® SL 7820 stereolithography material is a white, low viscosity stable liquid that produces strong black models and prototypes with good surface finish and detail, an ABS-like appearance. The product is also well suited for building RTV patterns. Parts built with SL7820 exhibit durability over time beyond 6 months..

Liquid material

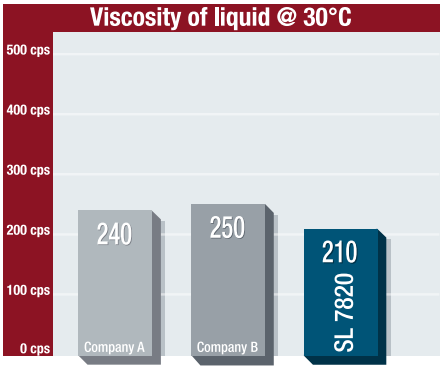
Appearance	White liquid
Density at 25°C (77°F)	1.13 g/cm^3
Viscosity	
at 28°C (82°F)	240 cps
at 30°C (86°F)	210 cps
Penetration depth (Dp)	4.5 mils
Critical exposure (Ec)	10 mJ/cm^2
Part building layer thickness*	0.10 mm (0.004 in.)

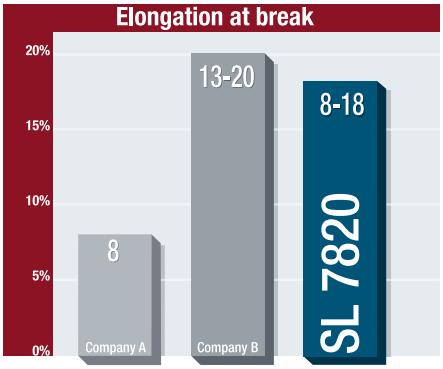
* Dependent upon part geometry and build parameters

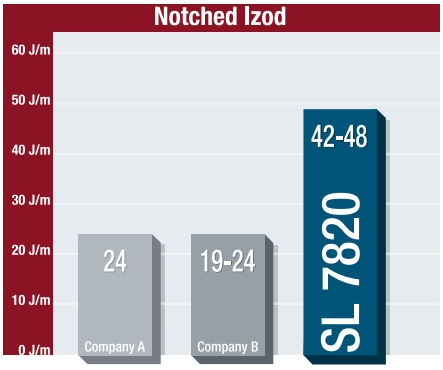
Post-cured material

	90-minute UV post-cure	**90-minute UV + 2 hours @ 80°C (176°F) thermal post-cure**
Hardness ASTM D-2240	86 Shore D	87 Shore D
Flexural modulus ASTM D-790	2 000-2 400 MPa (290-348 ksi)	2 100-2 500 MPa (304-362 ksi)
Flexural strength ASTM D-790	59-80 MPa (8 500-11 100 psi)	62-80 MPa (9 000-11 100 psi)
Tensile modulus ASTM D-638	1 900-2 400 MPa (274-348 ksi)	2 000-2 500 MPa (290-362 ksi)
Tensile strength ASTM D-638	36-51 MPa (5 200-7 400 psi)	39-51 MPa (5 700-7 400 psi)
Elongation at break ASTM D-638	8-18%	9-14%
Impact strength, notched Izod ASTM D-256	42-48 J/m (0.79-0.91 ft.-lb./in.)	30-49 J/m (0.88-0.93 ft.-lb./in.)
Heat deflection temperature ASTM D-648 @ 66 psi	51°C (124°F)	50°C (122°F)
ASTM D-648 @ 264 psi	-°C (-°F)	-°C (-°F)
Glass transition, Tg DMA, E" peak	62°C (144°F)	62°C (144°F)
Coefficient of thermal expansion TMA (T<Tg)	93x10^{-6} / °C	93x10^{-6} / °C
Cured density	1.16 g/cm^3	–

Comparison tables







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