



LaserForm™ A6 metal

for use with Sinterstation® HiQ™ series and other SLS® systems

Create complex metal parts suitable for Rapid Tooling and Rapid Manufacturing



Quickly produce tooling with conformal cooling channels and other complex metal parts.

APPLICATIONS

- Complex tooling inserts for injection molding and die-casting
- Conformal cooling or heating channels integrated into tool designs
- Smaller and complex geometry metal parts
- Low volume metal part manufacturing

FEATURES

- Good surface finish
- Compatible with machining, EDM processing and polishing
- High surface hardness
- Excellent thermal conductivity
- Good “green” part strength

BENEFITS

- Fast — from STL file to metal parts in less than 4 days
- Outstanding repeatability
- Eliminates human errors made in conventional metal and toolmaking processes
- Tooling inserts can improve molding cycle time by up to 40%
- Creative design possibilities

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Quickly create metal parts



Build "green" part



Cover "green" part and bronze infiltrant with alumina powder

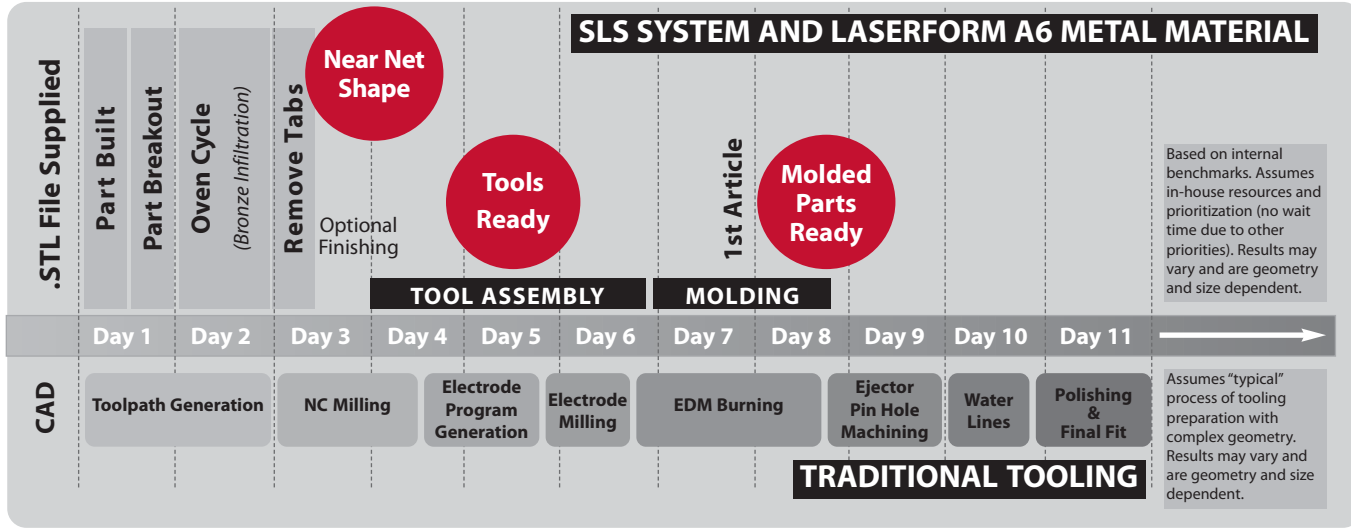


Place into oven to debind and infiltrate



Post-finish, as necessary

Compare SLS metal tooling vs. traditional tooling



Produce functional metal tooling in less than 4 days using Laserform A6 material, compared to 11+ days needed to prepare traditional tooling inserts.

TECHNICAL DATA

Mechanical Properties* (Sintered and Infiltrated)

MEASUREMENT	METHOD/CONDITION	METRIC	US
Specific Gravity	ASTM D792	7.8 g/cm ³	7.8 g/cm ³
Tensile - Yield Strength (0.2%)	ASTM E8	470 MPa	68 ksi
Tensile Strength	ASTM E8	610 MPa	88 ksi
Elongation (%)	ASTM E8	2.0 - 4.0%	2.0 - 4.0%
Young's Modulus	ASTM E8	138 GPa	20,000 ksi
Compression - Yield Strength	ASTM E8	480 MPa	70 ksi
Hardness (Rockwell "C")			
as infiltrated	ASTM E18	HRc = 10 - 20 (polished surface)	
as heat treated	ASTM E18	HRc = 39	
Thermal Conductivity @ 215°C	ASTM E457	39 W/m-°C	23 BTU/ft-hr-°F
Coefficient of Thermal Expansion	ASTM E831	7.45 μm/m-°C	4.14 μin/in-°F

* Data was generated from testing of bronze infiltrated parts produced with LaserForm A6 material and a Vanguard™ HS SLS system using 3D Systems' defined parameters. Material properties may vary and are dependent upon part geometry and other factors.



SYSTEMS

TRANSFORM YOUR PRODUCTS

3D Systems Corporation
333 Three D Systems Circle
Rock Hill, SC 29730 U.S.A.

Tel: 803.326.4080
Toll-free: 800.889.2964
Fax: 803.324.8810

moreinfo@3dsystems.com
www.3dsystems.com
NASDAQ: TDSC

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