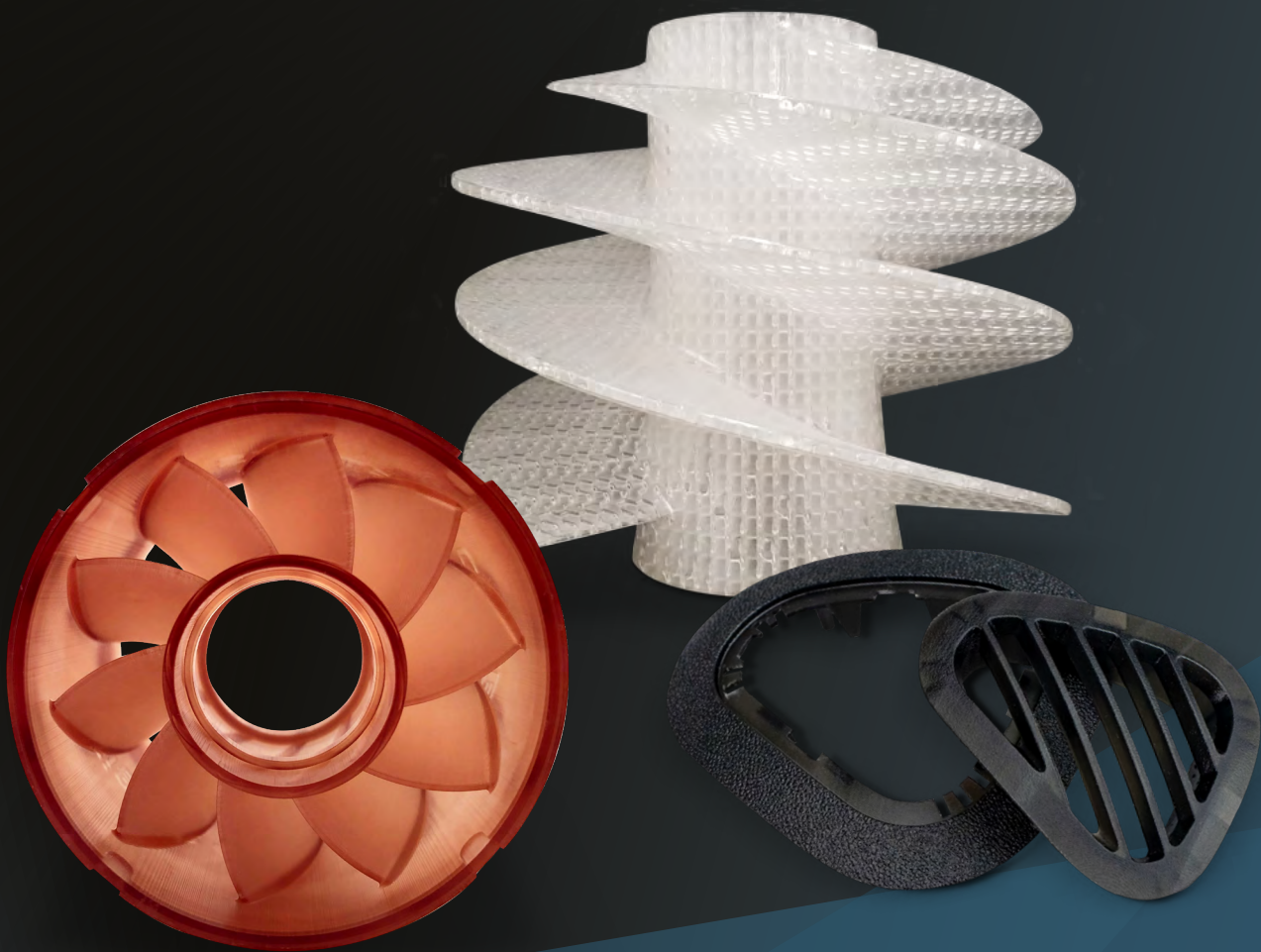


MATERIALS BUYER'S GUIDE

Accelerate Your Business with 3D Printing Materials for Prototyping and Production Applications



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Materials Buyer's Guide – Polymers

3D printing is developing fast. With ever-evolving technologies and materials, the range of addressable applications across industries has never been so varied or offered such huge opportunities. Outsourcing costs can be cut, iterations sped up, production and prototyping optimized. Thanks to innovations in 3D printing and materials development, entirely new business models are being unlocked.

Plastic printing materials are particularly versatile. A wide array of specialist engineering polymers, elastomers and composites are now available to deliver desirable parts in terms of flexibility, durability, stiffness, toughness, stability, clarity and look and feel.

And it doesn't stop there. Technical innovations in plastics offer bio-compatibility, temperature and water resistance among other sought-after qualities.

However, no one material can do everything. As the world of 3D printing expands and precision solutions emerge, there's an ever greater need to understand how materials and their associated printing technologies work.

This guide offers a general introduction to 3D printing plastics and their particular characteristics and applications. Transparent plastics, nylon, rigid and durable materials, high-temperature, composites, bio-compatible and more.

With ever-evolving technologies and materials, the range of addressable applications across industries has never been so varied or offered such huge opportunities.

Use this guide to help navigate through your material choices and help you decide which material is ideal for your project, whether it's concept modeling, functional testing, rapid tooling or direct 3D parts manufacturing.



Before diving in, it may be helpful to familiarize yourself with the available 3D printing processes for prototyping and production. Accordingly, below you will find a brief summary to help you navigate this technology and related terms.

STEREOLITHOGRAPHY (SLA) printing works by curing resin with light in a process called photopolymerization. It is one of the most accurate forms of 3D printing.

Closely related is **FIGURE 4 TECHNOLOGY**, which works with projection, rather than lasers. Our **ENTRY-LEVEL INDUSTRIAL** printing is also a projection-based technology.

PROJECTION-BASED STEREOLITHOGRAPHY (PSLA) is a process that merges the speed and material performance of light-projection 3D printing with the precision,

repeatability and surface quality of traditional SLA.

Particularly good for rapid prototyping and small runs of production parts, are additive manufacturing (AM) techniques like **SELECTIVE LASER SINTERING (SLS)**. SLS uses lasers as a power source to sinter plastic powder, binding material to create a solid structure.

MULTIJET PRINTING (MJP) uses similar technology to inkjet printing, but deposits photo-curable resin or castable wax layer-by-layer to build up parts and molds with fine feature details.

Finally, this guide will show you how particular materials and technologies can be used for prototyping with short runs and production with longer runs and more complex finishes.

For information on printer-material compatibility, please refer to the appendix at the end of this guide.

The Materials - How They're Organized



This guide takes a practical approach and groups plastic materials by their defining characteristic and conventional base of comparison.

Property and use categories include casting, composites, full-color, general purpose, tough and durable, high temperature, transparent, and biocompatible.

Different materials in each use category rely on different printing processes and can deliver different strengths and advantages for prototyping and production. There are also many materials that are suitable for both prototyping and production applications.

The adjacent icons are used throughout the guide to denote which applications they are suitable for.



PRODUCTION

Indicates materials compatible with production processes, including: direct parts production, indirect production, and production tools.



PROTOTYPING

Indicates materials compatible with prototyping, including concept and visualization models, functional prototypes, and test parts.



Standard Polymers

VERSATILE, ALL-AROUND PERFORMANCE MATERIALS FOR GENERAL PURPOSE

Our general-purpose polymers provide balanced mechanical strength, durability, and printability, making them reliable choices for a wide range of everyday prototypes and functional concept models.





Rubber-Like

High tear strength, malleable parts



- PRODUCTION
- PROTOTYPING

FIGURE 4

Figure 4® RUBBER-BLK 10
Figure 4® RUBBER-65A BLK

SELECTIVE LASER SINGERING

DuraForm® TPU 90A

PROPERTIES:

- Durable
- Abrasion and tear resistance
- Excellent detail and surface finish
- Good recovery memory

GOOD FOR:

- Functional prototypes with rubber-like properties
 - Gaskets
 - Hoses
 - Seals
- Low to mid-volume direct manufacturing of end-use parts
- Strain-relief applications

	<p>Figure 4® RUBBER-BLK 10</p>	<p>A malleable material with high tear strength for hard, rubber-like parts. For use with Figure 4 technology.</p>
	<p>Figure 4® RUBBER-65A BLK</p>	<p>A mid-tear strength, production-grade rubber combined with Shore 65A hardness and a high elongation at break.</p>
	<p>DuraForm® TPU 90A</p>	<p>A long-term stable, performance material that is chemical resistant and biocompatible.</p>



Prototyping Elastomer

Design and prototyping elastomer



PROTOTYPING

MJP

VisiJet® M2E-BK70

VisiJet® M2 ENT

VisiJet® M2 EBK

VisiJet® CE-NT

VisiJet® CE-BK



PROPERTIES:



Rubber-like



Excellent compressive characteristics








High elongation

GOOD FOR:

- Design verification and testing of:
 - Overmolds
 - Weather stripping
 - Seals and gaskets
 - Grommets
 - Bumpers
 - Treads
 - Grips and handles
- Rubber-like and elastomeric products for industrial and consumer goods applications

Delivers best-in-industry elastomeric material performance to meet demanding engineering and design applications.

	VisiJet® M2E-BK70	A tough, black elastomer with a high Shore A hardness of 70 and excellent rebound after compression for use with the ProJet® MJP 2500 Plus.
	VisiJet® M2 ENT	A translucent, natural color elastomeric material for use with the ProJet® MJP 2500 Plus.
	VisiJet® M2 EBK	An opaque black material for use with the ProJet® MJP 2500 Plus.
	VisiJet® CE-NT	A translucent, natural color elastomeric material for use with the ProJet® MJP 5600 that can be used for life-like models of human anatomy and medical modeling.
	VisiJet® CE-BK	A high contrast, opaque black material for use with the ProJet® MJP 5600.



Rigid, Flexible

Look and feel of polypropylene-molded parts



PRODUCTION



PROTOTYPING

SLA

Accura® 25

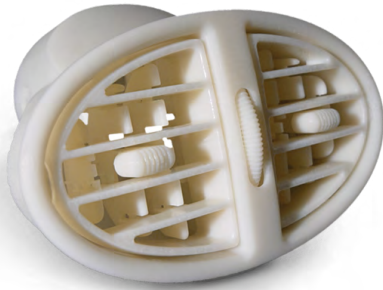
Accura® PP White

FIGURE 4

Figure 4® FLEX-BLK 20

MJP

VisiJet® CR-WT 200



PROPERTIES:



Accurate







Durable and highly flexible



Excellent shape retention

GOOD FOR:

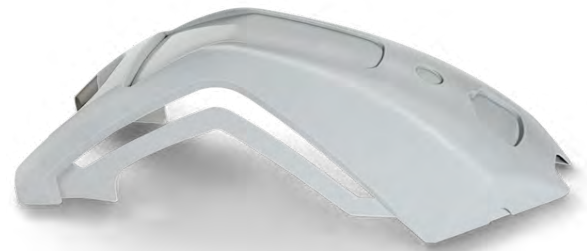
- Prototyping
- Functional testing
- Low-volume production
- Master patterns for RTV/silicone molding
- Snap-fit assemblies

	Accura® 25	A general purpose flexible plastic for use with 3D Systems' SLA printers.
	Accura® PP White	A white material for use with 3D Systems ProX® 950 machines.
	Figure 4® FLEX-BLK 20	A flexible, high impact, black material for use with Figure 4 technology.
	VisiJet® CR-WT 200	Builds rigid white plastic parts with extreme durability, smooth surfaces and high rigidity.



Ultra-Tough

Look and feel of durable molded plastic



PRODUCTION



PROTOTYPING

SLA

Accura® AMX™ Rigid Black

Accura® AMX Rigid Composite White

Accura® Xtreme

Accura® Xtreme White 200

PROPERTIES:



Accurate



Durable



Impact resistance



Thermal resistance







Moisture resistance

GOOD FOR:

- Rapid prototyping
- Functional assemblies
- Snap-fit components
- Consumer electronic components
- Drill/tap applications
- Master patterns for vacuum casting

Replaces injection molding and other tooling processes.

	Accura® AMX™ Rigid Black	A production-grade black resin engineered for long-term use plastic parts requiring a good balance of heat deflection temperature, flexural modulus, and elongation at break.
	Accura® AMX Rigid Composite White	Filled resin that produces high stiffness, rigid parts, fast with minimized post-processing.
	Accura® Xtreme	A gray plastic for use with 3D Systems' SLA printers.
	Accura® Xtreme White 200	A white plastic for use with 3D Systems' SLA printers.



Ultra-Tough

Look and feel of durable molded plastic



PRODUCTION



PROTOTYPING

PROPERTIES:



Accurate



Durable



Impact resistance



Thermal resistance



Moisture resistance









GOOD FOR:

- Rapid prototyping
- Functional assemblies
- Snap-fit components
- Consumer electronic components
- Drill/tap applications
- Master patterns for vacuum casting

FIGURE 4

- Figure 4® PRO-BLK 10
- Figure 4® Rigid White
- Figure 4® Rigid Gray
- Figure 4® Tough 60C White
- Figure 4® Tough 65C Black
- Figure 4® Rigid Composite White
- Figure 4® HI TEMP 300-AMB
- Figure 4® F3 Orange

Replaces injection molding and other tooling processes.

	Figure 4® PRO-BLK 10	A versatile black plastic for use with Figure 4 technology. This material offers industry-leading environmental stability for direct production parts.
	Figure 4® Rigid White	An opaque rigid white production-grade plastic for same-day parts. Provides a smooth surface finish, long-term environmental stability, and long-lasting, clean white color.
	Figure 4® Rigid Gray	A high contrast gray production-grade plastic for long-term use parts with balanced thermal and mechanical properties.
	Figure 4® Tough 60C White	A white plastic for long-term use parts with a good combination of impact strength, elongation and tensile strength.
	Figure 4® Tough 65C Black	A black plastic for long-term use parts with a good combination of impact strength, elongation and tensile strength.
	Figure 4® Rigid Composite White	A filled resin that produces high stiffness, rigid parts, fast with minimized post-processing.
	Figure 4® HI TEMP 300-AMB	Industry-leading, ultra-high temperature resistant rigid plastic suitable for the harshest thermal environments.
	Figure 4® F3 Orange	High resolution, distinguishable parts with excellent surface finish. Rigid mechanical properties with good heat resistance give robust parts for a wide range of applications across form, fit and functional testing.



Rigid

Look and feel of injection molded polymer



PROTOTYPING



MJP

VisiJet® M2R-BK

VisiJet® M2R-CL

VisiJet® M2R-GRY

VisiJet® M2R-TN

VisiJet® M2R-WT

VisiJet® M2S-HT90

VisiJet® M2S-HT250

PROPERTIES:

Rigid

Durable



Smooth surface finish

GOOD FOR:

- Rapid prototyping
- Rapid tooling
 - Applications requiring high temperature resistance
- Certain medical applications (see annotations regarding USP Class VI capability below)

	VisiJet® M2R-BK	An opaque black plastic for use with the ProJet MJP 2500 Series. This material is ideal for panels and thin-walled parts and offers moderate to high temperature resistance.
	VisiJet® M2R-CL	A clear rigid plastic with moderate flex for use with the ProJet MJP 2500 Plus. This material is Class VI capable for use in certain medical applications.
	VisiJet® M2R-GRY	A high contrast gray plastic for use with the ProJet MJP 2500 Plus. This material is Class VI capable for use in certain medical applications.
	VisiJet® M2R-TN	An opaque tan plastic for use with the ProJet MJP 2500 Plus. This material is ideal for applications at high temperature requiring rigidity and details visualization.
	VisiJet® M2R-WT	A rigid, opaque white plastic with moderate flex for use with the ProJet MJP 2500 Series. This material is Class VI capable for use in certain medical applications.
	VisiJet® M2S-HT90	A strong and transparent rigid material for use with the ProJet MJP 2500 Plus for applications requiring temperature resistance up to 90°C and/or biocompatibility.
	VisiJet® M2S-HT250	A strong, rigid material with best-in-class heat deflection temperature of 250°C for functional testing in high heat environments. Available for the ProJet MJP 2500 Plus, this material is Class VI capable for use in certain medical applications.



Rigid

Look and feel of injection molded plastic



PROTOTYPING



MJP

VisiJet® M3 Black







VisiJet® M3 Crystal

VisiJet® M3 Navy

VisiJet® M3 Proplast

VisiJet® M3 Techplast

VisiJet® M3-X

	VisiJet® M3 Black	A black plastic with high elongation for use with the ProJet MJP 3600 Series.
	VisiJet® M3 Crystal	A transparent plastic for use with the ProJet MJP 3600 Series. This material is Class VI capable for use in certain medical applications.
	VisiJet® M3 Navy	A blue plastic for use with the ProJet MJP 3600 Series.
	VisiJet® M3 Proplast	A natural color plastic for use with the ProJet MJP 3600 Series.
	VisiJet® M3 Techplast	A gray plastic for use with the ProJet MJP 3600 Series.
	VisiJet® M3-X	An opaque white plastic for use with the ProJet MJP 3600 Series. This material offers thermal resistance with the look, feel, and performance of injection molded plastic.



High Temperature (Ultra Rigid)

ULTRA-RIGID POLYMERS BUILT FOR HEAT-INTENSIVE APPLICATIONS

Designed for applications where heat resistance is critical, these polymers deliver stable mechanical performance and structural integrity at elevated temperatures, making them suitable for thermal testing, functional assemblies, and harsh operating conditions.





For High Temperature Materials, Please Refer to the Following Listings:

- 10 | **Figure 4® HI TEMP 300-AMB**
(Rigid, Translucent Amber Biocompatible Material)
- 11 | **VisiJet® M2S-HT90**
(MJP Rigid Plastic)
- 11 | **VisiJet® M2S-HT250**
(MJP Rigid Plastic)
- 12 | **VisiJet® M3-X**
(MJP Rigid Plastic General Purpose)
- 18 | **Accura® PEAK**
(SLA Ceramic-Reinforced Composite)
- 19 | **DuraForm® ProX® PA CF**
(SLS Fiber-reinforced Engineering Plastic)
- 19 | **Accura® HPC**
(SLA Thermal Resistant)
- 21 | **DuraForm® PA11 Black**
(SLS Fiber-reinforced Engineering Plastic)
- 21 | **DuraForm® PA11 Natural**
(SLS Fiber-reinforced Engineering Plastic)
- 22 | **DuraForm® PA**
(SLS Fiber-reinforced Engineering Plastic)
- 22 | **DuraForm® ProX® PA**
(SLS Fiber-reinforced Engineering Plastic)
- 24 | **DuraForm® ProX® GF**
(SLS Fiber-reinforced Engineering Plastic)
- 25 | **DuraForm® ProX® HST Composite**
(SLS Fiber-reinforced Engineering Plastic)
- 31 | **Figure 4® MED-AMB 10**
(Rigid, Translucent Amber Biocompatible Material)
- 31 | **Figure 4® MED-WHT 10**
(Rigid White Biocompatible Material)
- 36 | **Figure 4® JEWEL MASTER GRV**
(Rigid, Translucent Amber Biocompatible Material)





Tough

DURABLE MATERIALS FOR HIGH-IMPACT APPLICATIONS

Engineered to withstand stress, shock, and repeated use, these polymers offer reliable mechanical performance for functional prototypes and end-use parts that demand enhanced resilience.





Tough

Tough, accurate, functional parts



PRODUCTION



PROTOTYPING

SLA

Accura® 55

Accura® ABS White

Accura® ABS Black

Accura® AMX Durable Natural

Accura® AMX High Temp 300C

Accura® Xtreme Black



PROPERTIES:







Rigid

Tough

GOOD FOR:

- Design verification
- Functional prototyping
- Durable assemblies and snap-fits
- Short-run production
- Master patterns for RTV molding

Simulate and replace CNC-machined and injection-molded ABS articles.

	Accura® 55	A white material compatible with 3D Systems ProX 950 machines.
	Accura® ABS White	A white material that does not require painting and is compatible with 3D Systems' ProX 800 and ProX 950 machines.
	Accura® ABS Black	A black material that does not require painting and is compatible with 3D Systems' SLA machines.
	Accura® AMX Durable Natural	Tough for production/prototyping, rigid & tough — a production-grade resin with high impact, tear resistance, and long-term mechanical stability.
	Accura® AMX High Temp 300C	High-temperature (rigid) composite — suited for high-heat applications (HDT > 300 °C) while being production-grade.
	Accura® Xtreme Black	Tough for production/prototyping, rigid & tough — used for durable, engineering-grade applications.



Tough

Tough, accurate, functional parts



PRODUCTION



PROTOTYPING



MJP

Visijet® Armor (M2G-CL)

FIGURE 4

Figure 4® TOUGH-GRY 10

Figure 4® TOUGH-GRY 15

Figure 4® Tough 60C White

Figure 4® TOUGH-BLK 20

PROPERTIES:






Rigid

Tough

GOOD FOR:

- Design verification
- Functional prototyping
- Durable assemblies and snap-fits
- Short-run production
- Master patterns for RTV molding

Simulate and replace CNC-machined and injection-molded ABS articles.

	Visijet® Armor (M2G-CL)	A transparent material for use with the ProJet® MJP 2500 Series.
	Figure 4® Tough 60C White	Tough for production/prototyping, rigid & tough — designed for load-bearing snap-fits, brackets, handles and similar structural parts.
	Figure 4® TOUGH-BLK 20	Tough for production/prototyping, rigid & tough — general “tough” class, used for production-quality parts needing impact/structural strength.
	Figure 4® TOUGH GRY 10	A high contrast gray material for use with Figure 4® technology. This material is capable of print speeds up to 100 mm/hr and offers 25% elongation at break.
	Figure 4® TOUGH GRY 15	A high contrast gray material for use with Figure 4® technology. This material offers 35% elongation at break.



Ceramic-Reinforced Composite

High temperature, rigid parts



PRODUCTION



PROTOTYPING

SLA

Accura® PEAK

PROPERTIES:

Thermal resistance

Moisture resistance

Abrasion resistance

Ceramic-like

GOOD FOR:

- Ceramic-like components
- Jigs, fixtures, and tools
- Wind tunnel models
- Master patterns
- Water and fluid-handling components

Great for composite-like prototypes and assemblies.



Accura® PEAK

Stiff plastic material for heat-resistant components. Compatible with the and ProX 950.



High Performance Composite

Stable, high stiffness parts



PRODUCTION



PROTOTYPING

SLA

Accura® Composite PIV

Accura® HPC

Accura® Bluestone™

SLS

DuraForm® PA CF

PROPERTIES:





Thermal resistance

Exceptional stiffness/rigidity

Abrasion resistance

GOOD FOR:

- Wind tunnel models
- Under-the-hood automotive parts
- Electrical connectors, adaptor fittings, bases, and sockets
- Jigs, fixtures and tools

	Accura® Composite PIV	Rigid material with high contrast, color optimized for PIV wind tunnel testing to reduce preparation time and improve aerodynamic test performance.
	Accura® HPC	A white nano-composite material. This material offers high production speeds.
	Accura® Bluestone™	A blue nano-composite material for use with the ProX 800. This material offers the highest stiffness available, as well as excellent chemical resistance.
	DuraForm® PA CF	Carbon-fiber/Nylon composite — high-performance, temperature-resistant, stiff and lightweight nylon composite for functional or end-use parts.



High Elongation Nylon Copolymer

High Elongation Nylon Copolymer



PRODUCTION



PROTOTYPING

SLS

DuraForm® PAx Natural

DuraForm® PAx Black

PROPERTIES:

- High elongation
- High impact
- Tough and durable
- High recyclability

GOOD FOR:

- General purpose prototypes
- Tooling handles and grips
- Living hinges
- Orthotics
- Enclosures

Production-grade, high impact copolymer with high elongation and long-term stability for tough plastic parts.

	<p>DuraForm® PAx Natural</p>	<p>Natural color ready for dyeing.</p>
	<p>DuraForm® PAx Black</p>	<p>No painting required for a deep black color that does not fade or chip.</p>



Nylon 11

Impact and fatigue resistant



PRODUCTION



PROTOTYPING

SLS

DuraForm® PA11 Natural

DuraForm® PA11 Black

PROPERTIES:

Tough and durable



High elongation

High impact strength

GOOD FOR:

- Snap-fits
- Living hinges
- Connectors
- Ducting
- Jigs, fixtures, and tools

Tough enough to replace injection molded ABS and polypropylene.
Available in black and natural colors.

 <p>DuraForm® PA11 Natural</p>	<p>DuraForm PA11 Natural is produced from a renewable bio-source that offers outstanding toughness and excellent impact resistance.</p>
 <p>DuraForm® PA11 Black</p>	<p>Production-grade, high impact nylon 11 with high elongation at break.</p>



Nylon 12

Durable thermoplastic



PRODUCTION



PROTOTYPING

SLS

DuraForm® PA12 Black

DuraForm® PA

DuraForm® ProX® PA

PROPERTIES:

Tough and durable

Chemical resistance

Low moisture absorption

Class VI capable

GOOD FOR:

- Functional prototypes
- Low- to mid-volume production
- Housings and enclosures
- Jigs, fixtures, and tools
- Certain medical applications

	<p>DuraForm® PA12 Black</p>	<p>Long-term uv stable, matches toughness of injection molded thermoplastic parts</p>
	<p>DuraForm® PA</p>	<p>Durable polyamide (nylon) material for production parts</p>
	<p>DuraForm® ProX® PA</p>	<p>Highly versatile polyamide material. Machinable and paintable for demonstration parts.</p>



Flame-Retardant

Excellent for direct production in aerospace applications



PRODUCTION



FIGURE 4

Figure 4[®] 150C FR Black

Figure 4[®] Tough 75C FR Black

Figure 4[®] Tough FR V0 Black

SLA

Accura[®] AMX Tough FR V0 Black

SLS

DuraForm[®] FR-106

PROPERTIES:

Non-halogenated

Flame-retardant

Excellent surface finish

FAR 25.853 compliant






Passes AITM guidelines for smoke density and toxicity

Tough and durable

GOOD FOR:

- Aircraft interior parts
- Consumer goods and electronics
- Components requiring flame retardancy

Delivers highly accurate flame-retardant parts with excellent surface quality for aerospace, transportation, and consumer goods applications. Enables direct 3D production in aerospace to accelerate part delivery and reduce downtime.

	Figure 4[®] 150C FR Black	UL94 V0 rated flame-retardant black plastic with >150 °C heat deflection temperature.
	Figure 4[®] Tough 75C FR Black	A flame-retardant, production-ready resin with good toughness and electrical/thermal performance.
	Figure 4[®] Tough FR V0 Black	A UL94 V0-rated, tough, production-grade resin.
	Accura[®] AMX Tough FR V0 Black	A tough, production-grade and UL94 V0-rated SLA resin.
	DuraForm[®] FR-106	A flame-retardant Nylon 11 SLS powder, suitable for production parts where fire-retardancy and durability are required.



Glass-Filled Nylon 12 Composite

High stiffness engineering plastic



PRODUCTION



SLS

DuraForm® ProX® GF

PROPERTIES:

Thermal resistance

Fuel and oil resistance

Best-in-class rigidity and stiffness

GOOD FOR:

- Low to mid-volume production parts
- Aircraft, motorsports and sporting goods parts

Replaces molded and CNC-machined glass and mineral-filled plastic articles for short-run production.



DuraForm® ProX® GF

Compatible with the ProX® SLS 380.

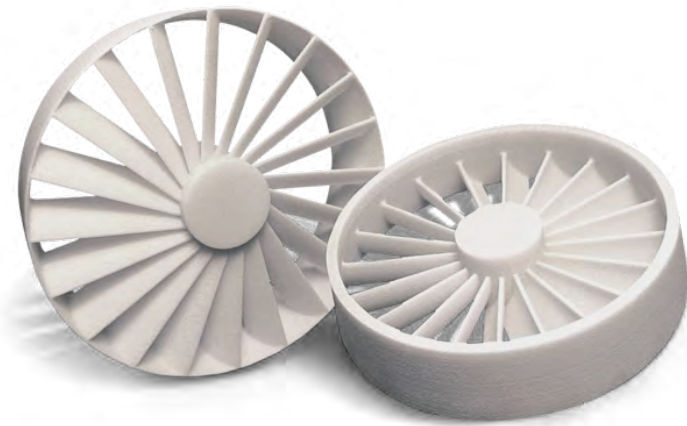


High Temperature Nylon 12

Stiff, fiber-reinforced engineering plastic



PRODUCTION



SLS

DuraForm® ProX® HST
Composite

PROPERTIES:

Rigid

Non-conductive

RF transparent

High temperature resistance

GOOD FOR:


- Low to mid-volume direct manufacturing of end-use parts
- Enclosures and housings that require elevated stiffness
- Aircraft and motorsports parts
- Sporting goods

Excellent for testing and use in rugged environments.



DuraForm® ProX® HST
Composite

Compatible with the SLS 380.



Transparent

MATERIALS FOR CLEAR, DETAILED VISUAL PARTS

These polymers deliver optical transparency and smooth surface quality, making them ideal for prototypes that require visibility into internal features, light transmission, or polished aesthetic presentation.

(Excludes clear casting materials, found in the Castable Materials section on page 32)

High Clarity Resin

High rigidity clear plastic



PRODUCTION



PROTOTYPING

SLA

Accura® ClearVue™

Accura® ClearVue™ Free

PROPERTIES:

Polycarbonate-like

Transparent

Excellent humidity/moisture resistance

GOOD FOR:

- Rapid prototyping
 - Headlamps
 - Lenses
- Visualization models
- Snap-fit assemblies
- Certain medical models and devices

SEE ALSO:

- 11 | **VisiJet® M2R-CL**
(MJP Rigid Plastic)
- 12 | **VisiJet® M3 Crystal**
(MJP Rigid Plastic)
- 16 | **VisiJet® Armor (M2G-CL)**
(MJP Tough Plastic)
- 27 | **VisiJet® ProFlex (M2G-DUR)**
(MJP Rigid Clear Plastic)
- 38 | **Accura® CastPro**
(SLA Clear Castable Resins)
- 39 | **Accura® Fidelity™**
(SLA Clear Castable Resins)

Exceptional clarity plastic for a wide range of applications.

	<p>Accura® ClearVue™</p>	<p>A transparent material for use with 3D Systems' SLA machines.</p>
	<p>Accura® ClearVue™ Free</p>	<p>A transparent antimony-free material for use with 3D Systems' ProX 950 machines.</p>

Long-term Stable Clear Resin

A clear, production-grade material offering long-term environmental UV, humidity stability and clarity



PRODUCTION



PROTOTYPING



FIGURE 4

Figure 4® Tough Clear

MJP

VisiJet® CR-CL 200

PROPERTIES:

Excellent clarity improved by post-processing steps

Long-term environmental stability of mechanical properties and performance

Tough

GOOD FOR:

- Load-bearing handles, cranks, knobs and levers
- Structural brackets, snap-fits and fasteners
- Lighting covers, cases and reflectors
- Lenses and light guides
- Fast-moving consumer goods and consumer packaging



Figure 4® Tough Clear

A clear, production-grade material engineered to offer long-term stability and clarity that avoids fading or discoloration.



VisiJet® CR-CL 200

A Class VI capable material suitable for use in certain medical applications as well as other non-medical applications where rigid function and moderate flex are desirable.

Clear, Multi-Purpose Resin

Stable, accurate parts with aesthetics of molded polycarbonate



PRODUCTION



PROTOTYPING



SLA

Accura® 60

MJP

VisiJet® Armor Max (M2G-JF)

VisiJet® ProFlex (M2G-DUR)

PROPERTIES:

Clear and transparent

Rigid and strong

GOOD FOR:

- Tough, functional prototypes
- Transparent assemblies
- Investment casting patterns
- Clear display and visualization models
 - Lighting components (lenses, etc.)
 - Headlamps
 - Bottles

Good general-purpose material with aesthetics of polycarbonate; suitable for investment casting applications.

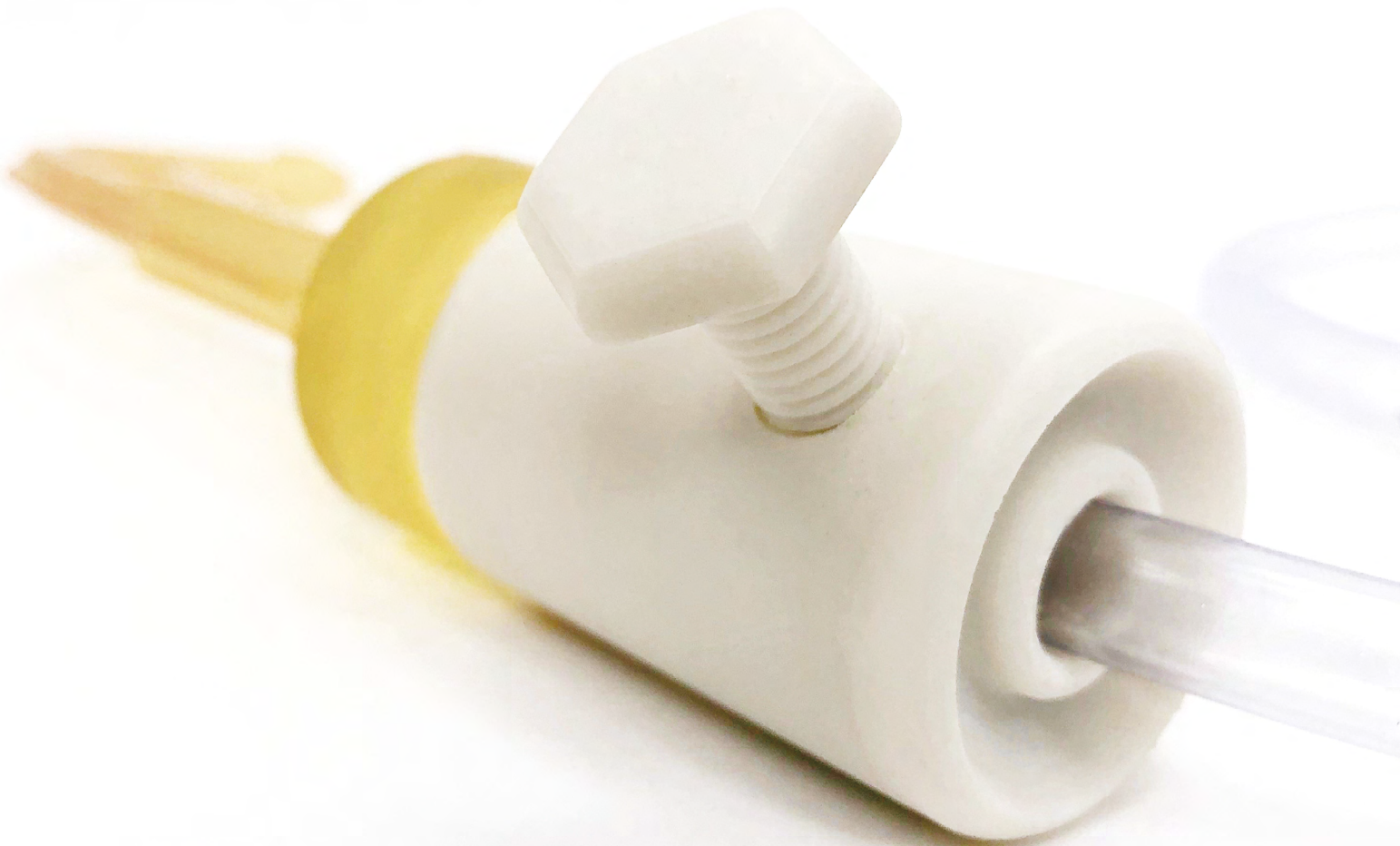
	<p>Accura® 60</p>	<p>Clear plastic for quickly producing rigid and strong parts with the aesthetics of molded polycarbonate (PC). Also suitable for investment casting patterns.</p>
	<p>VisiJet® Armor Max (M2G-JF)</p>	<p>Ideal for applications requiring a balance of strength and toughness with a clear aesthetic.</p>
	<p>VisiJet® ProFlex (M2G-DUR)</p>	<p>This polypropylene-like rigid clear plastic delivers an effective combination of high impact resistance and extreme flex to provide robust engineering-grade performance.</p>



Biocompatible

SAFE, TESTED, PATIENT-COMPATIBLE POLYMERS

These polymers meet certified biocompatibility standards, enabling the production of medical devices, anatomical models, and components intended for skin or short-term mucosal contact while maintaining high accuracy and reliability. USP Class VI capable and/or ISO 10993 capable.





Biocompatible & Rigid Plastic

Suitable for medical and industrial applications



PRODUCTION



PROTOTYPING

FIGURE 4

Figure 4® MED-AMB 10

Figure 4® MED-WHT 10



PROPERTIES:

- Rigid
- Thermal resistance
- Humidity/Moisture resistance
- High accuracy

GOOD FOR:

- Medical applications, including:
 - Surgical drill guides
 - Splints
 - Anatomical or bone models
- High temperature applications

Excellent feature resolution and high definition parts for medical and industrial applications. Can be sterilized and tested at high temperatures.

	<p>Figure 4® MED-AMB 10 A rigid, translucent amber material for use with Figure 4® technology.</p>
	<p>Figure 4® MED-WHT 10 A rigid, white material for use with Figure 4® Standalone.</p>

Biocompatibility is based on testing by an independent lab on a single geometry and sample set per USP Class VI and/or ISO 10993. Users should confirm fitness for use and biocompatibility for their applications.

SEE ALSO:

- 06 | **Figure 4® RUBBER-BLK 10 & RUBBER-65A BLK** (Rubber-Like)
- 07 | **VisiJet® M2E-BK70** (MJP Rubber-Like)
- 10 | **Figure 4® PRO-BLK 10, Rigid 140C Black, Rigid White, Rigid Gray, Tough 60C White, Tough 65C Black** (Ultra-Tough Plastic)
- 11 | **VisiJet® M2S-HT90, M2S-HT250, VisiJet® M2R-CL, VisiJet® M2R-TN, VisiJet® M2R-WT & M2R-GRY** (MJP Rigid Plastic)
- 12 | **VisiJet® M3 Crystal** (MJP Rigid Plastic)
- 13 | **VisiJet® CR-BK, CR-CL 200 & CR-WT 200** (MJP Rigid Plastic)
- 16 | **Accura® ABS White** (SLA Rigid Plastic)
- 21 | **DuraForm® ProX® PA** (SLS Nylon 12)
- 26 | **Accura® ClearVue™** (SLA High Clarity Resin)



Castable Materials

MATERIALS ENGINEERED FOR PRECISION CASTING

Optimized for clean burnout and smooth surface reproduction, these castable resins deliver crisp detail and dependable performance across jewelry, industrial, and silicone-molding applications.





Castable Wax

100% wax for repeatable casting patterns fitting seamlessly into existing foundry workflows



PRODUCTION



PROTOTYPING



MJP

- VisiJet® M2 ICast
- VisiJet® M2 CAST
- VisiJet® M3 CAST
- VisiJet® Wax Jewel Red
- VisiJet® Wax Jewel Ruby
- VisiJet® Wax Jewel Red






PROPERTIES:

- High resolution
- High contrast color
- 100% wax

GOOD FOR:

- Metal casting

Delivers durable, high quality patterns for reliable performance and results throughout existing lost-wax casting process and equipment.

	VisiJet® M2 ICast	A paraffin-based wax for the ProJet MJP 2500 IC printer; ideally suited for small- to medium-sized industrial component casting patterns.
	VisiJet® Wax Jewel Red	Durable and flexible, high contrast brilliant red 100% wax for intricate jewelry casting patterns on the ProJet MJP 2500W Plus & 300W Plus.
	VisiJet® Wax Jewel Ruby	Durable, flexible, and dimensionally stable 3D printed pure wax casting patterns on the ProJet MJP 2500W Plus & 300W Plus.
	VisiJet® M2 CAST	A high contrast, deep purple wax material for sharp edges and smooth surfaces jewelry casting patterns on the ProJet MJP 2500W.
	VisiJet® M3 CAST	A high contrast deep purple color for precision jewelry and metal casting, delivering repeatable high quality, durable patterns at high throughput.



Clear Castable Resins

Stable medium to extra-large lightweight QuickCast casting patterns



PRODUCTION



PROTOTYPING



SLA

Accura® CastPro™

Accura® Fidelity™

PROPERTIES:

Excellent humidity/
moisture resistance

Transparent

Stable

GOOD FOR:



- QuickCast patterns for prototype and production parts
- A range of castings, including titanium, aluminum, magnesium, zinc, plaster and ferrous metals

SEE ALSO:

26 | Accura® ClearVue™
(SLA Clear, Rigid Plastic)

28 | Accura® 60
(SLA Clear, Multi-Purpose Resin)

Accurate and durable clear resin materials for 3D printing QuickCast investment casting patterns. Parts retain dimensions, and platform size of SLA build platforms enables large part casting. Easy post-curing and fast part finishing.

	<p>Accura® Fidelity™</p> <p>An ultra-low viscosity (117 cps at 30°C), antimony-free resin for high yield investment casting QuickCast patterns.</p>
	<p>Accura® CastPro™</p> <p>A highly accurate material for stable, high quality investment casting patterns using QuickCast build style.</p>



Castable Resins for Jewelry

High resolution metal casting



PRODUCTION



PROTOTYPING



SLA

Accura® Sapphire

FIGURE 4

Figure 4® JCAST-GRN 20

PROPERTIES:

High contrast color

Minimal ash and residue

Accurate

GOOD FOR:

- Jewelry manufacturing
- Direct metal casting
- Master pattern production

These castable resins produce accurate, reproducible, and highly detailed master patterns for jewelry casting. These high contrast materials cast with minimal ash and residue for high quality jewelry pieces.

Compatible with high temperature rubber molding operations; material is also suitable for design testing and presentation with stunning high contrast, painted or plated models.

	<p>Accura® Sapphire</p>	<p>A high contrast deep blue color for use with 3D Systems' ProJet SLA® printers.</p>
	<p>Figure 4® JCAST-GRN 20</p>	<p>A high contrast green color for use with Figure 4® technology.</p>



Jewelry Master Patterns & Prototypes

Versatile high contrast gray resin



PRODUCTION



PROTOTYPING

FIGURE 4

Figure 4® JEWEL MASTER GRY

MJP

Visijet® M2P-CST Crystal

PROPERTIES:

High heat deflection temperature (up to 300 °C) compatible with a range of silicones

Stunning surface finish and excellent print quality available in 30 µm and 50 µm build styles

High contrast gray color shows fine details

Meets biocompatibility standard ISO 10933-5 for cytotoxicity

GOOD FOR:

- High definition master patterns for silicone and RTV molds
- Extended try-ons and fit tests
- Snap-fit and stone-in-place testing
- Design and functional prototyping

	<p>Figure 4® JEWEL MASTER GRY</p>	<p>A versatile, high HDT master pattern material for jewelry silicone molds and high visualization detailed prototypes of complex and fine designs.</p>
	<p>Visijet® M2P-CST Crystal</p>	<p>A production-ready, translucent, castable resin that preserves fine features and thin walls.</p>



General Purpose Castable Plastic

High resolution for small and delicate feature details



PROPERTIES:

High contrast dark blue color

Rigid

GOOD FOR:

- Delicate jewelry pieces
- Medical instruments and devices
- Custom metal applications



PRODUCTION



PROTOTYPING

MJP

Visijet® M3 Procast

SLA

Accura® SBF

Break-Away Plastic for Silicone Molding

Rigid plastic compatible with all durometer silicones



PRODUCTION



PROTOTYPING

FIGURE 4

Figure 4® EGGHELL-AMB 10

PROPERTIES:

Withstands high temperature and pressure of silicone injection

Designed to shatter easily after filled and cooled

GOOD FOR:

- Silicone castings
- Customized end-use silicone parts
- Low-volume production of silicone parts

What's Next?

Our materials scientists are constantly working to grow the capabilities of additive manufacturing through the development of more material options. Stay tuned for updates to this guide as we continue to expand our materials selection to enable your innovation.

Talk to one of our experts about your specific application and what material/technology is best for your needs.

[CONTACT US](#)

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Appendix

FIGURE 4 / PSLA	
Material	Certified Printers
Figure 4® EGGHELL-AMB 10	Figure 4® 135, Figure 4® Modular, Figure 4® Production, Figure 4® Standalone, PSLA 270
Figure 4® F3 Orange	PSLA 270
Figure 4® FLEX-BLK 20	Figure 4® 135, Figure 4® Modular, Figure 4® Production, Figure 4® Standalone
Figure 4® HI TEMP 300-AMB	Figure 4® 135, Figure 4® Modular, Figure 4® Production, Figure 4® Standalone, PSLA 270
Figure 4® High Temp 150°C FR Black	Figure 4® 135, Figure 4® Modular, Figure 4® Production, Figure 4® Standalone
Figure 4® JCAST-GRN 20	Figure 4® 135, Figure 4® Standalone
Figure 4® JEWEL MASTER GRY	Figure 4® Standalone
Figure 4® MED-WHT 10	Figure 4® Standalone
Figure 4® PRO-BLK 10	Figure 4® 135, Figure 4® Modular, Figure 4® Production, Figure 4® Standalone, PSLA 270
Figure 4® Rigid Composite White	Figure 4® Modular, PSLA 270
Figure 4® Rigid Gray	Figure 4® 135, Figure 4® Modular, Figure 4® Production, Figure 4® Standalone, PSLA 270
Figure 4® Rigid White	Figure 4® 135, Figure 4® Modular, Figure 4® Production, Figure 4® Standalone, PSLA 270
Figure 4® RUBBER-65A BLK	Figure 4® Modular, Figure 4® Standalone, Figure 4® Production
Figure 4® RUBBER-BLK 10	Figure 4® Modular, Figure 4® Standalone, Figure 4® Production
Figure 4® Tough 60C White	Figure 4® Modular, Figure 4® Standalone, Figure 4® Production
Figure 4® Tough 65C Black	Figure 4® Modular, Figure 4® Standalone, Figure 4® Production
Figure 4® Tough 75C FR Black	Figure 4® 135, Figure 4® Modular, Figure 4® Production, Figure 4® Standalone, PSLA 270
Figure 4® Tough Clear	Figure 4® Modular, Figure 4® Production, Figure 4® Standalone
Figure 4® Tough FR V0 Black	Figure 4® 135, Figure 4® Modular, Figure 4® Production, Figure 4® Standalone
Figure 4® TOUGH-BLK 20	Figure 4® Modular, Figure 4® Standalone, Figure 4® Production
Figure 4® TOUGH-GRY 10	Figure 4® Modular, Figure 4® Standalone, Figure 4® Production
Figure 4® TOUGH-GRY 15	Figure 4® Modular, Figure 4® Standalone, Figure 4® Production
MJP	
Material	Certified Printers
VisiJet® Armor (M2G-CL)	ProJet® MJP 2500/2500 Plus
VisiJet® Armor Max (M2G-JF)	ProJet® MJP 2500/2500 Plus
VisiJet® CE-BK	ProJet® MJP 5600
VisiJet® CE-NT	ProJet® MJP 5600
VisiJet® CR-BK	ProJet® MJP 5600
VisiJet® CR-CL 200	ProJet® MJP 5600
VisiJet® CR-WT 200	ProJet® MJP 5600
VisiJet® M2 CAST	ProJet® MJP 2500W Plus
VisiJet® M2 EBK	ProJet® MJP 2500/2500 Plus
VisiJet® M2 ENT	ProJet® MJP 2500/2500 Plus
VisiJet® M2 ICAST	ProJet® MJP 2500 IC
VisiJet® M2E-BK70	ProJet® MJP 2500/2500 Plus

Appendix

VisiJet® M2P-CST Crystal™	Projet® MJP 2500/2500 Plus
VisiJet® M2R-BK	Projet® MJP 2500/2500 Plus
VisiJet® M2R-CL	Projet® MJP 2500/2500 Plus
VisiJet® M2R-GRY	Projet® MJP 2500/2500 Plus
VisiJet® M2R-TN	Projet® MJP 2500/2500 Plus
VisiJet® M2R-WT (MJP)	Projet® MJP 2500/2500 Plus
VisiJet® M2S-HT250 (MJP)	Projet® MJP 2500/2500 Plus
VisiJet® M2S-HT90 (MJP)	Projet® MJP 2500/2500 Plus
VisiJet® M3 Black (MJP)	Projet® MJP 3600W Series
VisiJet® M3 CAST (MJP)	Projet® MJP 3600W Series
VisiJet® M3 Crystal (MJP)	Projet® MJP 3600W Series
VisiJet® M3 Navy (MJP)	Projet® MJP 3600W Series
VisiJet® M3 Procast (MJP)	Projet® MJP 3600W Series
VisiJet® M3 Proplast (MJP)	Projet® MJP 3600W Series
VisiJet® M3 Techplast (MJP)	Projet® MJP 3600W Series
VisiJet® M3-X (MJP)	Projet® MJP 3600W Series
VisiJet® Multi-material Composites (MJP)	Projet® MJP 5600
VisiJet® ProFlex (M2G-DUR) (MJP)	Projet® MJP 300W Plus, Projet® MJP 2500W Plus
VisiJet® Support Wax Remover (MJP)	Projet® MJP 300W Plus, Projet® MJP 2500W Plus, Projet® MJP 3600 Series, Projet® MJP 2500 IC
VisiJet® Wax Jewel Red (MJP)	Projet® MJP 300W Plus, Projet® MJP 2500W Plus
VisiJet® Wax Jewel Ruby (MJP)	Projet® MJP 300W Plus, Projet® MJP 2500W Plus
SELECTIVE LASER SINTERING	
Material	Certified Printers
DuraForm® FR-106	SLS 380
DuraForm® PA CF	SLS 380
DuraForm® PA11 Black	SLS 300, SLS 380
DuraForm® PA11 Natural	SLS 300, SLS 380
DuraForm® PA12 Black	SLS 300, SLS 380
DuraForm® PA12 Natural	SLS 300, SLS 380
DuraForm® PAx® Black	SLS 380
DuraForm® PAx® Natural	SLS 380
DuraForm® ProX® GF	SLS 380
DuraForm® ProX® HST Composite	SLS 380
DuraForm® ProX® PA	SLS 380
DuraForm® TPU 90A	SLS 380

Appendix

STEREOLITHOGRAPHY	
Material	Certified Printers
Accura® 25	ProJet® 6000 HD, ProJet® 7000 HD, ProX® 950, SLA 750, SLA 825 Dual
Accura® 55	ProJet® 6000 HD, ProJet® 7000 HD, ProX® 950
Accura® 60	ProX® 950, SLA 750, SLA 825 Dual
Accura® ABS Black	ProJet® 6000 HD, ProJet® 7000 HD, ProX® 950
Accura® ABS White	ProX® 950
Accura® AMX™ Rigid Black	ProJet® 6000 HD, ProJet® 7000 HD, SLA 750, SLA 825 Dual
Accura® AMX™ Durable Natural	ProJet® 6000 HD, ProJet® 7000 HD, ProX® 950, SLA 750, SLA 825 Dual
Accura® AMX™ High Temp 300	ProJet® 6000 HD, ProJet® 7000 HD, SLA 750
Accura® AMX™ Rigid Composite White	ProJet® 7000 HD, SLA 750, SLA 825 Dual
Accura® AMX™ Tough FR V0 Black	ProJet® 6000 HD, ProJet® 7000 HD, ProX® 950, SLA 750, SLA 825 Dual
Accura® Bluestone	SLA 750, SLA 825 Dual
Accura® CastPro™	ProX® 950, SLA 750, SLA 825 Dual
Accura® ClearVue™	ProJet® 6000 HD, ProJet® 7000 HD, ProX® 950, SLA 750, SLA 825 Dual
Accura® ClearVue™ Free	ProX® 950
Accura® Composite PIV	SLA 750, SLA 825 Dual
Accura® Fidelity™	ProJet® 7000 HD, ProX® 950, SLA 750
Accura® HPC	SLA 750
Accura® PEAK	ProX® 950, SLA 750, SLA 825 Dual
Accura® Phoenix	ProJet® 6000 HD, ProJet® 7000 HD, ProX® 950
Accura® PP White	ProX® 950
Accura® Sapphire	ProJet® 6000 HD, ProJet® 7000 HD
Accura® SL 5530	ProX® 950
Accura® Xtreme	ProJet® 6000 HD, ProJet® 7000 HD, ProX® 950, SLA 750, SLA 825 Dual
Accura® Xtreme Black	ProJet® 6000 HD, ProJet® 7000 HD, ProX® 950, SLA 750, SLA 825 Dual
Accura® Xtreme White 200	ProJet® 6000 HD, ProJet® 7000 HD, ProX® 950, SLA 750, SLA 825 Dual