QuickCast® Diamond™

3D Sprint ADD-ON

3D Build Style for Investment Casting Patterns

Investment Casting Patterns - Faster with Higher Yield and Lower Costs

3D Systems QuickCast® solution is a digital manufacturing method for producing investment casting patterns. Using advanced software, stereolithography (SLA) or projection-based SLA (PSLA) 3D printing technology and materials, the resulting lightweight, hollow casting patterns are strong enough to resist deformation during the shelling part of the investment casting process. Though durable, these printed patterns successfully collapse under their own expansion to allow for complete drainage and burn out with virtually no ash residue. The result is fast production of high-quality patterns that are easy to handle and integrate into investment casting workflows. With QuickCast patterns, you can deliver easier to cast, complex patterns in hours or days – and save thousands on traditional tooling costs.

HIGH PRECISION, HIGH FUNCTIONALITY

QuickCast Diamond is an available build style for 3D Systems' printers and 3D Sprint® additive manufacturing software. The associated software enhancements add functionality that both optimizes the preparation of CAD data for printing and streamlines the investment casting process. This solution enables foundries and high-volume casting customers to reliably deliver large, high precision investment casting at a fraction of the time and cost of traditional tooling – and without limitations on geometric complexity. Additionally, the digital workflow of 3D printing patterns increases design freedom. It also reduces iteration time, development time, and costs.

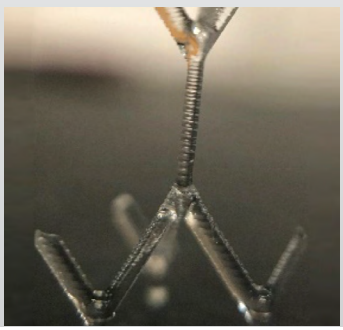
SMART SUPPORT STRUCTURES

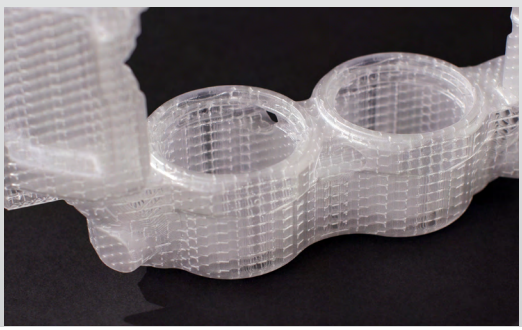
QuickCast Diamond is up to 30% lighter and has even more consistent strength independent of build orientation than previous QuickCast build styles. The internal diamond structure provides several benefits to the user of the investment casting process including:

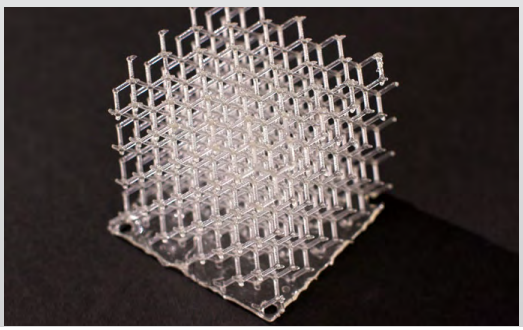
- Reduced internal mass resulting in cleaner burnout in the casting process and less material consumption lowering the overall costs
- Internal structures which adapt to the outer shell geometry and act as supports, resulting in higher yield, greater functional performance and more precise patterns

ADVANTAGES & BENEFITS

- Create complex patterns in hours – instead of days/weeks at a fraction of the cost of traditional tooling
- Deliver large yet lightweight patterns that remain strong and dimensionally stable – both in transit and in the investment casting process
- Consistent part strength across X, Y, Z geometries throughout casting

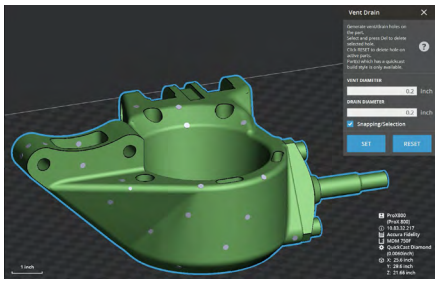


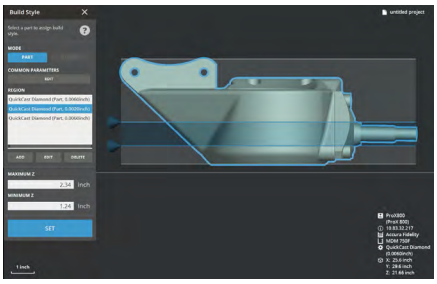




EASY PROCESSING

Out of the printer, parts are easier to handle. Thanks to improvements in the 3D Sprint software, users can easily adjust the part's shell thickness and add unlimited placement of vents and drains on any surface, making the part stable regardless of the build orientation. This reduces the need for manual drilling, reduces the risk of breakages and minimizes pattern drainage times.





COMPATIBLE PRINTERS

The QuickCast Diamond solution requires the 3D Sprint QuickCast Diamond Add-On and works natively with the following 3D Systems printers:

SLA

- SLA 750 Dual: Accura CastPro
- SLA 750: Accura CastPro
- ProX® 800: Accura CastPro

PSLA

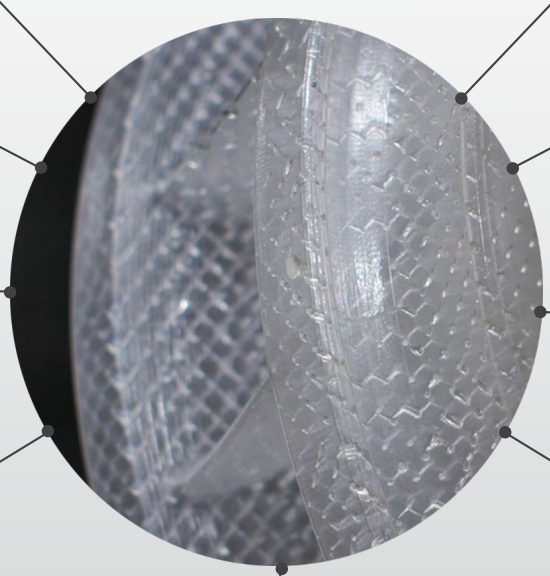
- PSLA 270: Figure 4 EGGSHELL-AMB 10

Antimony-free materials are ideal for Titanium alloys

Ultra-low ash content minimizes casting defect

Low viscosity for easier draining and venting

Adaptable internal geometry which acts as supports for higher build yield



High part strength out of the printer with consistent XYZ strength

Best-in-class moisture resistance with no trapped air bubbles

30% lighter internal diamond structure means lower material cost & faster burnout

Easy shell thickness adjustments with 3D Sprint QuickCast Diamond Add-On

Unlimited placement of vents and drains on surfaces – less manual hole drilling & fewer breakages

www.3dsystems.com **3DS-20501A** 04-25

Note: Not all products and materials are available in all countries – please consult your local sales representative for availability.

3D SYSTEMS®