

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. QuickCast allows manufacturers to replace injection molding tooling with fast, flexible, and cost-effective 3D printed patterns.



OPTIMIZED PROCESSES AND PRODUCTION

QuickCast Air 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 Air is the newest QuickCast innovation from 3D Systems that takes toolless casting to the next level. Building upon the capabilities of our QuickCast solutions, QuickCast Air brings even more production and cost efficiencies to the pattern creation process. For customers operating in high mix, low volume environments, this is not just a cost-savings decision but a strategic advantage. Lower material usage and faster print times further expands the crossover point where 3D printing is more economical injection molding tooling.

- Delivers dramatically lower upfront costs and unmatched flexibility for low to mid-volume investment casting programs
- Offers a streamlined, tooling-free workflow that minimizes cost variability and accelerates time-to-market
- Leverages the scalability of 3D printing to deliver consistent per-unit costs with no tooling capex

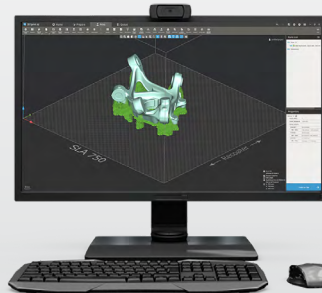
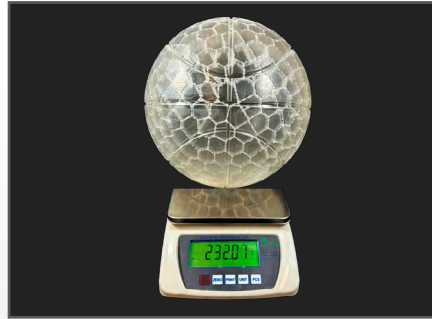
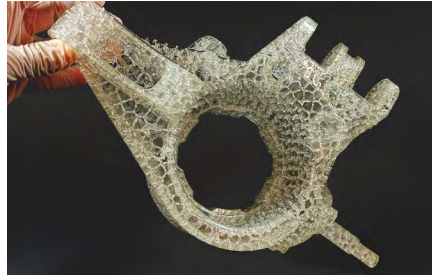
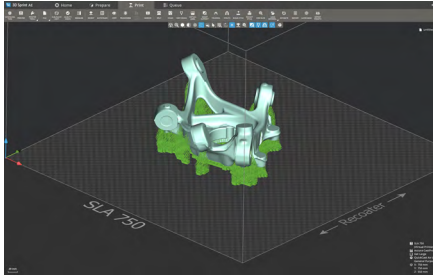
ADVANTAGES & BENEFITS

- Fundamentally shifts pattern production economics by eliminating tooling and maintains a total cost consistently lower than tooling and wax
- Achieve the lightest and most hollow patterns possible without compromising on strength
- Maximize efficiencies including:
 - Up to 50% less resin usage
 - Up to 20% faster build times
 - More efficient and complete draining for cleaner burnouts and less ash content



EASY PROCESSING

Out of the printer, patterns are easier to handle. Thanks to improvements in the 3D Sprint software, users can now easily adjust the pattern's shell thickness and add unlimited placement of vents and drains on any surface, making the pattern 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 Air solution requires the 3D Sprint QuickCast Air 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



www.3dsystems.com

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

Warranty/Disclaimer: The performance characteristics of these products may vary according to product application, operating conditions, or with end use. 3D Systems makes no warranties of any type, express or implied, including, but not limited to, the warranties of merchantability or fitness for a particular use.

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