

Datum PhD is designed for both etching and laser cut SMT stencils. Its microstructure and low residual stress ensure maximum performance.

No.1 worldwide

Our unique approach to metallurgy, from alloy selection to foil manufacturing and frame mounting, enables us to provide stencil materials that help control the printing process and reduce SMT defects:

- The industry's tightest thickness and flatness tolerances guarantee predictable area ratios and transfer efficiencies across the entire print area
- Stress-relieved foils resist heat distortion from laser cutting, offering superior flatness to optimise gasketing and registration
- Proprietary rolling and annealing processes deliver consistent materials for dependable and repeatable performance

Product Selector Guide

| | PhD | FG | Tension |
|---|-----|----|---------|
| Miniaturised or high-density assembly | | • | • |
| Area ratios <0.66 | | • | • |
| General SMT, lead pitches \geq 0.5mm, leadless pitches \geq 1.0mm | • | | • |
| Stepped stencil for μ BGA, CSP, QFN, BTC | | • | • |
| Uniform foil thickness \geq 150 μ m | • | | • |
| Powder Size Type: 4, 5, 6 | | • | • |
| Powder Size Type: 3 | • | • | • |

Specifications

- **Gauges:** 0.02 to 0.500
- **Sizes:** Widths up to 690mm
- **Availability:** Worldwide

Quality commitment

- Every Datum team member is committed to providing the highest quality products and services
- Datum is ISO-9001 certified
- Specialised manufacturing processes are continuously monitored and statistically controlled
- All products are inspected/verified prior to shipment

Ideal for standard stencil steps

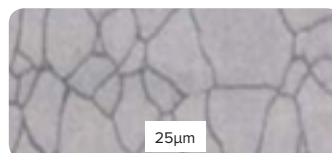
- **Top side:** connectors, shields, larger SMT components, see our [Product Selector Guide](#) above
- **Bottom side:** cavity relief for labels/topographical features

Repeatability

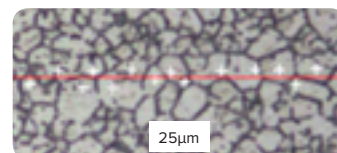
Datum PhD is world's first SS alloy developed specifically for laser-cut SMT stencils. Harder and more durable than standard SS, Datum PhD provides longer life, especially in demanding production processes.

Repeatability is the key to optimising print performance:

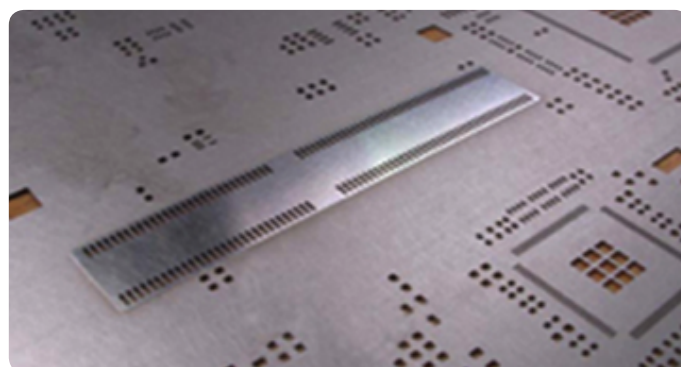
- Thickness tolerance of $\pm 2\%$ is the tightest in the industry, with $> 6\sigma$ repeatability
- Controlled surface roughness of $< 0.15\mu$ m maintains paste rolling characteristics from stencil to stencil
- Uniform grain structure and low residual stress ensure consistent response to tensioning, chemical etching, laser cutting and printing processes



Standard SS Microstructure
Grain Size: 15-30 μ m



Datum PhD Microstructure
Grain Size: 7-11 μ m



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Datum

The data says yes