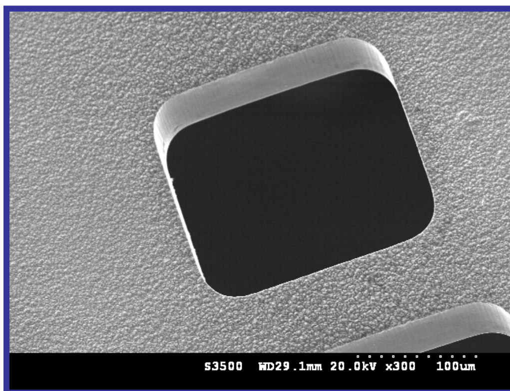
MicroStencil

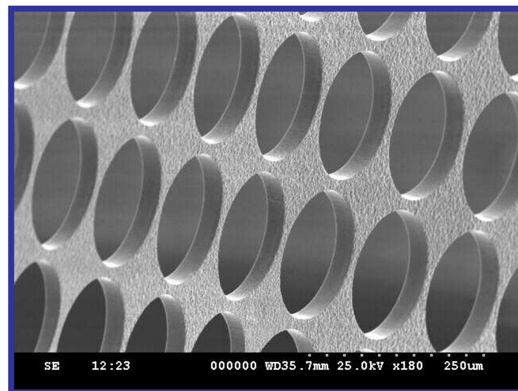
Precision Electroformed metal foils for fine pitch printing

High Precision Microengineered Stencils

A pioneering stencil solution to meet the challenges of next generation printing…

The MicroStencil fabrication process represents a breakthrough in the critical field of stencil technologies, delivering exceptional and repeatable precision for a diverse range of demanding applications. Founded on a novel MEMS-based manufacturing process, high accuracy microengineered stencils are capable of achieving the ultra-fine geometries now standard in many of today's interconnection technologies. This stencil technology overcomes the limitations of conventional stencil manufacturing technologies to meet every ultra-fine pitch printing requirement.





Electron microscope images of stencil apertures

The products superior print performance means that the technology is ideally suited to a range of demanding manufacturing applications including:

- printing solder paste
- flux deposition
- ball placement stencils
- printing conductive and non-conductive adhesives

These stencils are commonly used for creating the interconnects in wafer level and flip chip packaging, BGAs, direct chip attach and other fine pitch components such as 01005.

Facilitating apertures as small as 25 µm on 50 µm pitch, microengineered stencils offer MicroStencil customers exceptionally smooth sidewalls for highly efficient paste transfer. As a result the stencils yield excellent print definition and deposit coplanarity. In addition the product has a major advantage that works extremely effectively with underside stencil cleaning systems. Our stencils can smoothly fit into most screen printing machines worldwide.

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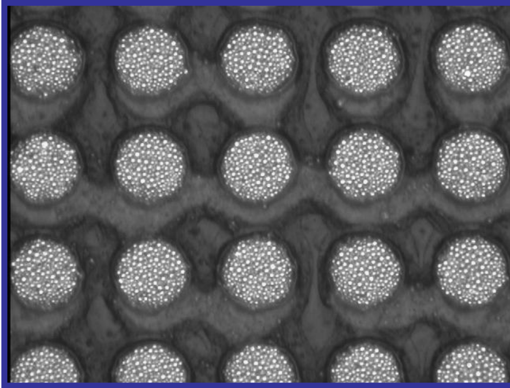
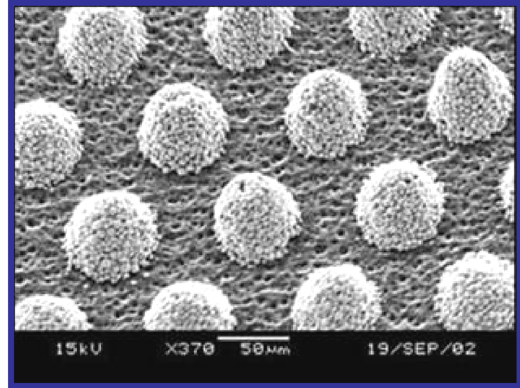


150 µm pitch prints on flip chip substrate



90 µm pitch prints using type-7 solder paste

Product Specifications

- Available thickness → 20µm to 230 µm at 0.5 µm increments
- Aperture capability → 25µm
- Aperture size tolerance:
    - < 3 µm for 50 µm thick stencils
    - 4 µm for 50 – 100 µm thick stencils
    - 6 µm for 100 – 200 µm thick stencils
    - 8 µm for 200 – 230 µm thick stencils
- Excellent thickness uniformity across design area +/- 5%
- Positional accuracy → 0.2 µm/mm
- Pitch → 50µm

Product Benefits

- Ultra-smooth sidewalls
- High yield due to exceptional paste release characteristics
- Smaller web spacing enables larger deposit volume over single footprint
- Low internal stress and high hardness prevents stencil deformation and enables a
- long stencil lifetime
- Minimal lip / gasket around apertures to avoid paste bleed out
- Manufactured to fit most screen printing platforms worldwide

Ordering / Enquires

- All standard stencil orders are dispatched within 5 working days
- Our precision microengineered electroformed stencils are manufactured and sold under license in North America and Asia by DEK International. For stencil enquires in Europe please contact sales@microstencil.com. For stencil requests in North America and Asia please contact the relevent sales person within your terretory. Contact details can be found on www.dek.com.

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