

Winner
Energy@23 Award

Rapid Solidification Process Tooling™

Idaho National Engineering and Environmental Laboratory



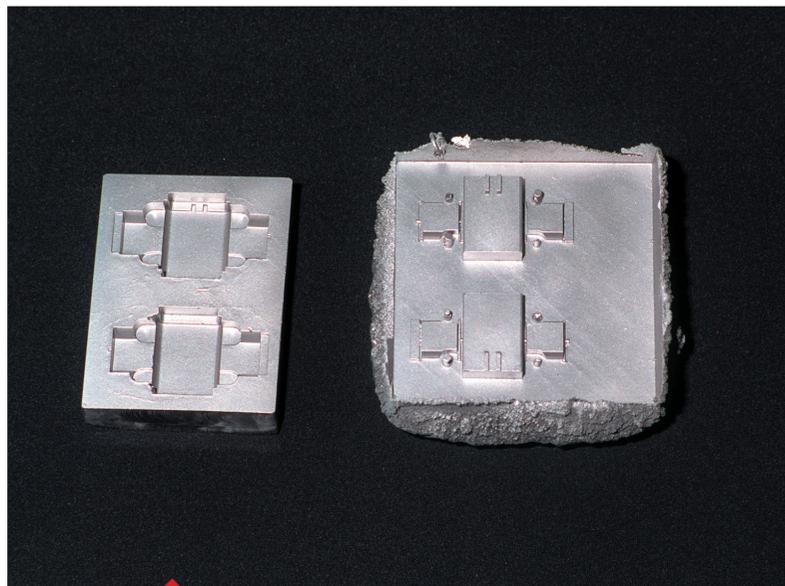
This metal-coated party balloon is an extreme example of rapid solidification.

The INEEL's Rapid Solidification Process (RSP) Tooling™ is a spray deposition technology tailored for the production of molds, dies and related tooling. Using a high-velocity jet of inert gas, the process sprays molten metal onto patterns. Layers of molten metal are built up, creating a high quality die within minutes.

- Reduces cost and turn-around time for production of tooling by a factor of 5 to 10
- RSP Tooling™ dies have outlasted commercial production dies by 20%
- Versatile enough to use with almost any metal alloy or pattern
- The spray process faithfully reproduces the minutest detail of the pattern, including fingerprints
- Dies can be artificially aged as well as conventionally heat treated
- Coupled with computer-assisted design, RSP Tooling™ promises fast prototype and production tooling design and fabrication

RSP Tooling™ has been developed by INEEL researchers Kevin McHugh and Bruce Wickham. The technology has been licensed to Global Metals Technologies, Inc., to commercialize the process for rapid prototyping and production.

The process uses a high-velocity jet of inert gas to spray molten metal on a tooling pattern, producing the die within minutes.



The versatile RSP Tooling™ can produce dies using a variety of metals and almost any die pattern.

