RP Tempering™ Technology News

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Solid Freeform Additive Technology & Patented Engineering Technique

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Under-Hood Application - Tempered Parts

Mack Corporation used RP Tempering™ Coatings on the inside and outside of the pictured coolant reservoir. The container was coated with 2 coats of Proto-Reinforcement© Infiltrate Coating and then 2 coats of RP Tempering™ Compound (clear) on the inside and 4 coats of Proto-Plasma Spray (clear) on the outside. This SLA reservoir worked on an engine during a physical road test for 2 weeks and passed all the test specifications and criteria.

Coolant Reservoir

FDM ABS - Air Filtration Application

This aftermarket air filtration system, by Diamond Corporation, is offered for small, 4 cylinder cars. The initial test specimens were made out of ABS FDM parts. The housings and connecting pipes where all made from FDM material. The challenge was to seal all porosity and to strengthen snap features in the "Z" direction. After repeated life cycle and fatigue tests, these test specimens passed time after time. These tempered parts were exposed to the following: vibration, impact, salt spray, torsion, air, vacuum, high temperatures over 170° F, and cold temperatures of -20° F.

The RP Tempering™ process used on this FDM application was 2 coats of Proto-Reinforcement© Infiltrate Coating and 3 coats of Hi-Temp Protoplass© Coating.

High Pressure Spray Gun

The pictured spray gun, produced by Cargo Company, was made out of SLA and tempered using our Hybrid-Temp Applications. Hybrid Tempering uses 1 coat of Proto-Reinforcement©, 1 coat of RP Tempering™ Compound and 3 coats of Proto-Plasma™ Coating. This application offers users maximum strength, durability and sealing.

This spray gun used a high pressure air connection and worked perfectly over several uses before finally leaking air around the air connection piece. This allow the lab technicians complete testing of the new spray nozzle tip which produced multiple patterns within a new housing. They were able to test it before a real test specimen is made. This saved the company 7 to 10 thousand dollars in tooling cost and 2 to 3 weeks of time.

Tempered SLA Thermos Container

This new design was made out of SLA materials and tempered for actual use. Twenty sets, of this particular design, were made for a trade show in Los Angeles, California for Thermos. Actual hot and cold water were filled into the containers during the show to demonstrate the liquids would remain cold or hot. Several times during the show the water was poured into the cup to demonstrate the anti-spill opening idea.

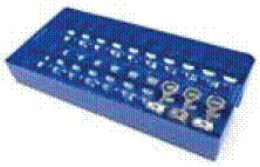
During the show the tempered SLA worked perfectly and demonstrated the new anti-spill design. These marketing specimens did not fracture or leak. The tempering technique used was 2 coats of Proto-Reinforcement© Infiltrate Coating and 3 coats of Proto-Plasma© Spray.

In This Issue

Packaging Production Part Handling Tray - Tempered FDM

United Engineering and Manufacturing, Incorporated is a contract medical assembly company in Indianapolis, Indiana. Trays like this one are used to hold parts during the assembly process. FDM materials are commonly used for these applications. RP Tempering™ materials and processes applied to these trays are used to strengthen the trays, to extend the life, and for its anti-abrasive properties.

Currently, United has over 100 production FDM trays, with RP Tempering™ applied, in use. RP Tempering™ and the FDM processes have saved the company thousands of dollars and time over the past year alone.



3DSUG Conference 2010

The 22nd Annual 3DSUG Users Group Conference will be held at the Buffalo Thunder Hilton in Santa Fe, New Mexico, April 25-29, 2010. Save the date and plan to attend.

3DSUG was established to encourage and coordinate technical information exchange between owners and operators of 3D Systems equipment and provide feedback to 3D Systems on hardware and software modifications.

The 3DSUG will meet annually to provide a forum for presentation of papers relating to the dissemination of processes and new technologies related to the operation of 3D Systems equipment and the secondary or final application of parts or/and tools made from these systems.

RAPID 2010 Conference and Exposition

RAPID 2010 Conference & Exposition
Disneyland Hotel
Anaheim CA USA
May 18, 2010 to May 20, 2010

RAPID is North America's Definitive Additive Manufacturing Event and is co-located with the 3D IMAGING Conference and Tradeshow. It attracts innovative leaders that are advancing manufacturing processes and providing tools to bring product to market faster. The combination of informative technical sessions, workshops and the industry's premier tradeshow brings buyers, sellers and end-users of design, prototyping, tooling, direct manufacturing and 3D imaging technologies together in an environment that facilitates networking and business.

This year's event, held in California for the first time, exposes rapid and 3D imaging technologies to new users and industries. It offers technical sessions addressing several industries and applications including:

- Aerospace & Defense
- Entertainment (Animation)
- Medical/Dental
- Sports & Recreational Equipment
- Casting
- Motor Vehicles
- Rapid Manufacturing
- 3D Imaging

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