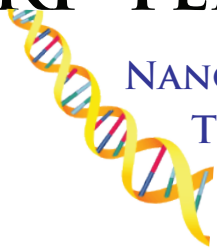


RP TEMPERING™ TECHNOLOGY NEWS



NANO-COMPOSITE
TECHNOLOGY

SOLID FREEFORM ADDITIVE TECHNOLOGY &
PATENTED ENGINEERING TECHNIQUE

VOLUME 32

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Merry Christmas & Happy New Year!

From all your friends at
Par3 Technology, Inc.
and

RP Tempering™ Technologies

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Medical Company Uses SLA in Environmental Life Cycle Testing

RP Tempering's Hi-Temp Protoplass© is also Low-Temp Protoplass© and will protect parts down to 20° F below zero. Only a very thin layer of Hi-Temp Protoplass© needs to be applied to achieve these results. In addition, our Insultemp™ product can handle even more extreme temperatures and environments.

Time Line and Cost Reduction

DermaCare® Products Company, in New Albany, Indiana is developing a small electric motor pump for a medical product. This product is still under development, so a picture is not available. However, you can imagine a small electric motor assembly but on steroids and completely enclosed. This product could be exposed to a wide range of environmental conditions during normal use.

In this case, DermaCare® engineers will be able to use tempered SLA parts instead of molded plastic parts for their initial life cycle testing. This resulted in a shortened develop-

ment cycle while reducing costs. The tempered SLA parts worked so well they successfully passed all the production part testing criteria. The information documented during the testing was invaluable to the design engineering team. This allowed the engineers to fine tune the design so the production tooling was only built once, without any changes.

Testing Criteria

DermaCare® did not want to build injection molds until they did some actual product testing on this novel idea. A design like this has never been tried before so it presents multiple challenges. This product assembly will be placed in an environmental chamber for 10,000 hours, running continuously, and cannot fail. It will experience extreme vibration and exposure to hostile environments that include:

- Cold Temperature down to 20° F
- High Temperature up to 180° F
- Moisture
- Humidity
- Vibration

This, tight tolerance, assembly is a medical product, so there is a need for physical testing to compare the results to their

analysis models and prove the design process capability.



Proto-Reinforcement® Infiltrate Coating on left and Hi-Temp Protoplass® Coating on right

Tempering Application

DermaCare® did a 20 piece build using tempered SLA parts for the housing assembly that holds the bearing and shaft and aligns the windings. The SLA parts were coated all over with 1 coat of Proto-Reinforcement® Infiltrate first. Next they applied 3 coats of Hi-Temp Protoplass© on the outside of the part and 2 coats of Hi-Temp Protoplass© on the inside of the parts.

PAR3 Technology is Your Engineering Solutions Provider

PAR3 Technology offers a full scope of services that include design, analysis, manufacturing, testing and research planning. We can be your engineering department and start projects from concept generation and take them all the way through to manufacturing. Or we can provide support to your existing engineering team or off-load excess work and we will help you meet your deadlines. PAR3 Technology has a system of tools that are used within an organization to quickly generate ideas and we use analysis tools to

reduce prototypes and time to market.

PAR3 Technology specializes in servicing clients who have a need for high level design and analysis solutions. We pride ourselves on our ability to find practical solutions for complex problems. Our staff has a very diverse background of disciplines and practical experiences. We use these backgrounds and experiences to develop a comprehensive solution to each client's needs instead of just focusing on one problem area.

In order to provide a complete solution, our first intention is to develop a clear understanding of your products and pro-

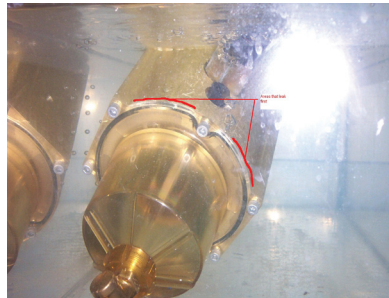
cesses and the environment that you operate within. We want to know the goals and expectations of your company as a whole before we focus on each project in which we are involved. Our desire is to become not only your technical experts, but your working partners. We strive to earn your complete trust and build the confidence that you can rely on us. Our aim is to provide cost effective, practical solutions in a timely manner that are well suited for you and your company.

We would appreciate the opportunity to become your design and analysis solutions provider!

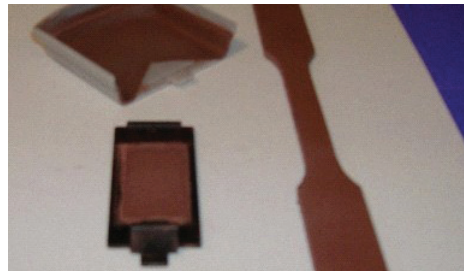
Some of RP Tempering's Technologies and Capabilities



Mechanical Property Enhancements:
Impact Strength
3 Point Flex Strength
Torsion Durability



Chemical & Environmental Resistance:
Seals Porosity
Resistance to fuel, oil, water & more



Electrical Property Enhancements:
EMI & RFI Shielding
RF Shielding
Insulative Coating
Conductive Coatings



Thermal Property Enhancements:
Fire Retardant UL94
Heat Deflection
Heat Resistance

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