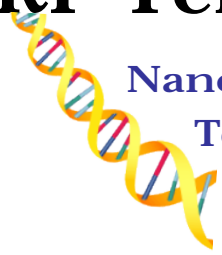


RP Tempering™ Technology News



Nano-Composite
Technology

Volume 9

Solid Freeform Additive Technology &
Patent Pending Engineering Technique

November 2006

Fire Retardant Tempering Goals

PAR3 Technology is continuing to develop additives that will provide increased thermal properties for SFF materials and applications. After our initial introduction of our Fire Retardant Hi-Temp Protoglass® coating and engineered layering technique we have been contacted by several companies with inquiries about the fire retardant RP Tempering™ process. The questions being asked are:

1] What other FR specification can be achieved besides the MVSS302 Automotive vertical burn test? We have only completed the automotive vertical burn test to date. This test was completed first because we had a customer that had a need in this application.

2] Have you tested to ASTM or UL FR specifications yet? We are preparing to test for these standards representing 9 different SFF materials and 4 different SFF manufacturing systems. Our goal is to pass the UL94 Specification by January 2007 on

one or more of these materials.

3] What SFF material have we tested? The following materials have been tested: LS GF Nylon 11/12, LS PA, LS Elastomers, SL Bluestone and FDM ABS/PC.

4] How do you apply the coating and layering process? This is an engineered layering process with thickness capability of +/- .001". This process uses two different coatings to achieve the substrate thermal barrier and char zone.

5] Will you provide samples for testing? Yes, please contact us for details.

6] Will you consult individual companies on specification requirements? Yes, please contact us for details.

7] Can you provide MSDS sheets? Only RP Tempering™ Licensees can obtain a copy of the MSDS sheets.

Also, see the article later on in this newsletter for more information on designing the fire retardant zone.

Temperman Initiative Focused on EuroMold

Protodag Technology will be demonstrating all the RP Tempering™ Technologies at the 2006 EuroMold at the Frankfurt am Main, Germany, Exhibition Centre. Baran Dag of Protodag Technology will be attending the show and demonstrating part tempering from a variety of practical applications. Protodag Technology will temper parts brought to EuroMold for FREE at the show. Alpha Products another Master

Distributor for the RP Tempering™ Technologies will also be attending along with other RP Tempering™ licensed bureaus.

There will be 2 RP Tempering™ training seminars. The first will be on 28th of November, the day before EuroMold starts and the second will be December 3rd. If anyone is interested in attending please contact Baran Dag at +90 533 614 45 75 or baran.dag@3ileri.com for free registration.

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TEMPERMAN
INITIATIVE

Laser Reproductions - Exclusive Provider

Laser Reproductions, a national provider of rapid prototypes, manufacturing, and product development services, has secured the exclusive right to provide the RP Tempering™ technology throughout the state of Ohio and the Detroit area.

The contract was awarded

by PAR3 Technology and will allow Laser Reproductions to coat prototype parts with the innovative engineering compound.

RP Tempering™ is an additive/subtractive technology and engineering technique that creates a coating for industrial or commercial prototypes. The technology uses a multi-wall Nano-carbon tube to ensure penetra-

tion and lasting results. The coating is stronger than most prototype coatings and increases heat deÆection.

Laser Reproductions ranks among the top-ÿve percent of rapid-prototyping service bureaus in North America and is one of eight RP Tempering™ service bureaus in the United States.

3DSUG Conference

Please bring SFF parts to the conference so they can be tempered. The parts can be made of any material by any apparatus. We will apply any of the RP Tempering™ technologies or techniques before the end of the conference. Please contact PAR3 Technology before you build the parts so you can be advised on the best tempering technique to use.



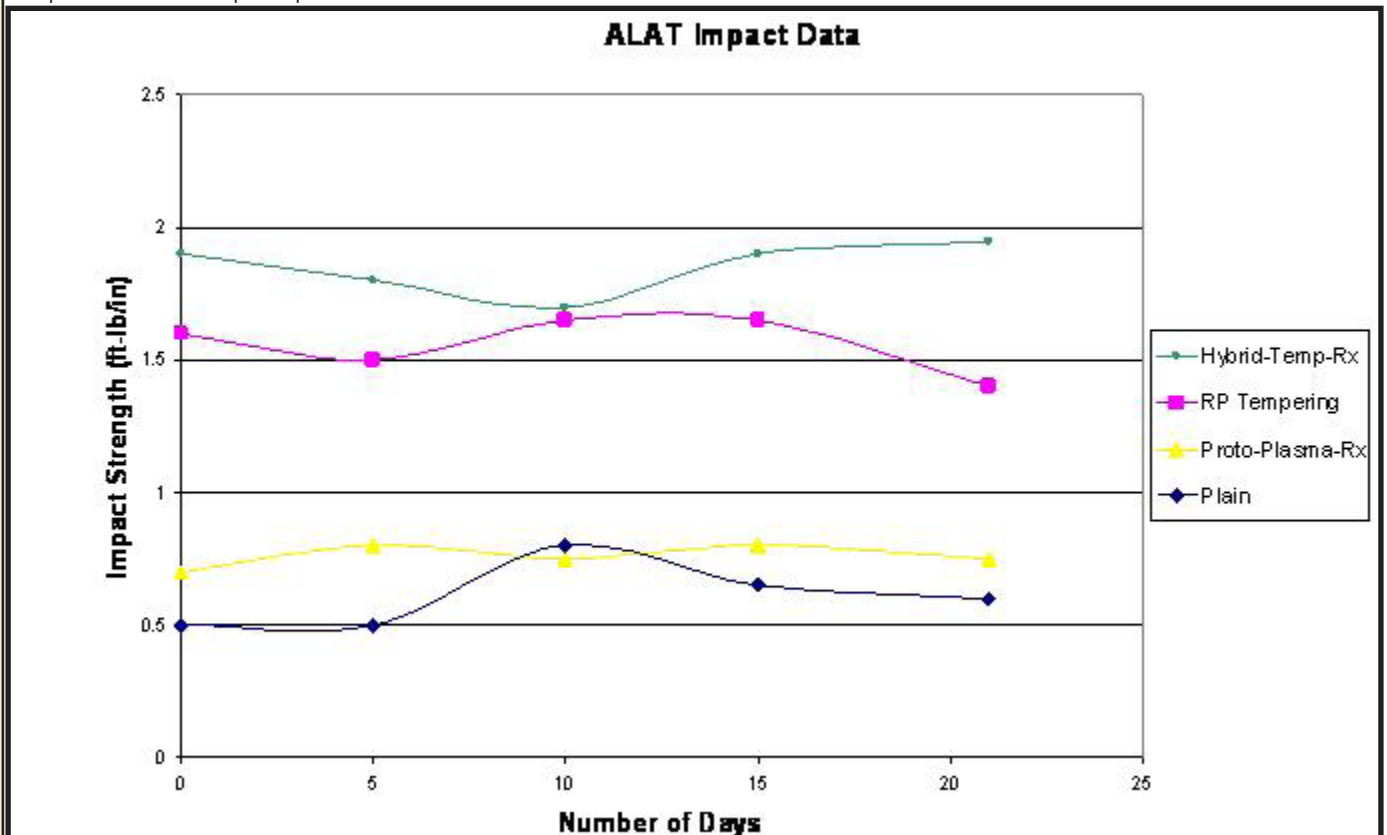
Join Us in Daytona Beach, Florida for the 3DSUG Conference, March 18-22. RP Tempering will have a Guest Suite. Please Visit Us.

Data From Accelerated Life Aging Tests 2006

PAR3 Technology and TCST completed Accelerated Life Aging Tests (ALAT) in August 2006. This was a 21 day heat and humidity test comparing tempered and non-tempered parts

which simulated 1 year of high heat and humidity. Samples of the parts were pulled at 5, 10, 15, and 21 days for testing. At each sampling, tests were performed for Tensile, Ultimate Stress, Elongation, and Impact. The tempered

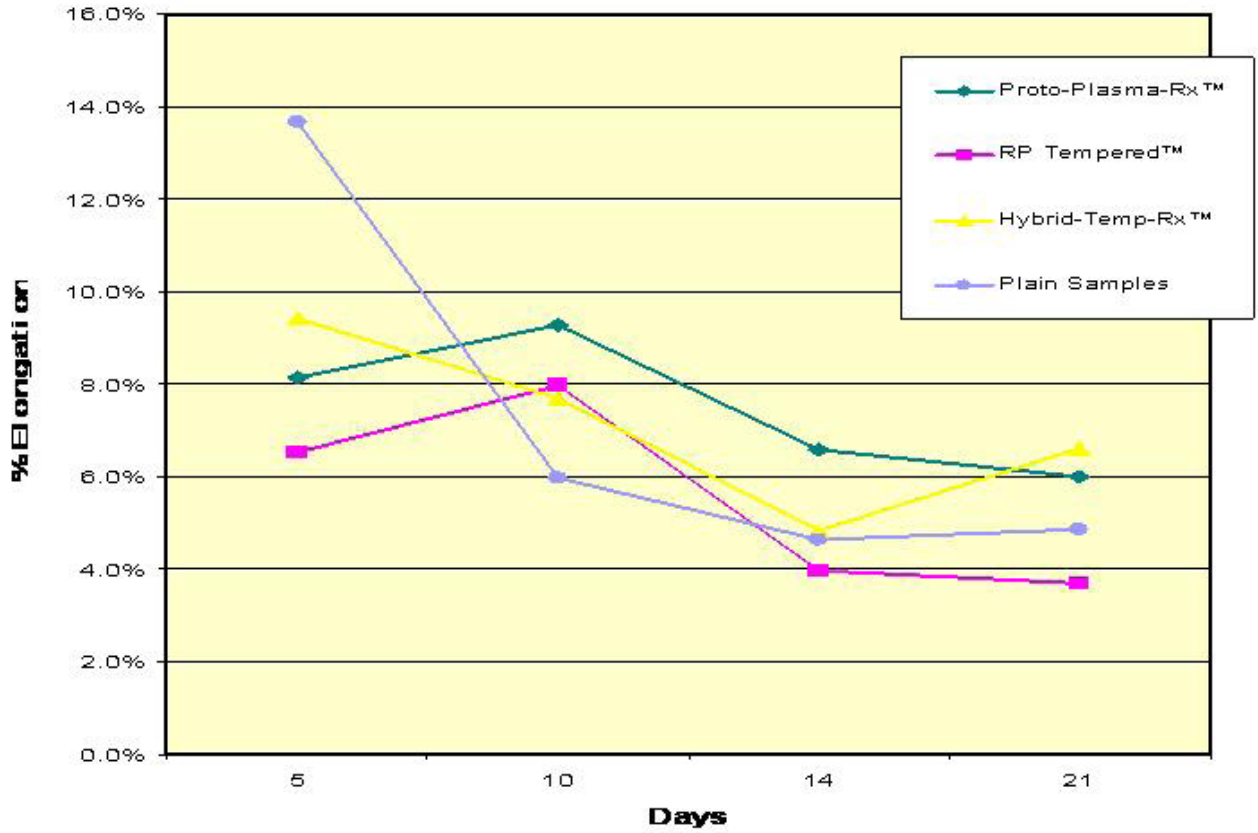
parts resisted the elements of the environmental chamber and performed better on all the tests. The following charts with commentary, will summarize the results.



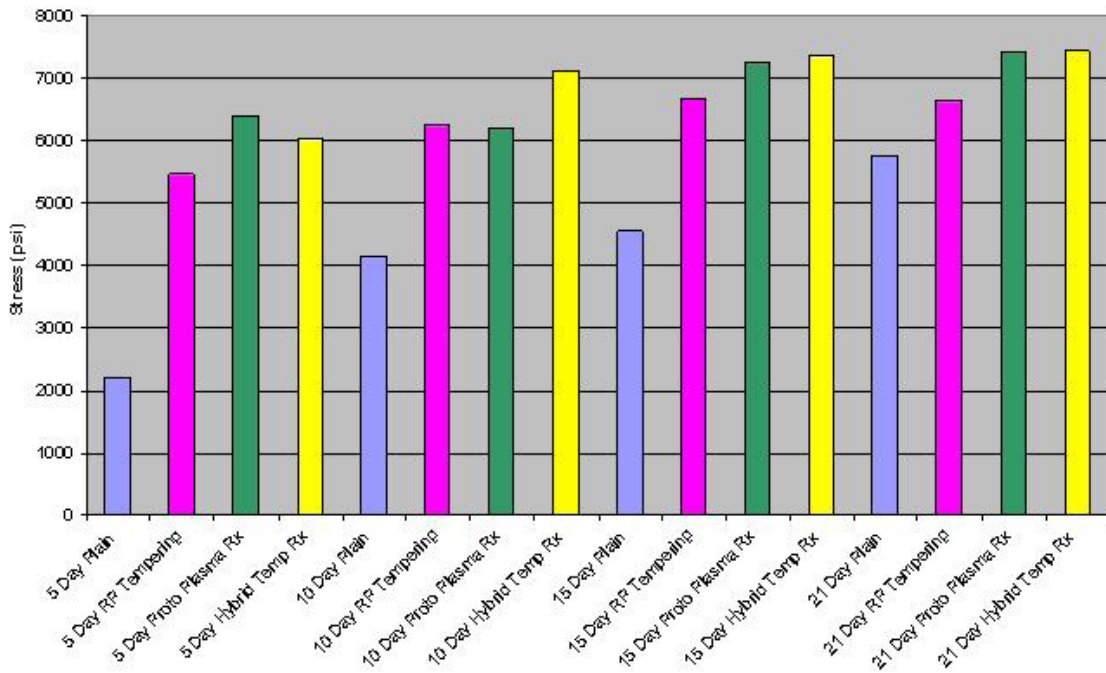
Impact Strength remains relatively stable throughout the ALAT, with Hybrid-Temp-Rx and RP Tempering™ providing the most resistance to impact. The Hybrid-Temp-Rx and RP Tempered™ parts had over 2 times more strength than the Plain parts.

ALAT Test Data - Continued

Elongation Accelerated Life Tests



ALAT Ultimate Stress



As the Plain material is aging it becomes more brittle because Elongation dramatically decreases and the Tensile is increasing. The material is sacrificing Elongation properties for Tensile. The Proto-Plasma-Rx, RP Tempered and Hybrid-Temp-Rx all maintain both their Elongation and Tensile strength during the life of the test much better than the Plain samples.

