



*Regulator from AEF Design*

November 2005

### **RENPIM<sup>®</sup> MATERIALS USED FOR CRITICAL PROTOTYPE COMPONENTS ON NEW OXYGEN REGULATOR**

The production of small, often highly complex components for a functional prototype model can be one of the most difficult steps during the development of a new product. In France, AEF Design has developed a special 'a la carte' prototype design and production service for customers where the focus is on the production of a 'perfect functional prototype'.

Critical to the successful production of such high calibre prototypes is the choice of materials used, and AEF Design use a range of RenPIM<sup>®</sup> Vacuum Grade rapid setting polyurethanes from Huntsman Advanced Materials.

With the development of safety equipment, highly accurate prototyping is especially important. AEF Design recently used RenPIM materials for the prototype model of a regulator on an oxygen re-breather system for Fenzy, who make breathing apparatus for use by the emergency services and divers.

“Using RenPIM 2185 and RenPIM 2186 enabled us to meet the very specific criteria this client had for the prototype regulator – good part strength and elasticity and also excellent resistance to impact and temperature,” said Yohan Coulomb, Chief Prototypist for Moulding, at AEF Design. “The finished part also had to be completely air tight and water tight when assembled.”

All the RenPIM materials used by AEF Design are cast by vacuum rotational resin transfer moulding or by direct injection. Where possible, AEF Design also cast parts in the correct colour to avoid painting or any additional finishing. With the regulator, RenPIM 2121/2122 were used to produce the flexible, yellow-coloured components required.

Once assembled, the prototype regulator was subjected, by Fenzy engineers to a range of impact tests and also checked for seal integrity to ensure it was air tight. “All tests were successfully completed and the results conclusive,” said Yohan Coulomb. “The regulator prototype was then used for product presentations by Fenzy.”

RenPIM Vacuum Grade is a fast curing two-component polyurethane casting system that can simulate the appearance and physical properties of a wide range of thermoplastics used in rapid prototyping and short series production including ABS, HDPE, PP and rubber. They can be used for the rapid production of high quality functional prototypes for form, fit and function testing. Parts are produced in minutes without the use of high cost steel moulds. They are highly accurate and dimensionally stable and able to reproduce fine details and surface textures.

For further information on RenPIM and Huntsman Advanced Materials, go to [www.huntsman.com](http://www.huntsman.com) and click on “Advanced Materials”.

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## **Editors Note**

Huntsman Advanced Materials is a leading global manufacturer and marketer of advanced epoxy resins, adhesives, coating systems, electrical insulating materials, printed circuit board technology, tooling materials and structural composites. We service end use markets that include the aerospace, automotive, telecommunications, electrical and electronics, recreation, and appliance industries.

Originally known for pioneering innovations in packaging, and later, rapid and integrated growth in petrochemicals, Huntsman-held companies today have more than 11,300 employees, operations in 22 countries and annual revenues of approximately \$11.5 billion.

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### For press information only please contact:

Gill Houghton/Kate Hogg  
Tregartha Dinnie Ltd.  
Chancery House  
199 Silbury Boulevard  
Central Milton Keynes  
MK9 1JL England  
tel +44 1908 306 500 (number not to be published)  
fax +44 1908 306 505 (number not to be published)  
Email: [press@tregartha-dinnie.co.uk](mailto:press@tregartha-dinnie.co.uk)

### Sales enquiries should be directed by mail or e-mail to:

Urs Waldvogel at the Product Support Help Desk  
Huntsman Advanced Materials (Switzerland) GmbH  
CH 4057  
Basel  
Switzerland  
Phone : 00 41 61 96 63 87 5  
Email: [advanced\\_materials@huntsman.com](mailto:advanced_materials@huntsman.com) or [urs\\_waldvogel@huntsman.com](mailto:urs_waldvogel@huntsman.com)