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B R A J B I N A N I G R O U P

news release

Advanced Madshus Cross Country skis made with 3B's HiPer-tex™ high performance fibre races to the podium at the Ski World Cup

Battice, Belgium – March 12, 2013 – Following research and development lasting two-years, 3B's HiPer-tex™ high performance fibre allows for the lightest, strongest and fastest skis Madshus has ever produced.

Fibreglass is not the only component in a ski however it does play a very critical role for the ski's overall performance, a factor Norwegian-based Madshus was keen to enhance in its ski manufacturing.

Bjørn Ivar Austrem, R&D Manager at Madshus AS commented, "Flexing properties in cross country skis is crucial because of both compression on the topside and tension on the underside while skiing. Previous attempts to reduce fibreglass content and therefore the ski's weight resulted in maintaining tension but with an undesirable adverse effect on compression due to inadequate interlaminar shear strength."

Bjørn Ivar added, "3B had a full understanding of our need to meet demanding specifications and due to the unique properties of HiPer-tex™, Madshus was finally able to reduce the fibre content by up to 15 percent without compromising tension on the underside of the ski. HiPer-tex™ glass fibre has brought great advantages in both strength and weight savings and by cutting the amount of fibre content Madshus has also been able to lower the matrix to wet out the epoxy compatible fibre, thereby contributing to weight reduction".

HiPer-tex™ high performance fibre provides unique properties such as high strength, high modulus and high elongation at break which combined offer the essential interlaminar shear strength which not only improves compression it sustains and enhances tension on the underside of the ski. In addition, 3B's recently developed epoxy specific sizing is fully compatible with Madshus' manufacturing processes, which now allows improvements across the company's whole range of advanced skis.

"The use of HiPer-tex™ fibre in the manufacturing process has allowed for a weight reduction of up to 10 percent, which is extremely significant for sports equipment, while at the same time

creating stronger, lighter skis thus allowing Madshus to consolidate its leadership position in cross-country ski design and manufacture, ” said Eric Debondue, Business Development Leader at 3B. “In addition, HiPer-tex™ fibre glass is fully compatible with the existing manufacturing processes eliminating costly production investments at the ski factory.”

Austrem concludes: “High quality products demand high quality value-added components such as HiPer-tex™ which come at a cost, but which proves to be economical due to the reduced amount of fibre and epoxy resin required for its integration into our advanced skis for which consumer demand is constantly growing. But more importantly it allows us to design and manufacture superior quality equipment for the best skiiers in the world among them Paal Golberg, a rising star in the Norwegian national team who excelled and raced to a place on the podium at the recent Ski World Cup.”

Madshus is a technology driven Norwegian cross country ski manufacturer boasting the world’s oldest ski factory and through great innovations and a strong product line stays ahead of competition. 3B’s HiPer-tex™ fibre is also manufactured in Norway at the company’s plant in Birkeland, thereby contributing to Madshus’ *‘Made in Norway’* skis.

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Photo caption: 3B’s HiPer-tex™ high performance fibre allows for the lightest, strongest and fastest skis Madshus has ever produced



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Photo caption: Paal Golberg, rising star in the Norwegian national team and third in the recent World Cup Race held in Liberec, in the Czech Republic seen holding his new Madshus skis.

About 3B-the fibreglass company

3B-the fibreglass company is a leading developer and supplier of fibreglass products and technologies for the reinforcement of thermoplastic and thermoset polymers. This dynamic and entrepreneurial company has three state-of-the-art fibreglass manufacturing facilities in Battice (Belgium), Birkeland (Norway) and Goa (India) as well as a dedicated R&D Centre located in the heart of Europe. 3B's ambition is to be the thermoplastic reinforcement global leader, the wind energy solution provider and the business development partner for innovative composite applications. This growth agenda builds upon three strategic drivers that are sustainability, technological innovation and a global presence to most effectively service our international customers.

The company is the only major fibreglass producer operating fully 100 percent boron-free glass fibre manufacturing platforms with ECR glass formulations delivering significantly improved corrosion resistance, improved stiffness, higher temperature resistance and longer service life. The company operates two unique eco-responsible and high performance glass technologies, HiPer-tex™ and Advantex® glass in its European plants. These two well established brands combine durability with eco-responsibility and versatility, making them the materials of choice for a wide range of industries. With a sound foundation of unique assets, 3B is committed to designing reliable and durable fibreglass solutions available globally.

For more information visit our new website: www.3b-fibreglass.com.

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www.3B-fibreglass.com

3B Head Office

Route de Maestricht
B-4651 Battice, Belgium
phone +32 2 402 2000
fax +32 2 402 2002

General info: 3B.info@3b-fibreglass.com

3B Public Relations Contact

Laurence Ponchaut
Laurence.ponchaut@3b-fibreglass.com
phone +32 487 425190

Media Relations Contact

Alan Flower
alan.flower@indmr.com
phone: +32 474 117091
