

New snowsports helmet relies on DuPont™ Zytel® for strength, durability and comfort



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Photo: DuPont

The four main protective components of a stylish new safety helmet, made for snowsports by DXL-Protection, are made of glass-reinforced DuPont™ Zytel® 80G33 nylon, chosen for its combination of superior mechanical properties and excellent processability. The helmet was designed by the Pulsium studio, with guidance from DuPont on moulding and other technical aspects.

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Munich, February 2007. The four main protective components of a stylish new safety helmet for snowsports are made of glass-reinforced DuPont™ Zytel® 80G33 nylon, chosen for its combination of superior mechanical properties and excellent processability.

Made by DXL-Protection, part of the Neil Pryde Group, the helmet was designed by the Pulsium studio, with guidance from DuPont on moulding and other technical aspects. The four parts made of Zytel® are the top shell, the C-shaped 'strap' around the head and two lateral shells. Inside, the impact-absorbing layer is soft expanded polypropylene foam with a fabric lining.

"Our patented four-part design allows the helmet to fit the head better than a conventional one-part helmet," says Pascal Joubert des Houches, director of Pulsium. "The helmet's external components are like an armadillo's shell, giving flexibility and greater comfort with better protection. The design also creates a slimmer, high-tech profile, so the wearer doesn't look like a mushroom." The wearer can adjust the helmet's size with a disc-and-cable system which tightens the C-strap until it fits snugly around the head.

Pulsium and DXL chose DuPont™ Zytel® 80G33 nylon because the ingenious four-part design required a material with better mechanical properties than ABS and other plastics generally used for conventional one-part helmets, observes Joubert des Houches. "Initially we feared the moulding process would produce problems, but trials demonstrated this glass-reinforced resin's excellent mould-flow properties, even with thin-walled parts as in this helmet."

Zytel® 80G33 is a super-tough 66 nylon reinforced with 33 per cent glass fibre, offering an excellent combination of high impact-resistance, stiffness and toughness.

The helmet meets EN 1077 (European) and ASTM 2040 (American) safety standards for shock absorption, penetration and other characteristics. In one of the tests for these standards, the

helmet is secured on a heavy metal test-form; the helmet/ headform assembly is then dropped from a height onto the pointed end of a solid steel anvil. The test is repeated under various conditions.

The DXL helmet is available in three versions, Base, Ridge and Peak, and in several colours. It has a goggle retainer, integrated ear-covers and adjustable ventilation. It will be on sale in Europe, the United States and Japan in autumn 2007.

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Note to the editor:

This press release is based on information from:

DXL Europe, 14 rue du Pré Paillard, F-74 940 Annecy le Vieux, France

Contact: David Picamoles,

Tel: +33 450 277 848

Mobile: +33 609 26 84 26

and from:

Pulsium, Parc Oppidum, 5 rue Alphonse Bouffard Roupe, F-38 500 Voiron, France

Contact: Pascal Joubert des Houches:

Tel: +33 476 66 12 12

Mobile +33 607 28 99 58

Press contact (UK, Benelux, Scandinavia)

Andrew Wilkins

Tel.: +44 (0)1462 834490

Fax: +44 (0)1462 834490

Email: dupont.press@btconnect.com

DuPont press contact

Horst Ulrich Reimer

Tel.: +49 (0)6172 871297

Fax: +49 (0)6172 871266

Email: horst-ulrich.reimer@deu.dupont.com