



New material offer significant weight advantages for skis and other sporting equipment, where every extra gram of weight is critical in improving performance

HIGH TECH ON SNOW

SPORTS

Composite material innovations for skis and other sports equipment

Leading advanced composites company Hexcel Corporation develops, manufactures and markets lightweight structural materials for use not only in commercial aerospace, space and defense and industrial applications but in sports as well. Its newest range of composite materials for skis, snowboards and other high performance winter sports equipment include fast-curing prepreg, multi-axial reinforcements, and pultruded components.

A key supplier to the winter sports market, Hexcel understands the unique requirements of this fast moving industry. Here the drive for higher performance means manufacturers continuously develop improved designs to exploit technological advances. Hexcel's innovations in epoxy resins, carbon fiber fabrics, prepregs, laminates, pultruded profiles and polyurethane systems are enabling the manufacture of lighter, stronger and more durable skis and snowboards to answer the needs of world-class competitors, as well as the demanding sporting enthusiast.

HexPly® M78.1 fast curing prepreg

The latest addition to its HexPly® prepreg range is HexPly® M78.1 which helps ski manufacturers to reduce production cycle times. HexPly® M78.1 features a fast-curing epoxy resin matrix and is available with carbon, glass or aramid fiber reinforcements. It cures in just seven minutes at 120 degree Celsius, yet it has a long storage out life of two weeks at room temperature,

meaning there is often no need for freezer storage, saving time and energy.

HexPly® M78.1 is a low tack system making it easy to handle. It also provides excellent adhesion to auxiliary and core materials including aluminium, wood, thermoplastics and elastomers. Customers may find that this new system provides greater flexibility in ski manufacture, enhancing the process and the quality of the final product.

HiMax™ multiaxial fabrics

Hexcel's fiber-spreading capability allows the development of ultra-lightweight carbon multiaxials and the fibers can be placed in different axes to optimize the performance of the finished laminate.

HiMax™ carbon multiaxials are available in a wide range of fabric styles, with weights per ply from as low as 50 g/m², fiber orientations from 22.5 degree through to 90 degree in up to four layers, and a wide range of fiber types from 3k upwards. Hex-

cel's Research & Technology team collaborates closely with customers to develop fabrics optimized for their individual application and processing technique. A recent project involved the creation of a bespoke range of carbon triaxial reinforcements for a custom freeride ski brand, helping the customer deliver a product with a lightweight, soft flex and reactive ride whilst retaining strength and durability.

Polyspeed® pultruded profiles

Newly developed Polyspeed® pultruded profiles are used in several sports and marine applications including walking and ski poles, sail battens, stiffeners for skiffs and racing boats, kites, arrows, and stabilizing and extension devices for bows and crossbows. Constant section pultruded and pull wound profiles are produced in a continuous process with a variety of sections including tubes, rods and flat sections using carbon, glass, quartz and basalt fibres.

Further information:

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