BP Opens Curv™ Polypropylene Composite Manufacturing Line in Germany

10.04.2002 - 8th April 2002 BP today announced the opening of its first large-scale production facility for the manufacture of Curv™ self reinforced polypropylene composites. The new line has been integrated into the BP fabrics and fibres division's Gronau, Germany site, the largest woven polypropylene plant in Europe. BP has commissioned an initial annual capacity of 5,000 tonnes to be supplied in sheets or rolls in thickness from 0.3 to 3.0 mm.

Curv is a new concept in thermoplastic materials bridging the gap between commodity plastics and glass reinforced materials. Curv is often referred to as being 'self-reinforced' because it comprises high performance thermoplastic fibres in a matrix of exactly the same material.

The heart of the Curv patented process is called "hot compaction" technology, where highly drawn fibres are submitted to carefully controlled conditions such that a thin layer from the skin of each fibre is melted, then recrystallised to form a matrix. Around 80% of the original fibre properties are maintained in an all-polypropylene sheet which shows stiffness and strength more often associated with GMT (glass mat thermoplastics). Being 100% polypropylene, Curv has low density, can be thermoformed to make parts using low cost tools and may be easily recycled through existing channels. An unexpected feature of Curv is its outstandingly high impact and abrasion resistance. Design engineers particularly appreciate Curv's high strain to failure characteristics, providing exceptional energy management properties. Yet more surprising is that unlike other thermoplastics Curv does not become brittle, even at extremely low temperatures.

During the past year, a number of leading automotive OEM's and Tier 1 suppliers have been evaluating a range of new parts using Curv from a pilot line and will now be receiving material from the new line. BP also has a wide range of non-automotive applications in development, including personal protective equipment, sporting goods and transportation cases that make use of the exceptional impact performance made possible by Curv.

Parallel to the commissioning of the new Curv production line, a commercial-scale thermoforming machine has been installed in BP's newly expanded Technology and Development Center in Gronau. The thermoforming line will not be used to produce commercial parts but has been installed to promote new developments and assist in application development using customer tooling. BP's fabrics and fibres business is headquartered in Atlanta, Georgia.