

PRESS INFORMATION

EMS-GRIVORY at the Tour de France

Excellent stiffness and strength values similar to those of metal in combination with a low specific weight are the unique properties of Grivory G grades reinforced with carbon and long glass fibres. Which is why this material is increasingly used in the segment of sport and leisure for particularly demanding applications.

The «Impec» bicycle frame was developed by the Company BMC Switzerland AG (Bicycle Manufacturing Company). After intensive analysis, test and optimisation, the customer decided to manufacture the frame supports from EMS-GRIVORY products. These supports made of Grivory GC-4H and GVL-6H provide the bicycle frame with the required bending stiffness, strength, shock-absorbance properties and all weight savings to be achieved.

Bicycle frame made of EMS materials

The design of the frame supports presented the engineers at BMC Switzerland with a special challenge. Many design possibilities were tested before finally the idea was born to shape the connections at the frame intersection, of two half-shells instead of one sleeve socket.

These half-shells, or simply shells, were made of a revolutionary composite compound material (EMS material), are very strong while at the same time very light in weight, have excellent shock absorbance properties and can be absolutely accurately and efficiently assembled on the frame tubes.

With this high-strength and very precise half-shell technology, BMC Switzerland was able to form the connections of the bicycle frames in such a way that a life-long guarantee can be given. The open design of the shells created the necessary conditions for the last work step in manufacture of the Impec frame, bonding of the shells to the frame tube, can be carried out with

a much better overview and in a more controlled manner than was possible with the design of the previous model.

High quality requirements satisfied

Along with a range of laboratory tests, some of the bicycle frames were thoroughly tested by professional riders during the Tour de France 2011. During this race there were no broken frames or other incidents which could have been caused by the frame. The findings of these tests were made use of for further design optimisations. After manufacture, every Impec frame, including the forks, is subjected to a static loading test where extremely high quality requirements must be satisfied to the extent that breakage of the components is accepted in order to determine the loading limits and to guarantee zero-error manufacturing.

The half-shells made of Grivory GC-4H and GVL-6H are optimal and safe frame connectors due to their high mechanical strength, low tendency to creep and good toughness which enable them to fulfil the high requirements demanded of a bicycle frame for professional riders.

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The frame connectors made of Grivory GC-4H and GVL-6H provide the frame with the required bending strength, toughness and shock-absorbing properties while allowing weight savings to be achieved.



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