



## **Polymer manufactures stirrups made of multi-material**

14 June 2019, 02:00

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**Polymer specialises in plastics but wanted to expand their range of products for equestrian sports with items made of multi-materials. They contacted Sirris with regard to material testing and advice.**

Polymer is a family-run business established in Nivelles in Belgium that specialises in the field of plastic injection moulding. Over the years, Polymer has become a market leader in this field mainly based on the many referrals from companies in various sectors. They provide products for a wide-ranging set of sectors including electronics, biomedical products, equestrian sports and for the design, automotive and food industries.

### **Stirrups**

Polymer developed their product range for equestrian sports under the Compositi brand name. Polymer has introduced a number of innovations. In order to be able to guarantee product quality, Polymer asked Sirris to carry out [strength and fatigue tests](#). Sirris not only carried out the various material tests in test laboratories to improve the new products but also provided advice and consulting services with regard to the development of new products.

### **Multi-materials**

The design and materials of the new stirrups are different to those of the previous stirrup models. A combination of plastics and metal was selected to take advantage of the strong characteristics of both materials. Polymar's know-how is in plastics and their knowledge of metals was previously a little limited. Sirris was the right partner because they have the required expertise in both domains and the required (test) infrastructure in-house.

The developed products consist of a metal core surrounded by plastic. Polymar and Sirris researched how to improve the adhesion between the metal inserts and the plastic. The metal inserts are coated with plastic using injection moulding to realise the synergy between the design and strength of the product. This combines the strength of the metal and the ductility of the plastic. The goal is to integrate and improve the comfort and shock absorption level of the product.

The new stirrups were frequently tested and optimised before these were launched on the market.

## Authors



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