

Strong tapes for light-weight design

Even less strong orientation of the reinforcing fibres in long-fibre reinforced products is not always capable of providing optimal reinforcement (direction) everywhere in every component without weld line formation. In addition, many components are only subjected to high forces in a few places. These are decisive for the choice of material even though in many other areas, a less high-performance material could be used.



EMS-GRIVORY has now developed endless fibre-reinforced tapes where all fibres are aligned in exactly the direction of the band. The fibres are just as well impregnated as the granules and therefore, exhibit a degree of efficiency on the same level as the theoretically maximum achievable fibre properties. These bands are compatible to the injection-moulding materials used in each case and are welded with the component by being inserted into the mould and over-moulded with the material.

The bands should be consciously inserted in the direction of the maximum main stressing in order to use less material overall. They are also excellently suited to reinforce certain local weak areas in the component (weld lines), thus optimising the property values to a significantly higher level. Component specifications can be achieved with lower volume which has a positive effect on part weight and production costs.

EMS offers these tapes together with calculation of the correction position and alignment in a package which includes processing technology. In this way, the EMS Tape Technology (ETT) offers not just an innovative product, but a complete system solution for fully automated local reinforcement of challenging components in large series.



In cooperation with the advanced technical college Hochschule Rapperswil (Switzerland), process technology was developed and key figures collected. Properties such weld line strength, creep

strength, flexural fatigue strength and bending stiffness in dependency on temperature can be significantly improved.

