

Friction Stir Welding (FSW)

The EC Group has put in operation its new double-headed Friction Stir Welding (FSW) unit at the production site Echternach. With this achievement EC belongs to the first companies in Europe, which can join aluminium extrusions as well as cast or rolled parts with this welding technology from two sides in one production step over a length of 3m. The FSW unit can manufacture products with dimensions of 3 x 18m. Each welding head can join aluminium up to 5 mm thickness.

The unit will start to manufacture for customers in the transportation industry (Rail and road vehicles): Floor parts, large format sidewalls and interior parts, but will be available also for projects from other industries.

Friction Stir Welding (FSW) joins two parts with a specially shaped, rotating tool. Due to rotation and pressure of the tool frictional heat is produced and the parts soften plastically in the area of the rotating tool without reaching the melting point.

The pin of the tool immerses into the malleable material of the parts and produces by its rotation and shape a homogenous blend along the joining line. The shoulder of the tool forms and smoothes the welding line with only a marginal ridge.

After cooling there is a solid phase joint of the two parts. The process does not need filler wire, welding flux or gas shielding and produces a sealed weld without porosity and without inclusions.

Welded parts do not melt but form a ductile structure (similar to the extrusion molding of profiles). As a result there are only minor thermal stresses in the material, and consequently a low distortion even for long welds and large material thickness

EURO-COMPOSITES® is headquartered in Luxembourg and operates three production sites in Europe und USA. Our centre of Excellence, R&D is also based in Echternach, Luxembourg. The EC group employs more than 640 people.

EC is specialised in the design and production of advanced composites and offers a high degree of vertical integration from a complex assembly group down to the simple sheet of honeycomb. The market focus is on the transportation industry (Aviation, Rail, Space) and the machine building industry.

Echternach, April 2008

Your press contact at EC:

Horst Willkomm

Phone: +352-729463-264

Fax: +352-729463-9264

Email: willkomm@euro-composites.com