Highlight

Aachen,
August 30, 2012

Experimental determination of plastic and rupture multiaxial criteria for laser TWIST welded PP polymer joins

Within WP6 (Materials) of PolyBright, TWIST welded PP joins are tested on a ARCAN-Mines apparatus. The sample is located in the middle of the global system. The orientation of the applied loading can produce state of stress going from tension to shear including the possibility of compression.

The performances of the laser twist welded joins are compared with performances of the macroscopic properties of the materials tested as bone samples in uniaxial traction.

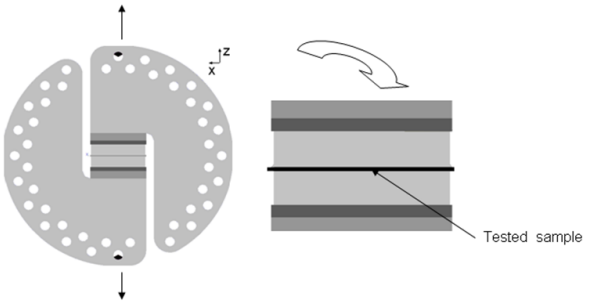


Figure 2: Sample is placed in the center of ARCAN-Mines testing system.

The performance of the TWIST welded PP joins reach about 80% of the properties of the massive plastic.

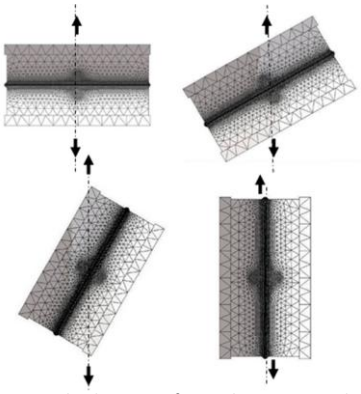
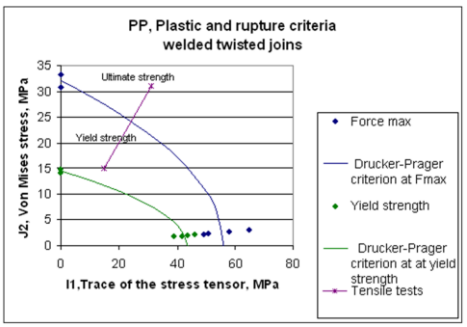


Figure 3: Sample can be oriented relative to force direction to change the stress tensor in the join center.

Figure 1: Plastic and rupture criterion of TWIST welded PP joins



SEVENTH FRAMEWORK PROGRAMME

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