The influence of removing sizing on strength and stiffness of conventional and high modulus E-glass fibres

Two types of E-glass fibres, a conventional and a high modulus where the last one in the following will be denoted as ECR-glass fibre, were investigated regarding density, diameter, stiffness and strength. The fibres were analysed as pristine and after sizing removal treatments. The sizing was removed by either burning at 565°C or soxhlet extraction with acetone. It was found that the density and the stiffness increased after removing the sizing by the two removal treatments whereas the diameter did not change significantly. The strength of the fibres decreased after burning as the sizing, protecting against water and fibre-fibre damage, had been removed. The strength of the fibres after extraction was not significantly different from the strength of the pristine fibres despite removing the sizing. This indicates that the bonded part of sizing is still protecting the glass fibre surface.

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