Engineered Solutions – From Concept to Completion

Design and Supply of Carbon-Fibre Stoneguards for Cummins QSK19 Engines

Flowonics Limited worked with Cummins in the UK to develop a stoneguard for their QSK19 power units. These power units were being fitted on the Class 185 'Desiro' Diesel Multiple Units (DMUs) manufactured by Seimens for use on First TransPennine Express services.

Critical to the success of the design was to achieve a stoneguard which combined high mechanical strength and impact resistance with light weight. In addition, the stoneguard and its fixings had to be designed to meet the requirements of mandatory standards applicable to the rail industry.

In order to meet these requirements, Flowonics designed and manufactured a stoneguard in carbon fibre. This material was chosen as it provided the best balance between strength and weight. In addition the method of production, using a standard former onto which the carbon-fibre sheets were laid, enabled close dimensional tolerances to be achieved repeatably.

Having been successfully trialled on a QSK19 power unit fitted to a Class 185 vehicle, the design was approved for use on the whole fleet. Flowonics supplied Cummins with stoneguards in line with their production requirements for the Seimens build programme. In service these stoneguards have proved to be robust and have effectively eliminated impact damage from ballast strikes on vulnerable areas of the power unit. This in turn has reduced the number of service failures arising from damage to the power unit and its components, maximising the availability of these units for traffic and reducing unplanned maintenance or replacement of damaged components.

The design, manufacture and supply of these items demonstrates Flowonics capabilities in the development of Engineered Solutions for the rail industry.

For further information regarding this and other Flowonics solutions, please contact:

Andrew Hawker
Flowonics Limited,
Unit 9b, Hurst Business Park,
Brierley Hill, West Midlands.
DY5 1UT

Tel: 01384 472820
Fax: 01384 472821
Mobile: 07968 576995
E-Mail: andyh@flowonics.co.uk
Web: www.flowonics.co.uk