
Fuels for Diesel Engines

Diesel Fuel Injection Equipment Manufacturers Common Position Statement

Please note that this statement supersedes all previous joint statements

The continual world-wide pressure to reduce engine emissions has necessitated the development of radically improved forms of diesel fuel injection equipment capable of meeting the increasingly stringent legislation targets. Diesel fuel producers have had to develop improved fuels with, for example, reduced sulphur and aromatic content and increased cetane number to meet these requirements.

Together the diesel fuel injection manufacturers and the diesel fuel industry have developed products that are mutually compatible, will perform to their intended specification as originally fitted and continue to achieve this performance throughout the useful life of the equipment.

International Standards have been established for diesel fuels which provide the required characteristics for achieving and maintaining the necessary engine emissions performance, and these Standards continue to be revised. Fuel parameters such as cetane number, viscosity, density, lubricity, sulphur and aromatic content together with the absence of additional free water and dirt contamination are key to good emissions performance of equipment in the field. The European fuel Standard EN590 embodies the latest fuel features, an essential part being the inclusion of the lubricity requirement. The avoidance of contamination of fuel by water and dirt is the responsibility of both the fuel supplier and the user.

Fuel injection equipment manufacturers will be unable to guarantee that their products will meet the intended life time performance and emissions targets unless fuel with similar properties to those recently developed in line with the latest EN590 specification is available for all markets. The responsibility therefore must fall to the equipment user and/or the fuel supplier to ensure that the fuels used are compatible with the objectives of the emissions legislation.

Demands are now being made for engines in all markets to improve emissions performance. Some of these markets are subject to a wide variation in fuel quality. The responsibility for the maintenance and development of these fuel Standards is different for each of the product markets and end uses, e.g., agricultural, military, aviation, power generation, heating equipment, etc. Regulations are now in place to further limit the sulphur content of diesel fuels for both on-road and off-road applications within Europe and the USA. The processes to further reduce sulphur levels will inevitably result in further reductions of the natural lubricity of diesel fuel, and so the use of lubricity additives is now commonplace in order to restore the lubricity of the fuel. **It is essential that the lubricity of the fuel as measured by the HFRR test specified in ISO 12156-1 meets the requirement of a wear scar diameter (corrected to a standardised water vapour pressure of 1.4 kPa) not greater than 460 microns, as specified in ISO 12156-2.**

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Users of diesel engines are reminded that fuel Standards apply to the fuel only to the point of delivery from the distribution network. From this point on it is the user's responsibility to protect the fuel from free water and dirt contamination to enable engines to achieve their designed performance, emission, and durability targets. Engine/vehicle manufacturers should incorporate appropriate fuel conditioning apparatus for the application, duty cycle, territory, and climate.

Alternative liquid fuels are becoming increasingly available to end-users. Some manufacturers have provided compatible components for use with these fuels, however users should be aware that the vehicles, engines and equipment were not designed to run on them and are recommended to refer to the equipment manufacturers 'Limitations of Use' documents for guidance prior to using such fuels.

Fuel injection equipment manufacturers cannot guarantee their products against performance or emissions failures if inappropriate fuels have been used. Any evidence that the product has fallen short of the required level of performance directly due to the use of non-acceptable fuels will render the manufacturers' guarantee null and void.

The views contained in this Common Position Statement are those of the Joint FIE Manufacturers, which comprises the following companies :-

Signed on behalf of
DELPHI DIESEL SYSTEMS.....
28.6.2004
Dr Detlev Schoeppe, Director of Engineering

Signed on behalf of
ROBERT BOSCH GmbH DIESEL SYSTEMS.....

09.07.04

Signed on behalf of
SIEMENS VDO DIESEL SYSTEMS.....
10.6.04
Mr Johann Warga, CEO

Signed on behalf of
STANADYNE CORPORATION.....
26 Aug '04
Mr William W Kelly, Sr. Vice President & General Manager

Signed on behalf of
DENSO CORPORATION.....
04.8.'04
Mr Masahiko Miyaki, Managing Officer, Fuel Injection Product Division