



**SLOVENSKI STANDARD**  
**SIST EN ISO 12156-1:2006**  
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**SIST EN ISO 12156-1:2000**

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Diesel fuel - Assessment of lubricity using the high-frequency reciprocating rig (HFRR) - Part 1: Test method (ISO 12156-1:2006)

Diesekraftstoff - Methode zur Bestimmung der Schmierfähigkeit unter Verwendung eines Schwingungsverschleiß-Prüfgerätes (HFRR) - Teil 1: Prüfverfahren (ISO 12156-1:2006)

Carburant diesel - Évaluation du pouvoir lubrifiant au banc alternatif a haute fréquence (HFRR) - Partie 1: Méthode d'essai (ISO 12156-1:2006)

**Ta slovenski standard je istoveten z: EN ISO 12156-1:2006**

**ICS:**

75.160.20      V^\[ æ\| iãæ      Liquid fuels

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English Version

Diesel fuel - Assessment of lubricity using the high-frequency reciprocating rig (HFRR) - Part 1: Test method (ISO 12156-1:2006)

Carburant diesel - Évaluation du pouvoir lubrifiant au banc alternatif à haute fréquence (HFRR) - Partie 1: Méthode d'essai (ISO 12156-1:2006)

Dieselmotorkraftstoff - Methode zur Bestimmung der Schmierfähigkeit unter Verwendung eines Schwingungsverschleiß-Prüfgerätes (HFRR) - Teil 1: Prüfverfahren (ISO 12156-1:2006)

This European Standard was approved by CEN on 7 September 2006.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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COMITÉ EUROPÉEN DE NORMALISATION  
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## Foreword

This document (EN ISO 12156-1:2006) has been prepared by Technical Committee ISO/TC 22 "Road vehicles" in collaboration with Technical Committee CEN/TC 19 "Gaseous and liquid fuels, lubricants and related products of petroleum, synthetic and biological origin", the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2007, and conflicting national standards shall be withdrawn at the latest by April 2007.

This document supersedes EN ISO 12156-1:2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

### Endorsement notice

The text of ISO 12156-1:2006 has been approved by CEN as EN ISO 12156-1:2006 without any modifications.

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**Diesel fuel — Assessment of lubricity  
using the high-frequency reciprocating  
rig (HFRR) —**

**Part 1:  
Test method**

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*Carburant diesel — Évaluation du pouvoir lubrifiant au banc alternatif à  
haute fréquence (HFRR) —  
Partie 1. Méthode d'essai*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 12156-1 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 7, *Injection equipment and filters for use on road vehicles*, in collaboration with ISO/TC 28, *Petroleum products and lubricants*.

This second edition cancels and replaces the first edition (ISO 12156-1:1997), which has been technically revised. It also incorporates the Technical Corrigendum ISO 12156-1:1997/Cor.1:1998.

ISO 12156 consists of the following parts, under the general title *Diesel fuel — Assessment of lubricity using the high-frequency reciprocating rig (HFRR)*.

- *Part 1: Test method*
- *Part 2: Limit*



## Introduction

All diesel fuel injection equipment has some reliance on diesel fuel as a lubricant. Wear due to excessive friction resulting in shortened life of engine components, such as diesel fuel injection pumps and injectors, has sometimes been ascribed to lack of lubricity in the fuel.

The relationship of test results to diesel injection equipment component distress due to wear has been demonstrated for some fuel/hardware combinations where boundary lubrication is a factor in the operation of the component.

Test results from fuels tested to this procedure have been found to correlate to many fuel/hardware combinations and provide an adequate prediction of the lubricating quality of the fuel.

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# Diesel fuel — Assessment of lubricity using the high-frequency reciprocating rig (HFRR) —

## Part 1: Test method

**WARNING** — Application of this part of ISO 12156 may involve the use of hazardous materials, operations and equipment. This part of ISO 12156 does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this part of ISO 12156 to establish appropriate safety and health practices and determine the applicable regulatory limitations prior to use.

### 1 Scope

This part of ISO 12156 specifies a test method using the high-frequency reciprocating rig (HFRR), for assessing the lubricating property of diesel fuels, including those fuels which may contain a lubricity-enhancing additive.

It applies to fuels used in diesel engines.

### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO Guide 33:2000, *Uses of certified reference materials*

ISO Guide 34:2000, *General requirements for the competence of reference material producers*

ISO Guide 35:2006, *Reference materials — General and statistical principles for certification*

ISO 683-17:1999, *Heat-treated steels, alloy steels and free-cutting steels — Part 17: Ball and roller bearing steels*

ISO 3290:2001, *Roller bearings — Balls — Dimensions and tolerances*

ISO 4259:1992, *Petroleum products — Determination and application of precision data in relation to methods of test*

ISO 5272:1979, *Toluene for industrial use — Specifications*

ISO 6507-1:2005, *Metallic materials — Vickers hardness test — Part 1: Test method*

ISO 6508-1:2005, *Metallic materials — Rockwell hardness test — Part 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T)*

ASTM D 329-02, *Standard Specification for Acetone*