# Railway applications - Suspension components - Hydraulic dampers

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**EESTI STANDARDI EESSÕNA** **NATIONAL FOREWORD**

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| Käesolev Eesti standard EVS-EN 13802:2004 sisaldab Euroopa standardi EN 13802:2004 ingliskeelset teksti.<br><br>Käesolev dokument on jõustatud 23.11.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.<br><br>Standard on kättesaadav Eesti standardiorganisatsioonist. | This Estonian standard EVS-EN 13802:2004 consists of the English text of the European standard EN 13802:2004.<br><br>This document is endorsed on 23.11.2004 with the notification being published in the official publication of the Estonian national standardisation organisation.<br><br>The standard is available from Estonian standardisation organisation. |

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| **Käsitlusala:**<br>This European Standard specifies a method of specifying delivery condition for hydraulic dampers (excluding end mountings) used on rail vehicles (including pantograph dampers and dampers that control the dynamic behaviour of the vehicle), and gives tests for the verification of the performance requirements specified. | **Scope:**<br>This European Standard specifies a method of specifying delivery condition for hydraulic dampers (excluding end mountings) used on rail vehicles (including pantograph dampers and dampers that control the dynamic behaviour of the vehicle), and gives tests for the verification of the performance requirements specified. |

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English version

# Railway applications - Suspension components - Hydraulic dampers

Applications ferroviaires - Eléments de suspension - Amortisseurs hydrauliques

Bahnanwendungen - Federungselemente - Hydraulische Dämpfer

This European Standard was approved by CEN on 24 June 2004.

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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.

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# Contents

page

# Foreword

This document (EN 13802:2004) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

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 February 2005, and conflicting national standards shall be withdrawn at the latest by February 2005.

The European Standard has been prepared under a mandate (M/024) given to CEN by the Commission of the European Communities and the European Free Trade Association, and supports essential requirements of the following EC Directives:

— Council Directive 96/48/EEC of 23 July 1996 on interoperability of the trans-European high-speed rail system[1)];

— Council Directive 93/38/EEC of 14 June 1993 co-ordinating the procurement procedures of entities operating in the water, energy, transport and telecommunications sectors[2)];

— Council Directive 91/440/EEC of 29 July 1991 on the development of the Community’s railways[3)].

This document includes a Bibliography.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



1) Official Journal of the European Communities N° L 235 of 17.09.96.

2) Official Journal of the European Communities N° L 199 of 09.08.93.

3) Official Journal of the European Communities N° L 199 of 09.08.93.

# 1 Scope

This document applies to hydraulic dampers (excluding end mountings) used on rail vehicles. The dampers covered in this standard include:

- dampers that control the dynamic behaviour of vehicle:
  - suspension dampers, (e.g. primary vertical dampers, secondary vertical dampers and secondary lateral dampers),
  - yaw dampers,
  - roll dampers,
  - inter-vehicle dampers,
- dampers that control the dynamic behaviour of mechanical systems:
  - pantograph dampers,
  - etc.

All relevant terminology which is specific to the subject is defined in this document.

# 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.

prEN 14363, *Railway applications — Testing for the acceptance of running characteristics of railway vehicles — Testing of running behaviour and stationary tests.*

EN 61373, *Railway applications — Rolling stock equipment — Shock and vibration tests (IEC 61373:1999).*

EN ISO 2813, *Paints and varnishes - Determination of specular gloss of non-metallic paint films at 20°, 60° and 85° (ISO 2813:1994, including Technical Corrigendum 1:1997).*

EN ISO 9000, *Quality management systems — Fundamentals and vocabulary (ISO 9000:2000).*

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests.*

# 3 Terms, definitions and symbols

For the purposes of this document, the following terms, definitions and symbols apply.

NOTE 1 Decimal multiple and sub-multiple units defined in this clause may be used.

NOTE 2 In this document, the spatial characteristics of the damper are defined with reference to its axis (see Figure 1). Axial characteristics are defined along the $x$-axis. Extension of the damper is defined as positive and compression is negative. Transverse characteristics are defined in the $y$–$z$ plane. Rotations are defined as positive in a clockwise direction.