

**Raudteealased rakendused. Kiirrongide välised  
nähtavad ja ja kuuldavad hoiatusseadmed. Osa 2:  
Helisignaamid**

**Railway applications - External visible and audible  
warning devices for trains - Part 2: Warning horns**

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 15153-2:2013 sisaldab Euroopa standardi EN 15153-2:2013 ingliskeelset teksti.	This Estonian standard EVS-EN 15153-2:2013 consists of the English text of the European standard EN 15153-2:2013.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 09.01.2013.	Date of Availability of the European standard is 09.01.2013.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

ICS 45.060.10

### Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:  
Aru 10, 10317 Tallinn, Eesti; [www.evs.ee](http://www.evs.ee); telefon 605 5050; e-post [info@evs.ee](mailto:info@evs.ee)

### The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:  
Aru 10, 10317 Tallinn, Estonia; [www.evs.ee](http://www.evs.ee); phone 605 5050; e-mail [info@evs.ee](mailto:info@evs.ee)

English Version

## Railway applications - External visible and audible warning devices for trains - Part 2: Warning horns

Applications ferroviaires - Dispositifs externes  
d'avertissement optiques et acoustiques pour les trains -  
Partie 2: Avertisseurs sonores

Bahnanwendungen - Optische und akustische  
Warneinrichtungen für Schienenfahrzeuge - Teil 2:  
Signalhörner

This European Standard was approved by CEN on 10 November 2012.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**Management Centre: Avenue Marnix 17, B-1000 Brussels**

# Contents

Page

Foreword.....	3
Introduction .....	4
1 Scope .....	5
2 Normative references .....	5
3 Terms and definitions .....	5
4 Symbols and abbreviations .....	6
5 Requirements .....	6
5.1 General.....	6
5.2 Acoustic requirements .....	6
5.3 Operation .....	7
5.4 Energy supply .....	7
5.5 Impact protection.....	7
6 Test requirements.....	8
6.1 Environmental test conditions .....	8
6.2 Test equipment .....	8
6.3 Test procedure .....	9
6.4 Data processing.....	9
6.5 Test report .....	10
Annex A (informative) Summary of testing requirements.....	11
Annex B (informative) Test of the horn under snow conditions .....	12
B.1 Test conditions .....	12
B.2 Test procedure .....	12
B.3 Acceptance criteria.....	12
Annex C (informative) Lateral sound pressure tests.....	13
Annex D (informative) A-deviation.....	14
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2008/57/EC .....	15
Bibliography.....	19
Figure 1 — Open site for warning horn measurements.....	8
Table A.1 — Interoperability constituent and sub-system testing requirements .....	11
Figure C.1 – Lateral measurement positions .....	13
Table ZA.1 — Correspondence between this European Standard, the Union Rail System, Subsystem Rolling Stock, TSI Locomotives and Passenger RST (Preliminary draft; Ref. IU-LOC_ PAS_TSI_draft; Version 0.5; Date 11/05/2012) and Directive 2008/57/EC.....	16
Table ZA.2 – Correspondence between this European Standard, the HS TSI Operations (published in the Official Journal L 84 on 26 March 2008) and the CR TSI Operations (published in the Official Journal L 144 on 31 May 2011) and Directive 2008/57/EC.....	17
Table ZA.3 — Correspondence between this European Standard, the Conventional Rail - Rolling Stock - Noise TSI (published in the Official Journal L 99 on 13 April 2011) and Directive 2008/57/EC .....	18

## Foreword

This document (EN 15153-2:2013) 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 July 2013, and conflicting national standards shall be withdrawn at the latest by July 2013.

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

This document supersedes EN 15153-2:2007.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive 2008/57/EC.

For relationship with EU Directive 2008/57/EC, see informative Annex ZA, which is an integral part of this document.

The main changes with respect to the previous edition are:

- technical requirements have been brought in line with the conventional TSIs;
- UIC frequencies (660 Hz; 370 Hz) have been included;
- clarification of the measurement height for the sound pressure level requirement.

This series of documents *Railway applications — External visible and audible warning devices for trains* consists of the following parts:

- *Part 1: Head, marker and tail lamps;*
- *Part 2: Warning horns.*

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

## Introduction

This European Standard was produced following a review of EN 15153-2:2007 to incorporate the requirements of rolling stock TSIs.

This document is a preview generated by EVS

## 1 Scope

This European standard defines warning horn requirements which deliver the required audibility of approaching trains, including high speed and conventional rail and excluding road, metro and self-contained systems. For this purpose, the following requirements are included:

- functional and technical requirements of the warning horn as a component,
- functional and technical requirements of the integration of warning horns into the vehicle, and
- test requirements.

Operational requirements for warning horns have been excluded.

NOTE The requirements for the control of warning horns can be found in prEN 16186-1.

## 2 Normative references

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

prEN 16186-1, *Railway applications — Driver's Cab — Part 1: Visibility, layout, access*

EN 61672-1, *Electroacoustics — Sound level meters — Part 1: Specifications (IEC 61672-1)*

EN 61672-2, *Electroacoustics — Sound level meters — Part 2: Pattern evaluation tests (IEC 61672-2)*

EN 60942, *Electroacoustics — Sound calibrators (IEC 60942)*

## 3 Terms and definitions

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

### 3.1

#### **warning horn**

device or assembly capable of producing the specified audible warning tones

### 3.2

#### **vehicle front**

leading edge of the train in its operational condition

Note 1 to entry: This would be the extreme front edge of any of the following - couplers, buffers, structures and vehicle profile.

### 3.3

#### **C-weighted sound pressure level**

$L_{pCeq,T}$

sound pressure level obtained using the frequency weighting C, given by the following formula:

$$L_{pCeq,T} = 10 \lg \left( \frac{1}{T} \int_0^T \frac{p_C^2(t)}{p_0^2} dt \right)$$