

# SVENSK STANDARD

## SS-EN 16729-3:2018



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### **Järnvägar – Infrastruktur – Oförstörande provning av räler i spår – Del 3: Krav för identifiering av inre defekter och ytdefekter på räler**

### **Railway applications – Infrastructure – Non-destructive testing on rails in track – Part 3: Requirements for identifying internal and surface rail defects**

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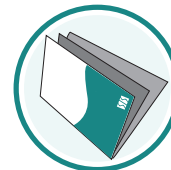
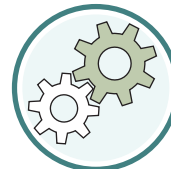
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EUROPEAN STANDARD

**EN 16729-3**

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2018

ICS 93.100

English Version

## Railway applications - Infrastructure - Non-destructive testing on rails in track - Part 3: Requirements for identifying internal and surface rail defects

Applications ferroviaires - Infrastructure - Essais non destructifs sur les rails de voie - Partie 3 : Exigences pour l'identification des défauts internes et de surface des rails

Bahnanwendungen - Infrastruktur - Teil 3: Anforderungen zur Identifizierung von inneren Fehlern und Schienenoberflächenfehlern

This European Standard was approved by CEN on 22 January 2018.

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.

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**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

**SS-EN 16729-3:2018 (E)**

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## SS-EN 16729-3:2018 (E)

### European foreword

This document (EN 16729-3:2018) 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 October 2018, and conflicting national standards shall be withdrawn at the latest by October 2018.

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

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.

This series of European Standards EN 16729 “Railway applications – Infrastructure – Non-destructive testing on rails in track” consists of the following parts:

- *Part 1: Requirements for ultrasonic inspection and evaluation principles;*
- *Part 2: Eddy current testing of rails in track (in preparation);*
- *Part 3: Requirements for identifying internal and surface rail defects;*
- *Part 4: Qualification of personnel for non-destructive testing on rails (in preparation).*

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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



## **Introduction**

This European Standard represents the actual state of the art of identifying surface and internal rail defects of rails in track applied by European railway companies.

## SS-EN 16729-3:2018 (E)

### 1 Scope

This part of this European Standard specifies the NDT methods used to detect internal and surface rail defects and the suitability of each method for the detection and evaluation of typical rail defects of rails installed in track.

This part of this European Standard does not specify the assessment criteria of rail defects and the derived actions.

This part of this European Standard applies only to rail profiles meeting the requirements of EN 13674-1.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 16729-1:2016, *Railway applications - Infrastructure - Non-destructive testing on rails in track - Part 1: Requirements for ultrasonic inspection and evaluation principles*

### 3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

#### 3.1 damaged rail

rail which is neither cracked nor broken, but which has other defects

#### 3.2 cracked area

part of the rail with a localized discontinuity of material

#### 3.3 broken rail

rail which has separated into two or more pieces;

or

rail from which a piece of metal becomes detached from the rail head, with a gap of more than 50 mm in length and more than 10 mm in depth resulting in a running band less than 30 mm in width

Note 1 to entry: See Figure 1 and Figure 2 for the first part of the definition, and Figure 3 for the second part.

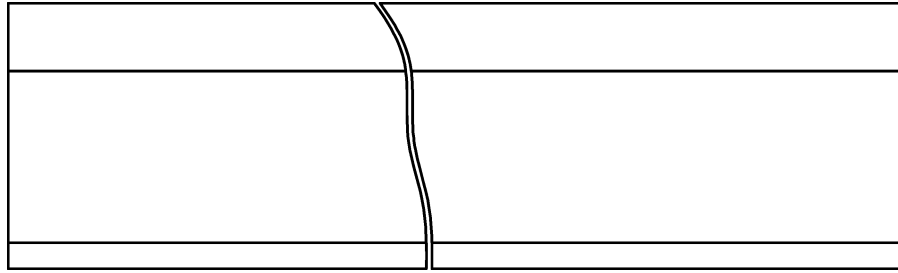
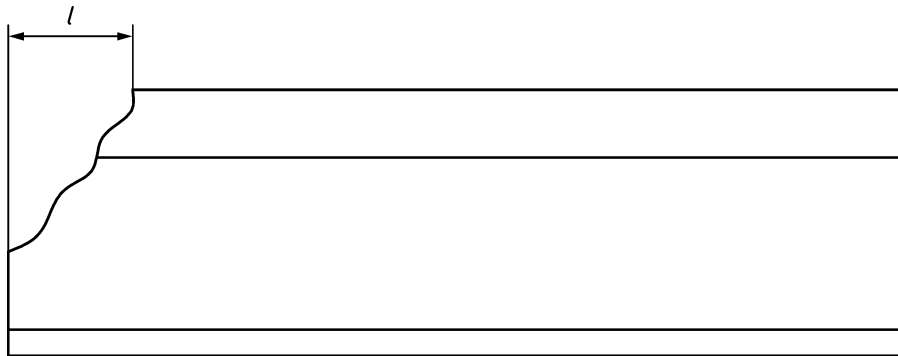


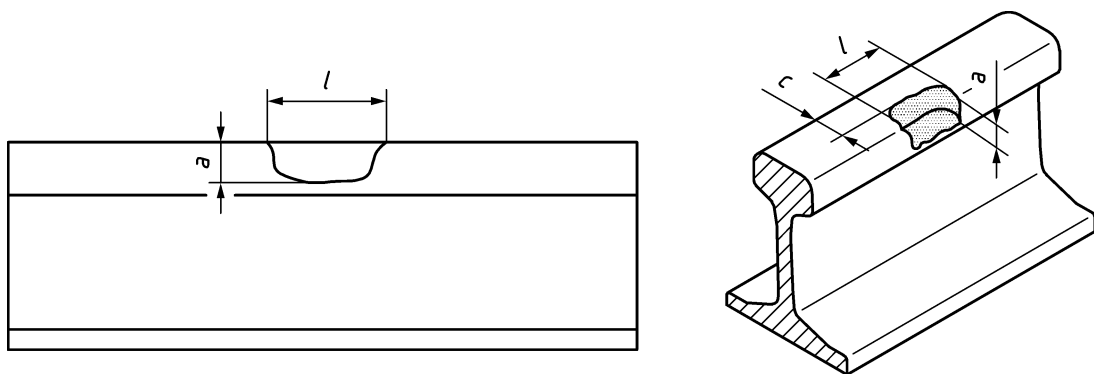
Figure 1 — Broken rail



**Key**

*l* visible horizontal length

Figure 2 — Example of a broken rail with a gap at the rail end



**Key**

*a* vertical depth

*l* visible horizontal length

*c* non cracked area

Figure 3 — Example of a broken rail with a gap

**3.4**

**rail surface defect**

defect which initiates on any of the surfaces of the rail

**3.5**

**rail head surface defect**

defect which initiates on the running surface of the rail