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Railway applications – Rail defects – Part 1: Rail defect management; English version EN 17397-1:2020, English translation of DIN EN 17397-1:2021-03

Bahnanwendungen –
Schienenfehler –
Teil 1: Handhabung von Schienenfehlern;
Englische Fassung EN 17397-1:2020,
Englische Übersetzung von DIN EN 17397-1:2021-03

Applications ferroviaires –
Défauts de rails –
Partie 1: Gestion des défauts de rails;
Version anglaise EN 17397-1:2020,
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In case of doubt, the German-language original shall be considered authoritative.

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A comma is used as the decimal marker.

National foreword

This document (EN 17397-1:2020) has been prepared by Technical Committee CEN/TC 256 “Railway applications” (Secretariat: DIN, Germany).

The responsible German body involved in its preparation was *DIN-Normenausschuss Fahrweg und Schienenfahrzeuge* (DIN Standards Committee Railway), Subcommittee NA 087-00-01-12 UA “Monitoring and treatment of rails”.

The DIN document corresponding to the document referred to in this document is as follows:

ISO 31000:2018	DIN ISO 31000:2018-10

For current information on this document, please go to DIN’s website (www.din.de) and search for the document number in question.

National Annex NA
(informative)

Bibliography

DIN ISO 31000:2018-10, *Risk management — Guidelines (ISO 31000:2018)*

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 17397-1

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English Version

Railway applications - Rail defects - Part 1: Rail defect management

Applications ferroviaires - Défauts de rails - Partie 1: Gestion des défauts de rails

Bahnanwendungen - Schienenfehler - Teil 1: Handhabung von Schienenfehlern

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 17397-1:2020) 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of an identical text or by endorsement, at the latest by May 2021, and conflicting national standards shall be withdrawn at the latest by May 2021.

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1 Scope

This document specifies the defect management system the infrastructure manager uses to control the risk of severe accidents due to degradation of internal or surface defects on rails complying with EN 13674-1, EN 13674-2, EN 13674-4 and EN 15689:2009 (excluding grooved rails EN 14811 — which need alternative systems).

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 16729-3:2018, *Railway applications - Infrastructure - Non-destructive testing on rails in track - Part 3: Requirements for identifying internal and surface rail defects*

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 https://www.iso.org/obp

3.1
plain rail
zone comprising all parts of the rail located away from the rail ends and the welding zones

3.2
rail end
part of the rail located within the length of the fishplates

3.3
welding zone
weld material itself plus 20 mm from each end of the weld collar (for aluminothermic welding and electric arc welding) or upset (flash-butt welding)

Note 1 to entry: Any defect occurring in this zone is classified as a welding defect.

3.4
defective rail
rail which, for reasons of integrity or profile (including wear), requires management (examples in Annex A)

3.5
damaged rail
rail which is neither cracked nor broken, but which has other defects

3.6
cracked area
part of the rail with a localized material discontinuity

3.7
broken rail
rail which has separated into two or more pieces (see Figure 1 and Figure 2) or any 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 (see Figure 3)

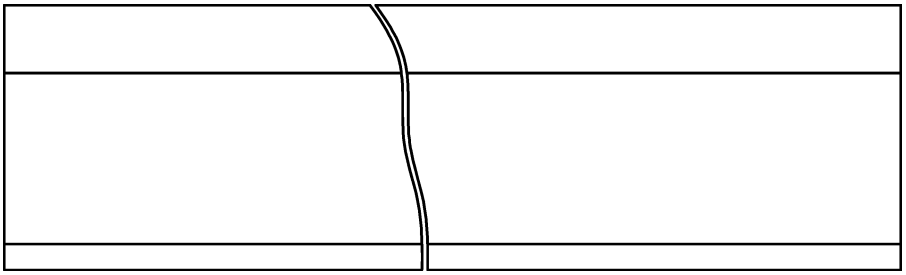
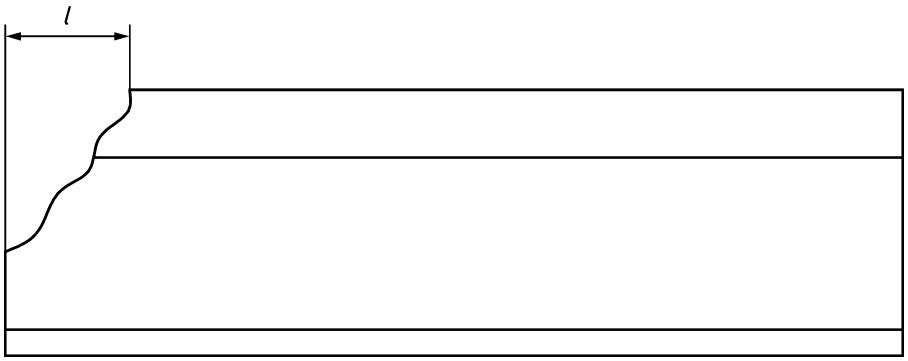
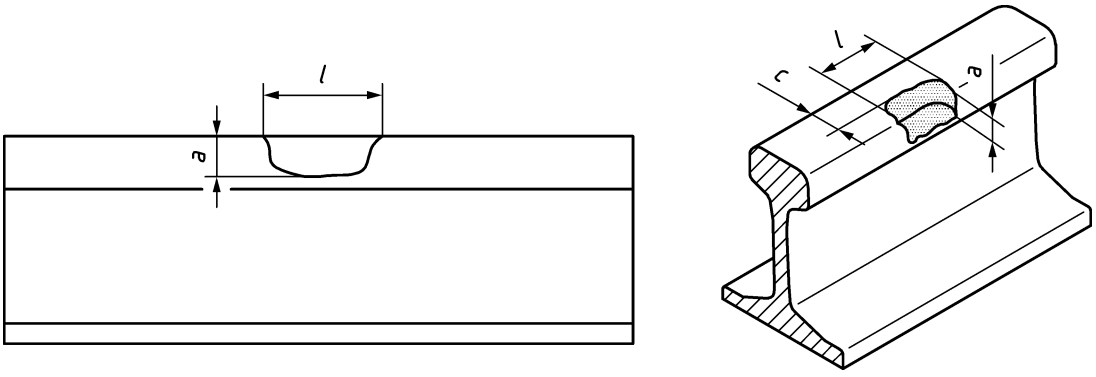


Figure 1 — Example of a broken rail separated in two pieces



Key
l horizontal length

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



Key
a vertical depth
l horizontal length
c non-cracked area

Figure 3 — Example of a broken rail with a gap

3.8
rail surface defect
defect which initiates on any of the surfaces of the rail

3.9
rail head surface defect
defect which initiates on or within 5 mm from the running surface of the rail

3.10
rail internal defect
defect which initiates from within the rail section but may grow to become visible on the rail surface

3.11
NDT Method
discipline applying a physical principle in non-destructive testing

[SOURCE: EN 13938-5:2004, definition 3.2]

EXAMPLE: Ultrasonic testing.

3.12
wheel/rail interaction
effect of rolling and sliding contact and direct forces from the vehicle wheels which can cause damage to the rail

3.13
environmental degradation
damage to the rail caused by external environmental factors

3.14
geometrical planes of the rail
see EN 16729-3:2018, 3.10, Figure 4

3.15
infrastructure manager [IM]
body or organisation responsible in particular for establishing and maintaining railway infrastructure, as well as for operating the control and safety systems

3.16
track maintenance engineer [TME]
engineer with “safety of line” responsibility for a defined track area