# Railway applications - Infrastructure - Flash butt welding of new rails - Part 1: R220, R260, R260Mn, R320Cr, R350HT, R350LHT, R370CrHT and R400HT grade rails in a fixed plant

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## NATIONAL FOREWORD

| | |
|---|---|
| See Eesti standard EVS-EN 14587-1:2018 sisaldab Euroopa standardi EN 14587-1:2018 ingliskeelset teksti. | This Estonian standard EVS-EN 14587-1:2018 consists of the English text of the European standard EN 14587-1:2018. |
| 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 05.12.2018. | Date of Availability of the European standard is 05.12.2018. |
| 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.

ICS 25.160.10, 93.100

EUROPEAN STANDARD

NORME EUROPÉENNE

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# EN 14587-1

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English Version

# Railway applications - Infrastructure - Flash butt welding of new rails - Part 1: R220, R260, R260Mn, R320Cr, R350HT, R350LHT, R370CrHT and R400HT grade rails in a fixed plant

Applications ferroviaires - Infrastructure - Soudage des rails neufs par étincelage - Partie 1: Rails de nuances R220, R260, R260Mn, R320Cr, R350HT, R350LHT, R370CrHT et R400HT dans une installation fixe

Bahnanwendungen - Infrastruktur - Abbrennstumpfschweißen von Schienen - Teil 1: Schweißen neuer Schienen der Stahlsorte R220, R260, R260Mn, R320Cr, R350HT, R350LHT, R370CrHT und R400HT in einer stationären Anlage

This European Standard was approved by CEN on 17 September 2018.

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

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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## European foreword

This document (EN 14587-1:2018) 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 June 2019, and conflicting national standards shall be withdrawn at the latest by June 2019.

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 supersedes EN 14587-1:2007.

This document is one of a series of three parts of the EN 14587 series:

— *Railway applications – Infrastructure - Flash butt welding of new rails – Part 1: R220, R260, R260Mn, R320Cr, R350HT, R350LHT, R370CrHT and R400HT grade rails in a fixed plant*;

— *Railway applications – Track - Flash butt welding of rails – Part 2: New R220, R260, R260Mn and R350HT grade rails by mobile welding machines at sites other than a fixed plant*;

— *Railway applications – Track - Flash butt welding of rails – Part 3: Welding in association with crossing construction*.

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 part of EN 14587 has five main topics:

a) requirements of a welding process;

b) procedure approval for a fixed plant;

c) approval of other rail profiles or grades;

d) approval of welding contractor;

e) weld production following approval.

# 1 Scope

This document specifies requirements for the approval of a welding process in a fixed plant, together with the requirements for subsequent welding production.

It applies to new Vignole railway rails R220, R260, R260Mn, R320Cr, R350HT, R350LHT, R370CrHT and R400HT grade rails of 46 kg/m and above, as contained in EN 13674-1, welded by a flash butt welding process in a fixed plant and intended for use on railway infrastructure.

This document applies to the welding of rails into welded strings.

# 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 13674-1, *Railway applications — Track — Rail — Part 1: Vignole railway rails 46 kg/m and above*

EN ISO 3452-1, *Non-destructive testing — Penetrant testing — Part 1: General principles (ISO 3452-1)*

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

EN ISO 7500-1:2018, *Metallic materials — Calibration and verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Calibration and verification of the force-measuring system (ISO 7500-1:2018)*

EN ISO 17638, *Non-destructive testing of welds — Magnetic particle testing (ISO 17638)*

# 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**
**as-welded condition**
rails that have been welded and trimmed only

**3.2**
**contractor**
company approved by a railway authority to provide staff and machinery to execute the production of flash butt welds in a fixed plant, which may include staff and machinery from within the railway authority

**3.3**
**die burn**
damage caused by localized overheating (arcing) on the surface of the rail due to poor contact between the rail and electrode during welding