Railway applications - Infrastructure - Aluminothermic welding of grooved rails

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NATIONAL FOREWORD

See Eesti standard EVS-EN 16771:2016 sisaldab Euroopa standardi EN 16771:2016 ingliskeelset teksti.	This Estonian standard EVS-EN 16771:2016 consists of the English text of the European standard EN 16771:2016.
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 09.11.2016.	Date of Availability of the European standard is 09.11.2016.
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

EUROPÄISCHE NORM

EN 16771

November 2016

ICS 25.160.10; 93.100

English Version

Railway applications - Infrastructure - Aluminothermic welding of grooved rails

Applications ferroviaires - Infrastructures - Soudage par aluminothermie des rails à gorge

Bahnanwendungen - Infrastruktur - Aluminothermisches Schweißen von Rillenschienen

This European Standard was approved by CEN on 15 July 2016.

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

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Ref. No. EN 16771:2016 E

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European foreword

This document (EN 16771:2016) 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of an identical text or by endorsement, at the latest by May 2017, and conflicting national standards shall be withdrawn at the latest by May 2017.

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Introduction

This standard defines the approval procedure for aluminothermic welding processes for grooved rail welding through laboratory tests of welds produced in a workshop. This laboratory approval will provide the railway authority with sufficient information for tests in the track if required.

1 Scope

This standard defines the laboratory tests and requirements for approval of an aluminothermic welding process using welds produced in workshop conditions.

It applies to the joining of new, grooved rails as described in EN 14811 of the same profile and steel grade. Welding of construction profiles and machined profiles are not covered in this standard.

Compliance with the requirements of this standard does not in itself ensure the suitability of a welding process for specific conditions of track and traffic.

The standard does not cover welds made between different rail sections, worn rails or different rail grades.

In addition to the definitive requirements, this standard also requires the items detailed in Clause 4 to be documented. For compliance with this standard, it is important that both the definitive requirements and the documented items be satisfied.

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.

EN 14811, *Railway applications – Track – Special purpose rail – Grooved and associated construction*

EN ISO 6506-1, *Metallic materials - Brinell hardness test - Part 1: Test method (ISO 6506-1)*

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

EN ISO 9712, *Non-destructive testing - Qualification and certification of NDT personnel (ISO 9712)*

3 Terms and definitions

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

3.1
fusion zone
area of the weld which has been in a liquid state and which is revealed by etching sections cut through the weld

3.2
visible heat-affected zone
HAZ
areas on either side of the fusion zone within the rail steel microstructure has been visibly modified by the heat of the welding process as revealed by Fry macro-etching

3.3
heat softened zone
part of the HAZ (Heat Affected Zone) characterised by a lower hardness

3.4
flashing
flat fin of weld metal located on the rail surface adjacent to the weld collar caused by gaps between the mould and the rail