

**Railway applications - Track - Aluminothermic welding  
of rails - Part 1: Approval of welding processes  
CONSOLIDATED TEXT**

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 14730-1:2006+A1:2010 sisaldab Euroopa standardi EN 14730-1:2006+A1:2010 ingliskeelset teksti.

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English Version

**Railway applications - Track - Aluminothermic welding of rails -  
Part 1: Approval of welding processes**

Applications ferroviaires - Voie - Soudage des rails par  
aluminothermie - Partie 1 : Approbation des procédés de  
soudage

Bahnanwendungen - Oberbau - Aluminothermisches  
Schweißen von Schienen - Teil 1: Zulassung der  
Schweißverfahren

This European Standard was approved by CEN on 12 June 2006 and includes Amendment 1 approved by CEN on 15 May 2010.

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## Foreword

This document (EN 14730-1:2006+A1:2010) 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of an identical text or by endorsement, at the latest by January 2011, and conflicting national standards shall be withdrawn at the latest by January 2011.

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 includes Amendment 1 approved by CEN on 15 May 2010.

This document supersedes EN 14730-1:2006.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** **A1**.

**A1** This document has been prepared under a mandate given to CEN/CENELEC/ETSI by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive 93/38/EEC. **A1**

The European Standard EN 14730 *Railway applications — Track — Aluminothermic welding of rails* is composed of two parts.

- *Part 1: Approval of welding processes;*
- *Part 2: Qualification of aluminothermic welders, approval of contractors and acceptance of welds.*

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

## Introduction

This standard defines the approval procedure for aluminothermic welding processes for 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, Vignole rails as described in EN 13674-1 of the same profile and steel grade.

Compliance with the requirements of this standard does not of 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, differently worn rails and 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 referenced documents are indispensable for the application 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 473, *Non destructive testing — Qualification and certification of NDT personnel — General principles*

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

EN ISO 6506-1, *Metallic materials — Brinell hardness test — Part 1: Test method (ISO 6506-1:2005)*

EN ISO 6507-1, *Metallic materials — Vickers hardness test — Part 1: Test method (ISO 6507-1:2005)*

EN ISO 7500-1:2004, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system (ISO 7500-1:2004)*

## 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 which rail steel microstructure has been visibly modified by the heat of the welding process as revealed by FRY macro-etching