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Del 2: Kvalificering av termitsvetsare, godkännande
av svetsentreprenörer och godkännande av
svetsskarvar

**Railway applications – Track – Aluminothermic
welding of rails –**
Part 2: Qualification of aluminothermic welders,
approval of contractors and acceptance of welds

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English Version

**Railway applications - Track - Aluminothermic welding of rails -
Part 2: Qualification of aluminothermic welders, approval of
contractors and acceptance of welds**

Applications ferroviaires - Voie - Soudage des rails par
aluminothermie - Partie 2 : Qualification des soudeurs par
aluminothermie, agréments des entreprises et réception
des soudures

Bahnwendungen - Oberbau - Aluminothermisches
Schweißen von Schienen - Teil 2: Qualifizierung
aluminothermischer Schweißer, Zertifizierung von
Betrieben und Abnahme von Schweißungen

This European Standard was approved by CEN on 12 June 2006.

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CEN members are the national standards bodies of Austria, Belgium, 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 United Kingdom.



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Foreword

This document (EN 14730-2:2006) 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of an identical text or by endorsement, at the latest by February 2007, and conflicting national standards shall be withdrawn at the latest by February 2007.

The purpose of this standard is to provide systems for successful delivery of aluminothermic welds in track.

This standard covers:

- qualifications of aluminothermic welders;
- approval of aluminothermic welding contractors;
- Acceptance of welds.

The minimum information requirements shown in Annex A and B are normative. The format is informative.

The standard contains "alternative requirements" in certain clauses, which enable a railway authority to select a position that will protect those principles which might be considered as "sovereign rights."

When installing aluminothermic welds in track across Europe, railway authorities, process suppliers and contractors shall comply with rules, regulations and codes of practice pertaining to the country where the work is executed.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, 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 United Kingdom.

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1 Scope

This standard applies to aluminothermic welds made on Vignole rails of 46 kg/m and above as contained in EN 13674-1:

This standard specifies:

- the system for training, testing and maintaining the skills of aluminothermic welders. It applies to those aluminothermic welding processes compliant with the requirements of EN 14730-1 "Railway applications – Track – Aluminothermic welding of rails – Part 1: Approval of welding processes". It requires that the system for training and testing of welders shall be approved by the relevant railway authority;
- the systems and requirements for the approval of aluminothermic welding contractors. It applies to those contractors using aluminothermic welding processes compliant with the requirements of EN 14730-1 "Railway applications – Track – Aluminothermic welding of rails – Part 1: Approval of welding processes" and who employ welders who are in possession of a valid Permit to Weld as defined in Clause 4 of this standard;
- the acceptance requirements for aluminothermic welds. It requires that weld inspectors are competent in aluminothermic weld inspection and are approved by the relevant railway authority. It covers the final inspection of aluminothermic welds for acceptance in track. It does not cover any previous inspections by welders or others.

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 14730-1, *Railway applications – Track – Aluminothermic welding of rails – Part 1: Approval of welding processes*

3 Terms and definitions

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

3.1 railway authority
either the railway regulator or the owner of a railway infrastructure or the custodian with a delegated responsibility for a railway infrastructure

3.2 aluminothermic welder
track operative trained and certified for the joining of rails by aluminothermic welding processes

3.3 welding contractor and welding subcontractor
company accepted in accordance with the requirements of a railway authority to execute the production of aluminothermic welds on that particular infrastructure

3.4 process supplier
company which provides an approved aluminothermic welding process accepted in accordance with EN 14730-1 and which is approved by the railway authority to supply consumables and tools for the execution of aluminothermic welds

3.5

employer

company that employs aluminothermic welders who are approved by a process supplier and railway authority, or by the railway authority itself

3.6

process manual

manual referred to and described in EN 14730-1, produced by the process supplier, identifying all the consumable materials and equipment used and the operating method to be followed for all steps of welding. The manual specifies the critical parameters of the welding process and their safe bounds

3.7

training establishment

welder training organisation or centre approved by the railway authority

4 Qualification of aluminothermic welders

4.1 Initial training and issue of a Diploma in Aluminothermic Welding of Rails

The initial training and testing shall be conducted in a training establishment.

The process supplier shall provide the process manual and determine the duration of training and the minimum number of welds to be made.

The initial training shall be carried out in accordance with the supplier's process manual. In addition to the welding processes the initial training shall include as a minimum:

- basic safety items relating to the process;
- cause and effect of operating outside of the correct processes;
- rail identification;
- basic grinding;
- visual weld inspection.

The training shall conclude with a practical and theoretical test or tests so designed to confirm the trainees' ability to carry out the aluminothermic welding of rails in accordance with the requirements of that supplier's process manual.

Upon the successful completion of training and testing the welder shall be issued with a Diploma in Aluminothermic Welding of Rails by the training establishment. The minimum information to be given on the diploma is:

- Full name of the welder;
- Date of birth;
- Date of examination;
- Number of diploma;
- Process supplier;

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- Skill modules;
- Extra skills;
- Cutting method(s);
- Training establishment;
- Signature and name of the examiner.

A specimen Diploma in Aluminothermic Welding of Rails showing the format is given in informative Annex A.

The possession of the Diploma in Aluminothermic Welding of Rails shall be a prerequisite to applying for the Permit to Weld.

Diplomas in Aluminothermic Welding of Rails shall remain the property of the welder.

4.2 Permit to Weld

The Permit to Weld shall remain the property of the railway authority.

The validity of the Permit to Weld shall not exceed 5 years.

The railway authority shall define any relevant conditions relating to the training, testing, re-training, re-testing and the validity and renewal of the Permit to Weld as well as the extension of the welder's skill.

The subjects to be included in the training for a Permit to Weld shall be defined by the railway authority. The employer shall be responsible for ensuring that the training of aluminothermic welders to obtain a Permit to Weld is in accordance with the requirements of the railway authority.

Upon successful completion of the requirements and demonstration of the necessary competencies, which shall include railway authority tests if required, the welder shall be issued with a Permit to Weld by the relevant railway authority upon receipt of the relevant qualifying information from the employer. The issue of the Permit to Weld shall be via the welder's employer who shall maintain up to date records.

The Permit to Weld shall include a unique identification relating to the particular welder and the employer, and shall contain as a minimum:

- Employer;
- Certificate number;
- Welder's full name;
- Stamp number;
- Photo of the welder;
- Issue date;
- Expiry date;
- Line categories;
- Process supplier;
- Process;