Irish Standard
I.S. EN 15689:2009

Railway applications - Track - Switches and crossings - Crossing components made of cast austenitic manganese steel

I.S. EN 15689:2009

Incorporating amendments/corrigenda issued since publication:

This document replaces:	*This document is based on:* EN 15689:2009	*Published:* 25 November, 2009

This document was published under the authority of the NSAI and comes into effect on:
17 December, 2009

ICS number:
93.100

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I.S. EN 15689:2009

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 15689

November 2009

ICS 93.100

English Version

Railway applications - Track - Switches and crossings - Crossing components made of cast austenitic manganese steel

Applications ferroviaires - Voie - Appareils de voie - Coeurs ou composants de coeur en acier moulé au manganèse

Bahnanwendungen - Oberbau - Weichen und Kreuzungen - Gegossener austenitischer Manganstahl für Herzstückbauteile

This European Standard was approved by CEN on 10 October 2009.

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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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, 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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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Ref. No. EN 15689:2009: E

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Foreword

This document (EN 15689:2009) 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of an identical text or by endorsement, at the latest by May 2010, and conflicting national standards shall be withdrawn at the latest by May 2010.

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 European Standard is complementary to the series of standards EN 13232 “*Railway applications — Track — Switches and crossings*”, which covers the design and quality of switches and crossings in flat bottomed rail.

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, 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.

1 Scope

The scope of this European Standard is:

— to establish material requirements for cast austenitic manganese steel for fixed crossings and cradles for crossings with moveable parts designed to be welded or bolted to rails;

— to formulate codes of practice for inspection, testing of un-machined and machined heat-treated castings;

— to list the methods by which crossings should be identified and traced;

— to define limits of weld rectification by the supplier;

— special requirements for pre-hardened crossings.

Geometrical aspects, as machining tolerances and inspection of finished crossings are covered in EN 13232-6 and EN 13232-7 and therefore not in this European Standard.

This European Standard specifies the minimum requirements for cast manganese crossing components. Special applications (for instance tram systems) can require different demands in certain paragraphs and need to be agreed between customer and supplier.

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 444:1994, *Non-destructive testing — General principles for the radiographic examination of metallic materials using X- and gamma-rays*

EN 462-3:1996, *Non-destructive testing — Image quality of radiographs — Part 3: Image quality classes for ferrous metals*

EN 473:2008, *Non destructive testing — Qualification and certification of NDT personnel — General principles*

EN 571-1, *Non destructive testing — Penetrant testing — Part 1: General principles*

EN 1370, *Founding — Surface roughness inspection by visual/tactile comparators*

EN 1371-1, *Founding — Liquid penetrant inspection — Part 1: Sand, gravity die and low pressure die castings*

EN 10204, *Metallic products — Types of inspection documents*

EN 13232-1:2003, *Railway applications — Track — Switches and crossings — Part 1: Definitions*

EN 13232-6:2005, *Railway applications — Track — Switches and crossings — Part 6: Fixed common and obtuse crossings*

EN 13232-7:2006, *Railway applications — Track — Switches and crossings — Part 7: Crossings with moveable parts*

EN ISO 11970, *Specification and approval of welding procedures for production welding of steel castings (ISO 11970:2001)*