Irish Standard
I.S. EN 16482:2014

Founding - Continuous cast iron bars

I.S. EN 16482:2014

Incorporating amendments/corrigenda/National Annexes issued since publication:

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EUROPEAN STANDARD **EN 16482**

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English Version

Founding - Continuous cast iron bars

Fonderie - Barres de fonte par coulée continue

Gießereiwesen - Gusseisen-Strangguss

This European Standard was approved by CEN on 28 February 2014.

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Foreword

This document (EN 16482:2014) has been prepared by Technical Committee CEN/TC 190 “Foundry technology”, 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of an identical text or by endorsement, at the latest by December 2014 and conflicting national standards shall be withdrawn at the latest by December 2014.

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.

Within its programme of work, Technical Committee CEN/TC 190 requested CEN/TC 190/WG 7 “Spheroidal graphite, silicon molybdenum and ausferritic cast iron” to prepare the following standard:

EN 16482, *Founding — Continuous cast iron bars*

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

The European Standards EN 1561 [4] and EN 1563 [5] classify grey cast irons and spheroidal graphite cast irons respectively, which are cast in sand moulds or moulds of comparable thermal behaviour.

This European Standard classifies grey cast iron and spheroidal graphite cast iron bars, which are produced by the continuous casting process.

Due to the high cooling rate during solidification and further cooling, both graphite and matrix structure differ from those obtained by sand casting and consequently the mechanical properties in relation to section thickness [8], [9].

The mechanical properties of continuous cast iron bars are evaluated on machined test pieces prepared from samples cut from the bars.

However, for many applications tensile strength or hardness are not the only interesting or determining properties. Other mechanical or physical properties can be decisive for the use of grey cast iron or spheroidal graphite cast iron, for example: thermal capacity, thermal diffusivity, damping capacity, thermo-cycle fatigue and toughness.

Additional technical data for grey cast irons is given in EN 1561 and for spheroidal graphite cast irons in EN 1563 and Annex D of this European Standard.

1 Scope

This European Standard defines the grades of grey cast iron and spheroidal graphite cast iron bars, which have been produced by the continuous casting process.

This European Standard specifies the characterizing properties of grey cast iron bars by either:

a) the tensile strength measured on machined test pieces prepared from samples cut from the bars, or

b) the hardness measured on the bars.

If agreed by the manufacturer and the purchaser, the combination of both tensile strength from option a) and hardness from option b) may be specified.

This European Standard specifies the characterizing properties of spheroidal graphite cast iron bars by the tensile strength measured on machined test pieces prepared from samples cut from the bars.

This European Standard specifies 4 grades of grey cast iron and 14 grades of spheroidal graphite cast iron by a classification based on tensile strength and 4 grades of grey cast iron by a classification based on Brinell hardness.

This European Standard specifies also the straightness of the bars.

This European Standard does not cover technical delivery conditions for iron castings (see EN 1559-1 [1] and EN 1559-3 [2]).

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 10204, *Metallic products - Types of inspection documents*

EN ISO 945-1, *Microstructure of cast irons - Part 1: Graphite classification by visual analysis (ISO 945-1)*

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

EN ISO 6892-1, *Metallic materials - Tensile testing - Part 1: Method of test at room temperature (ISO 6892-1)*

3 Terms and definitions

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

3.1
grey cast iron
cast material, mainly iron and carbon based, carbon being present mainly in the form of flake (lamellar) graphite particles

Note 1 to entry: Grey cast iron is also known as flake graphite cast iron, and less commonly as lamellar graphite cast iron.

[SOURCE: EN 1561:2011, 3.1]