Metallivalu. Vermikulaarmalm

Founding - Compacted (vermicular) graphite cast irons

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 16079:2011 sisaldab Euroopa standardi EN 16079:2011 ingliskeelset teksti.	This Estonian standard EVS-EN 16079:2011 consists of the English text of the European standard EN 16079:2011.
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 23.11.2011.	Date of Availability of the European standard is 23.11.2011.
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.

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EUROPEAN STANDARD

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English Version

Founding - Compacted (vermicular) graphite cast irons

Fonderie - Fontes à graphite vermiculaire (compacté)

Gießereiwesen - Gusseisen mit Vermiculargraphit

This European Standard was approved by CEN on 1 October 2011.

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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-CENELEC Management Centre has the same status as the official versions.

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

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Foreword

This document (EN 16079:2011) 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of an identical text or by endorsement, at the latest by May 2012, and conflicting national standards shall be withdrawn at the latest by May 2012.

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 5 "Grey cast iron and compacted graphite cast iron" to prepare EN 16079.

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 European Standard classifies compacted (vermicular) graphite cast irons (CGI), in accordance with the mechanical properties of the material.

The properties of compacted (vermicular) graphite cast irons depend on their graphite and matrix microstructure.

The mechanical properties of the material can be evaluated on machined test pieces prepared from

— separately cast samples,

— side by side cast samples,

— cast-on samples or

— samples cut from a casting.

Annex A (informative) gives additional information on properties and typical applications of compacted (vermicular) graphite cast irons.

1 Scope

This European Standard defines the grades and the corresponding requirements for compacted (vermicular) graphite cast irons.

This European Standard specifies 5 grades of compacted (vermicular) graphite cast iron by a classification based on mechanical properties measured on machined test pieces prepared from cast samples.

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

EN ISO 945-1, *Microstructure of cast irons — Part 1: Graphite classification by visual analysis (ISO 945-1:2008)*

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

EN ISO 6892-1, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature (ISO 6892-1:2009)*

3 Terms and definitions

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

3.1
compacted (vermicular) graphite cast iron
cast material, iron and carbon based, the carbon being present mainly in the form of compacted (vermicular) graphite particles that appear vermicular on a two-dimensional plane of polish, the graphite particles being embedded in a matrix consisting of ferrite, ferrite/pearlite, or pearlite

3.2
graphite modification treatment
process that brings the liquid iron into contact with a substance to produce graphite in the predominantly compacted (vermicular) form during solidification

3.3
vermicularity
percentage of graphite particles that are of form III according EN ISO 945-1

3.4
cast sample
quantity of material cast to represent the cast material, including separately cast sample, side by side cast sample and cast-on sample

3.5
separately cast sample
sample cast in a separate sand mould under representative manufacturing conditions and material grade

3.6
side-by-side cast sample
sample cast in the mould alongside the casting, with a joint running system