



SLOVENSKI STANDARD
SIST EN 1562:1998/A1:2006
01-september-2006

Livarstvo – Temprana litina

Founding - Malleable cast irons

Gießereiwesen - Temperguss

Fonderie - Fonte malléable

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Ta slovenski standard je istoveten z: EN 1562:1997/A1:2006

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ICS:

77.140.80

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ICS 77.080.10

English Version

Founding - Malleable cast irons

Fonderie - Fonte malléable

Gießereiwesen - Temperguss

This amendment A1 modifies the European Standard EN 1562:1997; it was approved by CEN on 27 April 2006.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This amendment 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 Central Secretariat has the same status as the official versions.

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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EUROPEAN COMMITTEE FOR STANDARDIZATION
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 1562:1997/A1:2006) has been prepared by Technical Committee CEN/TC 190 “Foundry technology”, the secretariat of which is held by DIN.

This Amendment to the European Standard EN 1562:1997 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2006, and conflicting national standards shall be withdrawn at the latest by December 2006.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of a EU Directive.

For relationship with EU Directive, see informative Annex ZA, which is an integral part of this document.

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 Modification to the Introduction

Add as last sentence:

Malleable cast iron can be used for pressure equipment, e.g. for

- fittings (threaded, fittings with compression ends) for compressed air, water (hot and cold), oil, steam, gas;
- industrial valves (bodies, bonnets, covers), diaphragm valves.

The suitable material grades for pressure applications and the conditions for their use are given in specific product or application standards.

For the design of pressure equipment, specific design rules apply.

2 Modification to Clause 2 Normative references

Amend the standard paragraph to read as follows:

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.

Add two new items:

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EN 10204:2004, *Metallic products — Types of inspection documents*

EN 10045-1:1990, *Metallic materials — Charpy impact test — Part 1: Test method*

3 Add Clause 9.4 Impact test

9.4 Impact test

9.4.1 Impact test using Charpy V-notched test pieces

When requested by the purchaser and agreed by the time of acceptance of the order, the impact test shall be carried out on three Charpy impact test pieces (see Figure 2) obtained from separately cast samples in accordance with EN 10045-1 at (23 ± 5) °C using test equipment with available energy compatible with the properties of the malleable cast iron being tested.

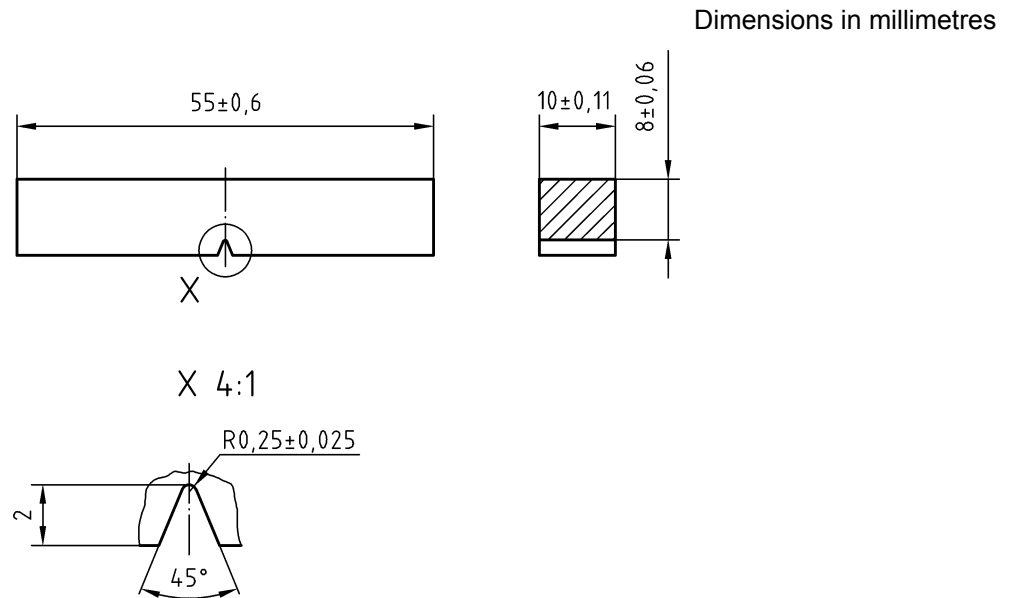


Figure 2 — Charpy V-notched test piece

9.4.2 Impact test using unnotched test pieces

When requested by the purchaser and agreed by the time of acceptance of the order, the impact test shall be carried out at (23 ± 5) °C on three unnotched, unmachined (as-cast surface on the sample face) test pieces (see Figure 3) obtained from separately cast samples corresponding to EN 10045-1 using test equipment with available energy compatible with the properties of the malleable cast iron being tested.

If not otherwise agreed, the unnotched test shall be carried out with the testing parameters corresponding to EN 10045-1:1990, Clause 7. The working range of the pendulum impact machine shall be 300 J.

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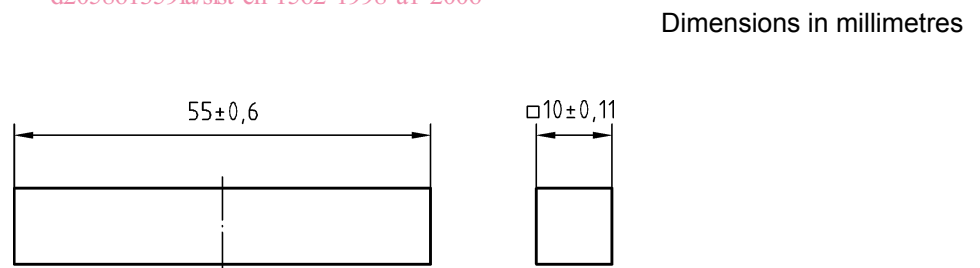


Figure 3 — Unnotched test piece

4 Add Clause 11 Inspection documentation

11 Inspection documentation

When ordering material for pressure equipment applications, the equipment manufacturer has the obligation to request appropriate inspection documentation according to EN 10204:2004, Annex ZA, affirming conformity to the specification for the material contained in this European Standard.

For other applications, when requested by the purchaser and agreed with the manufacturer, the manufacturer shall issue for the products the appropriate inspection document in accordance with EN 10204.

5 Add new Annex E

(see text)

6 Add Annex ZA

(see text)

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Annex E (normative)

Material grades suitable for pressure equipment

E.1 General

This Annex shall be taken into account when ordering components from malleable cast iron for pressure equipment which fall into the scope of the PED¹⁾.

E.2 Material properties

For applications under pressure, sufficient ductility and toughness is required in many cases; additionally, other characteristic properties may be required. Several material grades can be used, provided that an appropriate design and dimensioning is chosen.

The properties of these material grades at $(23 \pm 5) ^\circ\text{C}$ shall be as given in Tables E.1 and E.2.

To optimize impact resistance of all grades specified in Tables E.1 and E.2, phosphorous content should not exceed 0,10 %.

Table E.1 — Mechanical properties of whiteheart malleable cast iron at $(23 \pm 5) ^\circ\text{C}$

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Material grade	Impact resistance at $(23 \pm 5) ^\circ\text{C}$		
	V-notched (Charpy)	unnotched	
	min.	min.	max. (For information only)
EN-GJMW-350-4	—	30	80
EN-GJMW-360-12	14	130	180
EN-GJMW-400-5	—	40	90
EN-GJMW-450-7	10	80	130
EN-GJMW-550-4	—	30	80

Values in Joule

NOTE Tensile properties are specified in Table 1.
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1) PED: Directive 97/23/EC of the European Parliament and of the council (Pressure Equipment Directive); see Annex 1 Essential Safety Requirements, Clause 4 Materials, subclause 4.1 Materials for pressurized parts.