

Founding — Technical conditions of delivery —

Part 6: Additional requirements for zinc alloy castings

The European Standard EN 1559-6:1998 has the status of a
British Standard

ICS 77.150.60

National foreword

This British Standard is the English language version of EN 1559-6:1998.

The UK participation in its preparation was entrusted to Technical Committee NFE/8, Zinc and zinc alloys, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 4, an inside back cover and a back cover.

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English version

Founding — Technical conditions of delivery — Part 6: Additional requirements for zinc alloy castings

Fonderie — Conditions techniques de fourniture —
Partie 6: Spécifications complémentaires pour les
pièces moulées en alliage de zinc

Gießereiwesen — Technische Lieferbedingungen —
Teil 6: Zusätzliche Anforderungen an Gußstücke aus
Zinklegierungen

This European Standard was approved by CEN on 22 October 1998.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 209, Zinc and zinc alloys, the Secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by May 1999, and conflicting national standards shall be withdrawn at the latest by May 1999.

This European Standard is one of several which specify technical delivery conditions for castings. The other standards in this series are:

EN 1559-1, *Founding — Technical conditions of delivery — Part 1: General.*

prEN 1559-2, *Founding — Technical conditions of delivery — Part 2: Additional requirements for steel castings.*

EN 1559-3, *Founding — Technical conditions of delivery — Part 3: Additional requirements for iron castings.*

prEN 1559-4, *Founding — Technical conditions of delivery — Part 4: Additional requirements for aluminium alloy castings.*

EN 1559-5, *Founding — Technical conditions of delivery — Part 5: Additional requirements for magnesium alloy castings.*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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Introduction

CEN/TC 209, Zinc and zinc alloys, has prepared a product standard covering zinc alloy castings. In order to assist manufacturers and purchasers to prepare proper contractual arrangements and prevent misunderstanding, CEN/TC 190, Foundry technology, approved the preparation of a series of standards covering technical delivery conditions. These have been prepared as separate parts.

This European Standard covers the additional technical delivery conditions for zinc alloy castings, e.g. optional information, manufacturing process, welding operation, additional requirements regarding condition of the casting, test methods.

This European Standard cannot be used alone for compiling a specification for ordering and supplying zinc alloy castings, but as a complement to EN 1559-1.

The following symbols are used in this standard:

- clauses and subclauses preceded by ■ indicates no additional requirements to EN 1559-1;
- subclauses preceded by •• indicates requirements that are optional, which can be agreed at the time of ordering;
- clauses and subclauses without a symbol are mandatory.

1 Scope

This part of EN 1559 applies to castings made from zinc alloys produced by sand casting, permanent mould casting, pressure die casting, centrifugal casting, continuous casting or investment casting.

This standard specifies the additional technical delivery conditions for zinc alloy castings.

This standard does not apply to ingots, bars, billets (or other shapes) for further reprocessing, such as remelting, grinding or extrusion.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

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

EN 1371-2, *Founding — Liquid penetrant inspection — Part 2: Investment castings*.

EN 1559-1, *Founding — Technical conditions of delivery — Part 1: General*.

EN 1774, *Zinc and zinc alloys — Alloys for foundry purposes — Ingots and liquid*.

prEN 12681, *Founding — Radiographic inspection*.

EN 12844, *Zinc and zinc alloys — Castings — Specifications*.

3 Definitions

See EN 1559-1, EN 1774 and EN 12844.

4 ■ Information to be supplied by the purchaser

5 Designations

The designation of zinc alloy castings by alloy number or by alloy short designation shall be in accordance with EN 12844. This designation shall be used on drawings, in the order and on the product according to EN 12844.

The designation describes the zinc alloy based on chemical composition.

NOTE Designations of cast zinc alloys are given in EN 1774.

6 Manufacture

6.1 ■ Manufacturing process

6.2 Welding operations

6.2.1 ■ General

6.2.2 •• *Production welding*

In addition to EN 1559-1, welding shall not be permitted for pressure die castings, but may be used for other types of castings.

7 Requirements

7.1 ■ General

7.2 ■ Material

7.3 Casting

7.3.1 ■ *Chemical composition*

7.3.2 ■ *Mechanical properties*

7.3.3 *Non-destructive testing*

7.3.3.1 •• EN 1559-1 shall apply with the following additions.

— The liquid penetrant inspection shall be carried out in accordance with either EN 1371-1 or EN 1371-2, as appropriate.

— The radiographic inspection shall be carried out in accordance with prEN 12681.

7.3.3.2 The surface condition of the casting shall be agreed either at the time of ordering or shall correspond to the initial sample.

7.3.3.3 For pressure die castings, unacceptable external and internal discontinuities shall lead to a rejection of the part.

7.3.3.4 ■

7.3.4 ■ *Condition of the casting*

7.3.5 ■ *Mass of the casting*

7.3.6 •• *Additional requirements regarding the condition of the casting*

In order to eliminate leaks in castings it is possible with the approval of the purchaser to use impregnation procedures. The impregnation medium and method, maximum permitted size of discontinuities and retest procedures shall be agreed between the manufacturer and the purchaser.

If applicable, density evaluation by weight measurements in air and water to agreed criteria shall be used to estimate the soundness of the casting.

8 Testing and documents on material testing

8.1 ■ *General*

8.2 *Inspection and testing*

See EN 1559-1, EN 1774 and EN 12844.

8.3 *Test unit sampling*

8.3.1 ■ *Formation of test units*

8.3.2 ■ *Size of test units*

8.3.3 ■ *Inspection frequency*

8.4 *Samples*

See EN 1559-1, EN 1774 and EN 12844.

8.5 *Test methods*

See EN 1559-1, EN 1774 and EN 12844.

8.6 ■ *Invalidation of tests*

8.7 Retests

8.7.1 ■ *General*

8.7.2 *Individual values (non-sequential tests)*

EN 1559-1 shall apply with the following addition.

If there is a disagreement between the manufacturer and the purchaser on the chemical composition of a test unit the manufacturer shall re-check the chemical composition on the original test piece, whenever possible. If the disagreement persists a referee analysis shall be carried out by a mutually acceptable laboratory.

8.7.3 ■ *Sequential tests*

8.8 ■ *Sorting and reprocessing*

9 ■ *Marking*

10 ■ *Packaging and surface protection*

11 ■ *Complaints*

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