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ILNAS-EN 598:2007

Ductile iron pipes, fittings, accessories and their joints for sewerage applications - Requirements and test methods

Rohre, Formstücke, Zubehörteile aus
duktilem Gusseisen und ihre
Verbindungen für die Abwasser-
Entsorgung - Anforderungen und

Tuyaux, raccords et accessoires en fonte
ductile et leurs assemblages pour
l'assainissement - Prescriptions et
méthodes d'essai

10/2007



National Foreword

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English Version

Ductile iron pipes, fittings, accessories and their joints for sewerage applications - Requirements and test methods

Tuyaux, raccords et accessoires en fonte ductile et leurs
assemblages pour l'assainissement - Prescriptions et
méthodes d'essai

Rohre, Formstücke, Zubehörteile aus duktilem Gusseisen
und ihre Verbindungen für die Abwasser-Entsorgung -
Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 11 August 2007.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (EN 598:2007) has been prepared by Technical Committee CEN/TC 203 “Cast iron pipes, fittings and their joints”, 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of an identical text or by endorsement, at the latest by April 2008, and conflicting national standards shall be withdrawn at the latest by July 2009.

This document supersedes EN 598:1994.

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 EU Construction Products Directive (89/106/EEC).

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

This European Standard is in conformity with the general requirements already established by CEN/TC 165 in the field of sewerage.

Annex ZA includes the requirements of the mandate given under the EU Construction Products Directive (89/106/EEC). Only if the requirements specified in Annex ZA are met, the CE marking will be effected.

For reasons of conformity with mandate M/131 “Pipes, tanks and ancillaries not in contact with water intended for human consumption”, EN 598:1994 has been revised by extension with Annex ZA (see Resolution CEN/BT 113/1994 and CEN/BT 63/1996) and Clause 9 for the evaluation of conformity.

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 United Kingdom.

1 Scope

This European Standard specifies the requirements and associated test methods applicable to ductile iron pipes, fittings, accessories and their joints for the construction of drains and sewers outside buildings:

- operating without pressure (gravity sewerage), or with positive or negative pressure (see Table 5);
- to be installed below or above ground;
- to convey surface water, domestic waste water and certain types of industrial effluents, either in separate systems or in combined systems.

This European Standard applies to pipes, fittings and accessories which are:

- manufactured with socketed, flanged or spigot ends;
- normally delivered externally and internally coated;
- suitable for continuous fluid temperatures between 0 °C excluding frost, and 45 °C for DN ≤ 200 or 35 °C for DN > 200, according to EN 476;
- not intended for use in areas subject to reaction to fire regulations.

NOTE 1 This does not preclude special arrangements for the products to be used at higher temperatures.

This European Standard covers pipes, fittings and accessories cast by any type of foundry process or manufactured by fabrication of cast components, as well as corresponding joints, of a size range extending from DN 80 to DN 2000 inclusive.

This European Standard specifies requirements for materials, dimensions and tolerances, mechanical properties and standard coatings of ductile iron pipes and fittings. It also gives performance requirements for all components including joints. Joint design and gasket shapes are outside the scope of this European Standard.

NOTE 2 In this European Standard, all pressures are relative pressures, expressed in bars (100 kPa = 1 bar).

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 applies (including any amendments).

EN 196-1, *Methods of testing cement — Part 1: Determination of strength*

EN 545, *Ductile iron pipes, fittings, accessories and their joints for water pipelines — Requirements and test methods*

EN 681-1, *Elastomeric seals — Materials requirements for pipe joint seals used in water and drainage applications — Part 1: Vulcanised rubber*

EN 1092-2, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN designated — Part 2: Cast iron flanges*

EN 10002-1, *Metallic materials — Tensile testing — Part 1: Method of test at ambient temperature*

EN 14901, *Ductile iron pipes, fittings and accessories — Epoxy coating (heavy duty) of ductile iron fittings and accessories — Requirements and test methods*

EN ISO 4016, *Hexagon head bolts — Product grade C (ISO 4016:1999)*

EN ISO 4034, *Hexagon nuts — Product grade C (ISO 4034:1999)*

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

EN ISO 9001:2000, *Quality management systems — Requirements (ISO 9001:2000)*

EN ISO 7091, *Plain washers — Normal series — Product grade C (ISO 7091:2000)*

3 Terms and definitions

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

3.1

ductile iron

cast iron used for pipes, fittings and accessories in which graphite is present substantially in spheroidal form

3.2

pipe

casting of uniform bore, straight in axis, having either socket, spigot or flanged ends, except for flanged-socket pieces, flanged-spigot pieces and collars which are classified as fittings

3.3

fitting

casting other than a pipe which allows pipeline deviation, change of direction or bore. In addition flanged-socket pieces, flanged-spigot pieces and collars are also classified as fittings

3.4

accessory

any casting other than a pipe or fitting which is used in a pipeline, for example:

- inspection chambers (see 3.5);
- manholes (see 3.6);
- glands and bolts for mechanical flexible joints (see 3.15);
- glands, bolts and locking rings for restrained flexible joints (see 3.16);
- adjustable flanges and flanges to be welded or screwed

NOTE Valves of all types are not covered by the term accessory.

3.5

inspection chamber

component of a discharge system, of a drain or of a sewer providing access from the ground surface for inspection and maintenance equipment

[EN 476:1997]

3.6

manhole

component of a sewer of sufficient size to provide access from the ground surface for inspection and maintenance operations by personnel and equipment

[EN 476:1997]