



SLOVENSKI STANDARD

SIST EN 1092-2:1998

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Prirobnice in prirobnični spoji - Okrogle prirobnice za cevi, ventile, vezne elemente (fitinge) in dodatke z oznako PN - 2. del: Prirobnice iz litega železa

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

Flansche und ihre Verbindungen - Runde Flansche für Rohre, Armaturen, Formstücke und Zubehörteile, nach PN bezeichnet - Teil 2: Gußeisenflansche

Brides et leurs assemblages - Brides circulaires pour tuyaux, appareil de robinetterie, raccords et accessoires, désignées PN - Partie 2: Brides en fonte

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ICS:

23.040.60 Prirobnice, oglavki in spojni elementi Flanges, couplings and joints

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en

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EUROPEAN STANDARD

EN 1092-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 1997

ICS 23.040.60

Descriptors: industrial piping, pipe flanges, cast iron, spheroidal graphite cast iron, malleable cast iron, unalloyed cast iron, designation, dimensions, dimensional tolerances, specifications, surface condition, marking

English version

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

Brides et leurs assemblages
circulaires pour tuyaux, appareil de robinetterie, raccords et accessoires désignées PN - Partie 2: Brides en fonte

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This European Standard was approved by CEN on 1996-12-29. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a 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.

The European Standards exist 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

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

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

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Foreword

This European Standard has been prepared Technical Committee CEN/TC 74 'Flanges and their joints', the secretariat of which is held by DIN.

EN 1092 will consist of the following six parts:

- Part 1 : Steel flanges
- Part 2 : Cast iron flanges
- Part 3 : Copper alloy flanges
- Part 4 : Aluminium alloy flanges
- Part 5 : Flanges in other metallic materials
- Part 6 : Non-metallic flanges

This standard is related to ISO 7005-2 : 1988 and ISO 2531 : 1991 in respect of flanges having the same PN designation. The types of flanges and their mating dimensions are compatible with those flanges of the same DN and PN given in ISO 7005-2 : 1988 and ISO 2531 : 1991.

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The mating dimensions of the flanges of this standard are compatible with those flanges of other materials in accordance with the other parts of EN 1092.

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 October 1997, and conflicting national standards shall be withdrawn at the latest by October 1997.

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.

Introduction

The product which is in permanent or temporary contact with water, intended for human consumption, does not adversely affect the quality of the drinking water and does not contravene the EC Directives and EFTA Regulations on the quality of drinking water.

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1 Scope

This standard specifies requirements for circular flanges made from ductile, grey and malleable cast iron for DN 10 to DN 4000 and PN 2,5 to PN 63. (See 4.1 and 4.2).

This standard specifies the types of flanges and their facings, dimension and tolerances, bolt sizes, surface finish of jointing faces, marking, testing, quality assurance and materials together with associated pressure/temperature (p/T) ratings.

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 revision 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 545	Ductile iron pipes, fittings, accessories and their joints for water pipelines - Requirements and test methods <small>SIST EN 1092-2:1998</small>
prEN 1092-1 : 1994	Flanges and their joints - Circular flanges for pipes, valves, fittings and accessories, PN designated Part 1: Steel flanges <small>https://standards.iteh.ai/catalog/standards/sist/5716e556-c13b-40d9-9a66-9fcc9a804d5/sist-en-1092-2-1998</small>
EN 1333 : 1996	Pipework components - Definition and selection of PN
EN ISO 6708 : 1995	Pipework components - Definition and selection of DN (nominal size) (ISO 6708 : 1995)
EN ISO 9002 : 1994	Quality systems - Model for quality assurance in production, installations and servicing (ISO 9002 : 1994)
ISO 185 : 1988	Classification of grey cast iron
ISO 468 : 1982	Surface roughness - Parameters, their values and general rules specifying requirements
ISO 887 : 1983	Plain washers for metric bolts, screws and nuts - General plan

ISO 2531 : 1991	Ductile iron pipes, fittings and accessories for pressure pipelines
ISO 2632-3 : 1979	Roughness comparison specimens
ISO 5458 : 1987	Technical drawings - Geometrical tolerancing - Positional tolerancing
ISO 5922 : 1981	Malleable cast iron
ISO 7005-2 : 1988	Cast iron flanges

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3 Definitions

For the purposes of this standard, the following definitions apply:

3.1 flange : Flat circular end of a pipe component extending perpendicular to its axis, with bolt holes equally spaced on a circle (see figure 1).

NOTE : A flange may be fixed (i.e. integrally cast, screwed or welded on) or adjustable; an adjustable flange comprises a ring, in one or several parts assembled together, which bears on an end joint hub and can be freely rotated around the pipe axis before jointing.

3.2 DN (Nominal size) : See EN ISO 6708 : 1995.

NOTE: A numerical designation of size which is common to all components in a piping system. It is a convenient round-number for reference purposes and is only loosely related to manufacturing dimensions.

3.3 PN : See EN 1333 : 1996.

NOTE: A numerical designation of flanged components which is a convenient round-number for reference purposes. All components of the same nominal size DN designated by the same PN have compatible mating dimensions.

3.4 ductile iron : A cast iron in which graphite is present substantially in spheroidal form.

3.5 grey iron : A cast iron in which graphite is present substantially in lamellar form.

3.6 malleable iron : A cast iron in which graphite is present substantially in nodular form (temper carbon), and can be partially or wholly decarburized.

3.7 joint : A connection between the flanged ends of piping systems components in which a gasket is used to effect a seal.

4 Designation and types

4.1 Range of DN

DN 10 - DN 15 - DN 20 - DN 25 - DN 32 - DN 40 - DN 50 - DN 60 - DN 65 - DN 80 - DN 100 - DN 125 - DN 150 - DN 200 - DN 250 - DN 300 - DN 350 - DN 400 - DN 450 - DN 500 - DN 600 - DN 700 - DN 800 - DN 900 - DN 1000 - DN 1100 - DN 1200 - DN 1400 - DN 1500 - DN 1600 - DN 1800 - DN 2000 - DN 2200 - DN 2400 - DN 2600 - DN 2800 - DN 3000 - DN 3200 - DN 3400 - DN 3600 - DN 3800 - DN 4000.

The range of DN applicable to each flange type and to each PN shall be as specified in tables 2 to 4 as appropriate.

4.2 Range of PN designations

PN 2,5 - PN 6 - PN 10 - PN 16 - PN 25 - PN 40 - PN 63

4.3 Types of flanges

Figure 1 illustrates flanges identified according to type:

- 05 : blank flange
- 11 : weld-neck flange
- 12 : hubbed slip-on flange for welding
- 13 : hubbed threaded flange
- 14 : hubbed socket welding flange
- 16 : adjustable flange

21 : integral flange

NOTE : By agreement between customer and manufacturer, an integral flange, modified as follows, can be supplied:

- a) bolt hole diameters and flange facing diameter in accordance with prEN 1092-1;
- b) for ductile iron, flange thickness to be as grey iron flanges.

Such flanges shall be designated as type 21-2.

Figure 2 illustrates facing types A and B, which are used where applicable in conjunction with flanges shown in figure 1 (see 5.7.1).

4.4 Standard designation

Flanges conforming to this standard shall be designated as follows:

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- a) term: flange; **(standards.iteh.ai)**
- b) number of this standard: EN 1092-2:1998
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- c) DN (see 4.1);
- d) PN (see 4.2);
- e) Number of flange type (see 4.3);
- f) Material type and grade (see 5.1);
- g) flange facing type for malleable cast iron (see 5.7.1).

EXAMPLE

Designation of a weld-neck flange DN100, PN 40, type 11, material type MI and grade B30-06 and facing type A:

Flange EN 1092-2/DN100/PN40/11/FM B30-06/A

4.5 Information to be supplied by the purchaser

The information to be supplied by the purchaser shall be as given in annex A.

5 General requirements

5.1 Flange materials

Flanges shall be manufactured from the materials specified in table 14.

5.2 Repairs by welding

Where not otherwise prohibited by the applicable material standard, repairs by welding are permitted when there is a proven method. All welding shall be carried out in accordance with a written procedure.

5.3 Bolting

The bolting shall be chosen by the user according to the pressure, temperature, flange material and gasket. For joints comprising at least one grey iron flange it is recommended that bolting having a yield strength not exceeding 240 N/mm² should be used.

5.4 Gaskets

The gaskets are not within the scope of this standard. For information on types, dimensions and types of gaskets see EN 1514.

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5.5 Pressure/ Temperature (p/T) ratings

5.5.1 General

The pressure/temperature ratings of the flanges manufactured from the materials specified in table 14 shall be the allowable non-shock pressures at the temperatures given in tables 15 and 16 (ductile iron), 17 (grey iron) and 18 (malleable iron). Linear interpolation is permitted for intermediate temperatures.

NOTE : The p/T rating of a flange is not necessarily the p/T rating of the whole pipework system. Gasket materials can also impose limitation on the p/T rating of a flanged joint and the gasket manufacturer should be consulted when selecting the material of the gasket.

5.5.2 p/T Rating of flanged joints

Where two flanges in a flanged joint do not have the same p/T rating, the p/T rating of the joint at any temperature shall not exceed the lower of the two flange ratings at that temperature.

NOTE 1 : The temperature is that of the contained fluid. Use of a temperature other than that of the contained fluid is the responsibility of the user, subject to the requirements of any applicable code or regulation.

NOTE 2 : Application of the p/T ratings given in this standard to flange joints, should take into consideration the risk of leakage due to forces and moments developed in the connecting pipework.

NOTE 3 : Owing to the nature of any thread sealing method used, additional limitations can be placed on a threaded flange.

NOTE 4 : These notes on service considerations are not intended to be exhaustive.