
Prirobnice in prirobnični spoji - Okrogle prirobnice za cevi, ventile, fitinge in pribor z oznako PN - 4. del: Prirobnice iz aluminijevih zlitin

Flanges and their joints - Circular flanges for pipes, valves, fittings and accessories, PN designated - Part 4: Aluminium alloy flanges

Flansche und ihre Verbindungen - Runde Flansche für Rohre, Armaturen, Formstücke und Zubehörteile, nach PN bezeichnet - Teil 4: Flansche aus Aluminiumlegierungen

Brides et leurs assemblages - Brides circulaires pour tubes, appareils de robinetterie, raccords et accessoires, désignées PN - Partie 4: Brides en alliages d'aluminium

Ta slovenski standard je istoveten z: EN 1092-4:2002

[SIST EN 1092-4:2002](http://standards.slovenski.si/standards/sist/20100000/2002/1092-4:2002)

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ICS:

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English version

**Flanges and their joints - Circular flanges for pipes, valves,
fittings and accessories, PN designated - Part 4: Aluminium
alloy flanges**

Brides et leurs assemblages - Brides circulaires pour tubes, appareils de robinetterie, raccords et accessoires, désignées PN - Partie 4: Brides en alliages d'aluminium

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This European Standard was approved by CEN on 28 March 2002.

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 Management Centre or to any CEN member.

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 Management Centre has the same status as the official versions.

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Foreword

This document EN 1092-4:2002 has been prepared by Technical Committee CEN/TC 74 "Flanges and their joints", 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of an identical text or by endorsement, at the latest by November 2002, and conflicting national standards shall be withdrawn at the latest by November 2002.

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 Directive(s).

For relationship with EU Directive(s), see informative annex ZA, which is an integral part of this document.

EN 1092 consists of the following four parts:

Part 1: Steel flanges;

Part 2: Cast iron flanges;

Part 3: Copper alloy flanges;

Part 4: Aluminium alloy flanges.

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 and with those flanges of ISO 7005.

Annex A is informative.

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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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EN 1092-4:2002 (E)**1 Scope**

This European Standard specifies requirements for PN designated circular flanges for pipes, valves, fittings and accessories made from aluminium alloy in the range of DN 15 to DN 600 and PN10 to PN 63 (see Table 1).

This European Standard specifies the types of flanges and their facings, dimensions and tolerances, bolt sizes, surface finish of jointing faces, marking and materials together with associated pressure/temperature (p/T) ratings.

The flanges are intended to be used for piping as well as for pressure vessels.

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 provisions 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 (including amendments).

EN 764, *Pressure equipment - Terminology and symbols - Pressure, temperature, volume.*

EN 1333, *Pipework components - Definition and selection of PN.*

EN 1514, *Flanges and their joints - Dimensions of gaskets for PN-designated flanges.*

EN 1515-1, *Flanges and their joints - Bolting - Part 1: Selection of bolting.*

EN 12392, *Aluminium and aluminium alloys - Wrought products - Special requirements for products intended for the production of pressure equipment.*

EN ISO 887, *Plain washers for metric bolts, screws and nuts for general purposes - General plan (ISO 887:2000).*

EN ISO 4287, *Geometrical product specifications (GPS) - Surface texture: Profile method - Terms, definitions and surface texture parameters (ISO 4287:1997).*

EN ISO 6708, *Pipework Components - Definition and selection of DN (nominal size) (ISO 6708:1995).*

3 Terms and definitions

For the purposes of this European Standard the following terms and definitions apply.

3.1

DN

see EN ISO 6708

3.2

PN

see EN 1333

3.3

Ra, Rz

see EN ISO 4287

3.4

maximum allowable pressure, PS

PS means the maximum pressure for which the equipment is designed, as specified by the equipment manufacturer

(See also EN 764, where it is defined as allowable pressure p_S).

3.5

maximum allowable temperature, TS

TS means the maximum temperature for which the equipment is designed, as specified by the equipment manufacturer

(See also EN 764, where it is defined as allowable temperature t_S).

4 Designations

4.1 Range of DN

The range of DN applicable to each PN shall be as given in Table 1.

4.2 Range of PN designations

The range of PN designations shall be as given in Table 1.

4.3 Types of flanges

Figure 1 illustrates flanges identified according to type:

- a) Type 05 Blank flange;
- b) Type 11 Weld-neck flange.

4.4 Designation of flanges

The designation of the flanges shall contain the following information:

- a) Description (flange);
- b) Number of this standard (EN 1092-4);
- c) Flange type number (11, 05 resp.);
- d) Flange facing type (e.g. C);
- e) DN (e.g. DN 300);
- f) For type 11 flanges only, the neck diameter, A and the neck thickness, S , (e.g. 324 x 4);
- g) PN (e.g. PN 40);
- h) Material (e.g. EN AW-5083-O).

- PN 16 flanges: Table 5;
- PN 25 flanges: Table 6;
- PN 40 flanges: Table 7;
- PN 63 flanges: Table 8.

NOTE 1 Approximate masses of flanges are given in annex A.

NOTE 2 Figures 3 to 7 are identical. They are repeated for better handling of the standard.

5.6.2 Bolt holes shall be equally spaced on the pitch circle diameter.

5.6.3 If the neck thickness, S is ordered smaller than given in Tables 4 to 8, the inside diameter at the neck shall be tapered at an angle of 14° to 18° . If S is ordered greater, the bore diameter shall be $A - 2 \times S$.

5.7 Flange facings

5.7.1 Types of facings

The types of flange facings shall be as given in Figure 2, and their dimensions shall be as given in Table 2.

If not stated in the purchase order, flange facing B1 is standard for flanges up to PN 40, flange facing B2 is standard for PN 63 flanges.

5.7.2 Jointing face finish

All flange jointing faces shall be machine finished and, when compared by visual or tactile means with reference specimens, shall be in accordance with Table 3.

NOTE 1 It is not intended that instrument measurements are taken on the jointing faces.

NOTE 2 Other jointing face finishes may be agreed.

For jointing face type B1, turning shall be carried out with a round-nosed tool in accordance with Table 3.

5.8 Spot facing and back facing of flanges

Any spot facing and back facing required shall not reduce the flange thickness to less than the thickness specified. When spot facing is used, the diameter shall be large enough to accommodate the outside diameter of the equivalent normal series of washers in accordance with EN ISO 887 for the bolt size being fitted. When a flange is back faced, it is permissible for the fillet radius to be reduced but it shall not be eliminated entirely.

5.9 Tolerances

Tolerances on dimensions shall be as specified in Table 9.

5.10 Marking

All flanges shall be marked as follows:

- Flange manufacturer's name or trade-mark (e.g. xxx);
- Number of this standard (EN 1092-4);
- DN (e.g. DN 300);
- PN (e.g. PN 25);
- Neck thickness if not standard (e.g. 7,1);
- Material designation (e.g. EN AW-5083-O);
- Batch number or suitable quality control number traceable to the batch number when test certification is required (e.g. yyy).

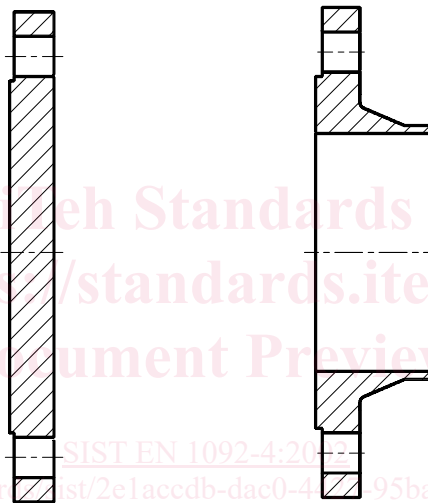
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EXAMPLE: xxx - EN 1092-4 - DN 300 - PN 25 - 7,1 - EN AW-5083-O - yyy

The flanges shall be clearly and permanently marked around the rim.

Table 1 - Synoptic table

Type	PN	DN												
		15	25	40	50	80	100	150	200	250	300	400	500	600
05 and 11	10	Use PN 40				Use PN 16			x	x	x	x	x	x
	16	Use PN 40				x	x	x	x	x	x	x	x	x
	25	Use PN 40							x	x	x	x	x	x
	40	x	x	x	x	x	x	x	x	x	x	x	-	-
	63	x	x	x	x	x	x	x	x	x	x	x	-	-



Type 05
Blank flange

Type 11
Weld-neck flange

Figure 1 - Types of flanges