

# INTERNATIONAL STANDARD

**ISO**  
**7483**

First edition  
1991-10-01

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## Dimensions of gaskets for use with flanges to ISO 7005

**iTeh STANDARD PREVIEW**  
*Dimensions des joints à utiliser avec les brides de l'ISO 7005*  
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Reference number  
ISO 7483:1991(E)

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75% of the member bodies casting a vote.

International Standard ISO 7483 was prepared by Technical Committee ISO/TC 5, *Ferrous metal pipes and metallic fittings*, Sub-Committee SC 10, *Metallic flanges and their joints*.

Annexes A and B of this International Standard are for information only.

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## Introduction

This International Standard has been prepared in order to specify dimensions of gaskets for use with flanges to the following standards:

ISO 7005-1, *Metallic flanges — Part 1: Steel flanges*

ISO 7005-2, *Metallic flanges — Part 2: Cast iron flanges*

ISO 7005-3, *Metallic flanges — Part 3: Copper alloy and composite flanges*

It is divided into sections, according to the form of gasket, as follows:

Section 1: General

Section 2: Non-metallic flat gaskets

Section 3: Spiral wound gaskets

Section 4: Metallic ring-joint gaskets

Section 5: Non-metallic envelope gaskets

Section 6: Corrugated, flat or grooved metallic and filled metallic gaskets

The materials for gaskets are outside the scope of this International Standard but section 1 lists the various forms of gaskets and the ranges of materials used for some gasket forms, and section 4 gives hardness values of typical ring-joint gasket materials.

The selection of the gasket type, its material and thickness (as applicable) should take account of the operating conditions, the properties of the gasket material, the type of flange facing, the surface finish of the flange and the flange bolt loading. Therefore, it is recommended that the selection of gaskets for any particular application is made in consultation with the gasket supplier.

Annex A lists for information the type of flange faces for which gaskets are specified in this International Standard and annex B gives information to be supplied by the purchaser when ordering gaskets.

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## Dimensions of gaskets for use with flanges to ISO 7005

### Section 1: General

#### 1.1 Scope

This International Standard specifies the dimensions of the following gaskets for use in conjunction with flanges to ISO 7005-1, ISO 7005-2 and ISO 7005-3 (see 1.4):

- a) non-metallic flat gaskets;
- b) spiral wound gaskets;
- c) metallic ring-joint gaskets;
- d) non-metallic envelope gaskets;
- e) corrugated, flat or grooved metallic and filled metallic gaskets.

NOTE 1 A future part of ISO 7005 will cover aluminium and aluminium alloy flanges.

The relevant nominal size (DN) and nominal pressure (PN) ranges for each form of gasket are given in sections 2 to 6, as appropriate.

It does not cover the materials for gaskets (see the Introduction).

#### 1.2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of ap-

plying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 468:1982, *Surface roughness — Parameters, their values and general rules for specifying requirements*.

ISO 6708:1980, *Pipe components — Definition of nominal size*.

ISO 7005-1:1991<sup>1)</sup>, *Metallic flanges — Part 1: Steel flanges*.

ISO 7005-2:1988, *Metallic flanges — Part 2: Cast iron flanges*.

ISO 7005-3:1988, *Metallic flanges — Part 3: Copper alloy and composite flanges*.

ISO 7268:1983, *Pipe components — Definition of nominal pressure*.

ASTM A 182/A 182M - 87a, *Forged or rolled alloy-steel pipe flanges, forged fittings, and valves and parts for high-temperature service*.

#### 1.3 Definitions





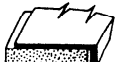
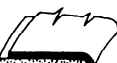











For the purposes of this International Standard, the definitions of nominal size (DN) given in ISO 6708 and nominal pressure (PN) given in ISO 7268 apply.

#### 1.4 Gasket forms

The forms of gaskets specified in this International Standard are described and illustrated in table 1.

1) To be published.

Table 1 — Gasket forms

Gasket	Sketches	See section	Gasket	Sketches	See section
Rubber, without fabric		2	Ring joint (octagonal)		4
Rubber, with fabric insertion			Ring joint (oval)		
Rubber, with fabric insertion/wire reinforcement			Envelope		5
Plastic material					
Expanded graphite, with or without insertion					
Compressed fibre, with a suitable binder for the operating conditions (see note 1)					
Vegetable fibre	Corrugated metal with filler or corrugated metal jacketed with filler		6		
Cork based		Corrugated metal			
Spiral wound, with centring ring and inner ring		3	Grooved metal with or without a layer of additional gasket material		6
Spiral wound, with centring ring			Flat metal jacketed with filler		
Spiral wound sealing element with inner ring					
Spiral wound sealing element only			Solid flat metal		

**WARNING — Materials containing asbestos may be subject to legislation that requires precautions to be taken when handling them to ensure that they do not constitute a hazard to health.**

NOTES

- The types of flange facings are specified in ISO 7005-1, ISO 7005-2 and ISO 7005-3, and, for information, the facings are shown in annex A.
- Information which should be supplied by the purchaser when ordering gaskets is listed in annex B.



## Section 2: Non-metallic flat gaskets

### 2.1 Gasket designs

Gaskets shall be manufactured from either

- a) single flat sheet, or
- b) laminated ply,

in a single material or combination of materials.

NOTE 2 Examples of typical materials are given in table 1.

**WARNING** — Compressed fibre gaskets may contain asbestos. Materials containing asbestos may be subject to legislation that requires precautions to be taken when handling them to ensure that they do not constitute a hazard to health.

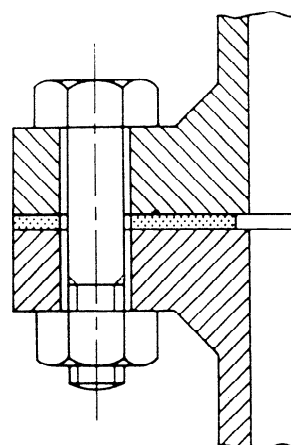


Figure 1 — Type A flange facings with full face gasket

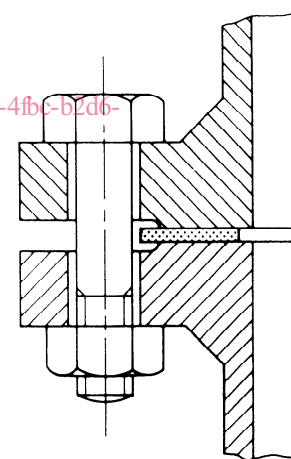
### 2.2 Gasket types

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Gaskets shall be one of the following types:

- a) full face gasket for type A (flat face) or type B (raised face) flange facings [see figures 1 and 5a)];
- b) IBC (inside bolt circle) gasket for type A (flat face) or type B (raised face) flange facings [see figures 2 and 5b)];
- c) tongue and groove gasket for type C/D flange facings [see figures 3 and 5b)];
- d) spigot and recess gasket for type E/F flange facings [see figures 4 and 5b)];
- e) segmental gasket (see note 3 below).

NOTE 3 Gaskets of the types described in a), b), c) and d) and having an outside diameter greater than 1 500 mm may be available only in segmental form. The purchaser should consult the gasket manufacturer or supplier as to the forms available for the larger sizes of gasket.



NOTE — For PN 20, PN 50, PN 110 and PN 150 the IBC gasket extends to touch the bolt.

Figure 2 — Type B flange facings with IBC gasket

## 2.3 Range of gasket sizes

The ranges of sizes of gaskets to suit the nominal sizes (DN) and nominal pressures (PN) of flanges are given in table 2 for the different gasket types.

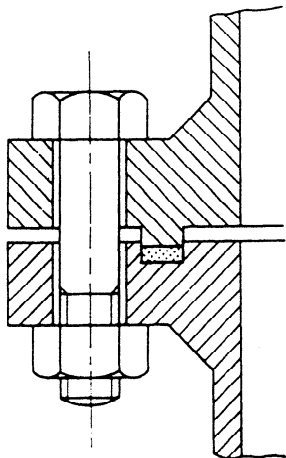


Figure 3 — Type C/D flange facings with tongue and groove gasket

## 2.4 Dimensions

### 2.4.1 Thickness

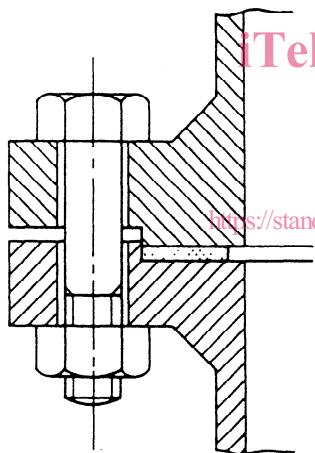


Figure 4 — Type E/F flange facings with spigot and recess gasket

Gasket thicknesses for non-metallic flat gasket materials given in table 1 shall be selected from table 3.

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### 2.4.2 Diameters

The dimensions for diameters shall be as given in tables 4 to 11, as appropriate; the plan dimensions are shown in figure 5.

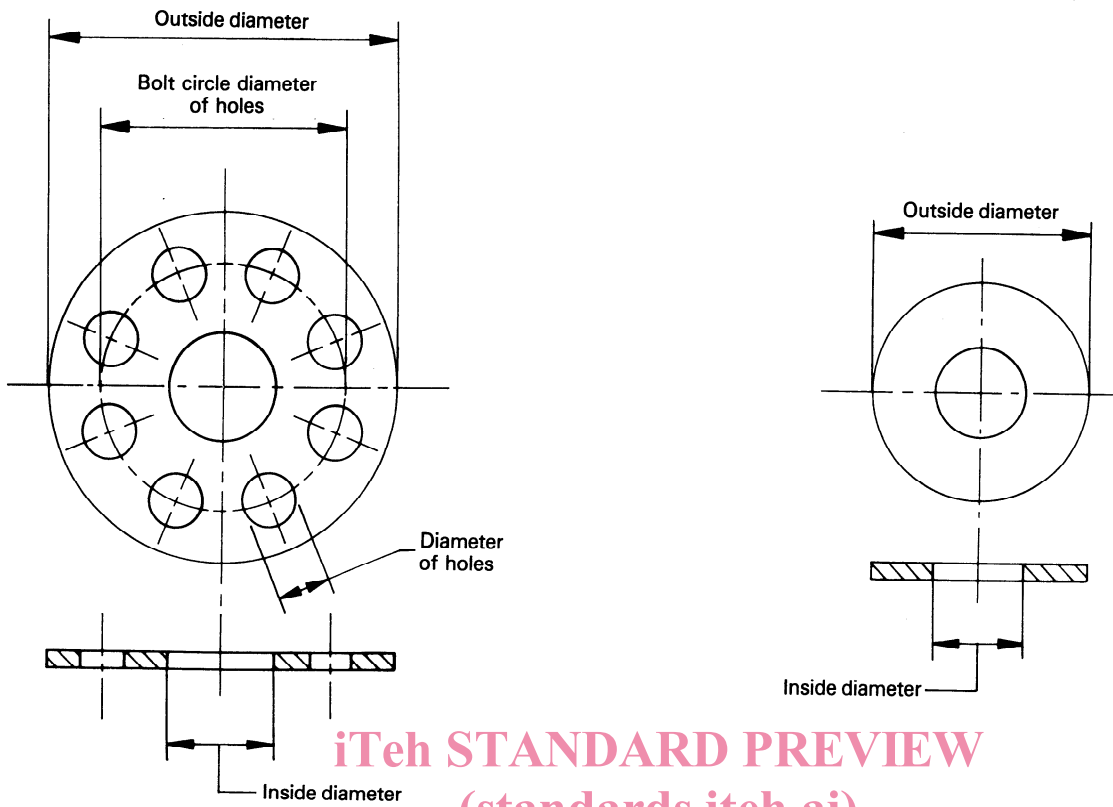
Table 2 — Range of gasket sizes

Flange nominal pressure  PN	For dimensions refer to table number	Gasket type							
		Full face		IBC		Tongue and groove		Spigot and recess	
		Range of nominal sizes DN							
		from	to	from	to	from	to	from	to
2,5	4	10	600	10	4 000				
6	5	10	600	10	3 600				
10	6	10	2 000	10	3 000	10	1 000	10	1 000
16	7	10	2 000	10	2 000	10	1 000	10	1 000
20	8	15	600	15	1 500				
25	9	10	2 000	10	2 000	10	1 000	10	1 000
40	10	10	600	10	600	10	600	10	600
50	11			15	1 500	15	600	15	600
110	11			15	1 500	15	600	15	600
150	11			15	1 200	15	600	15	600

Table 3 — Gasket thickness

Dimensions in millimetres

Gasket material	Thickness									
	0,25	0,4	0,5	0,8	1	1,5	2	3	5	6,4
Rubber, without fabric						X	X	X	X	
Rubber, with fabric insertion						X		X	X	
Rubber, with fabric insertion/wire reinforcement								X	X	
Plastic					X	X	X	X		
Expanded graphite, without insertion				X	X	X	X			
Expanded graphite, with insertion					X	X	X			
Compressed fibre, with binder			X	X	X	X	X	X		
Vegetable fibre	X	X	X	X	X		X			
Cork based						X		X	X	X



NOTE — This figure illustrates the arrangement but not necessarily the correct number of bolt holes.

Refer to the relevant table for the actual number of bolt holes.

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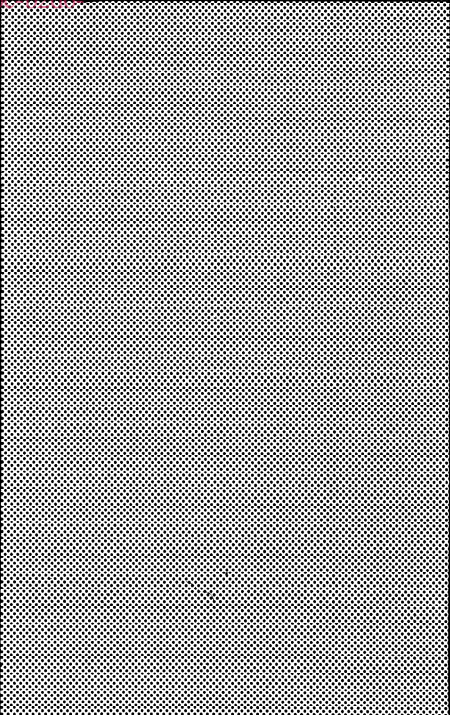
a) Full face gasket

b) IBC gasket, tongue and groove gasket, and spigot and recess gasket

Figure 5 — Gasket plan dimensions

Table 4 — Dimensions of gaskets for PN 2,5 flanges

Dimensions in millimetres

Nominal size DN	Gasket inside diameter	IBC gasket outside diameter	Full face gasket dimensions
10	Use PN 6 dimensions	Use PN 6 dimensions	Use PN 6 dimensions
15			
20			
25			
32			
40			
50			
65			
80			
100			
125			
150			
200			
250			
300			
350			
400			
450			
500			
600			
700			
800			
900			
1 000			
1 200	1 220	1 290	
1 400	1 420	1 490	
1 600	1 620	1 700	
1 800	1 820	1 900	
2 000	2 020	2 100	
2 200	2 220	2 307	
2 400	2 420	2 507	
2 600	2 620	2 707	
2 800	2 820	2 924	
3 000	3 020	3 124	
3 200	3 220	3 324	
3 400	3 420	3 524	
3 600	3 620	3 734	
3 800	3 820	3 931	
4 000	4 020	4 131	

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