

BMS 23 - BSEN 1514 Pt 1 (Formerly BS4865 Pt 1)  
 Non-Metallic Dimensions & Tolerances

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Dimensions in millimetres

Range of Gasket Sizes (Table 1 in EN1514 - 1:1997)						
PN	For Dimensions Refer To Table Number	Gasket Type (1)				
		Type FF	Type IBC	Type TG	Type SR	
		DN Range				
2.5	3	10 to 600	10 to 4000	-	-	
6	4	10 to 600	10 to 3600	-	-	
10	5	10 to 2000	10 to 3000	10 to 1000	10 to 1000	
16	6	10 to 2000	10 to 2000	10 to 1000	10 to 1000	
25	7	10 to 2000	10 to 2000	10 to 1000	10 to 1000	
40	8	10 to 600	10 to 600	10 to 600	10 to 600	
63	9	-	10 to 400	-	-	

(1) For Gasket Type Designation - see clause 4

Dimensions in millimetres

Gasket Thickness (Table 2 in EN1514 - 1:1997)											
Gasket Material	Thickness										
	0.25	0.4	0.5	0.8	1	1.5	2	3	4	5	6.4
Rubber without Insertion						X	X	X	X	X	
Rubber with fabric insertion <sup>(1)</sup>						X		X	X	X	
Rubber with wire reinforced fabric Insertion								X	X	X	
Rubber with metallic insert <sup>(1)</sup>								X	X	X	X
Plastics					X	X	X	X			
Expanded Graphite With insertion		X		X	X	X	X	X			
Compressed fibre With binder	X	X	X	X	X	X	X	X			
Vegetable Fibre	X	X	X	X	X		X				
Cork Based						X		X		X	X

(1) Thickness greater than 6.4mm may be required for large diameters or depending on the type of gasket e.g. with metallic insert

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**Dimensions of Gaskets for PN 2.5 Flanges (Table 3 in EN1514 - 1:1997)**

DN	Gasket Inside Diameter	Type IBC Gasket Outside Diameter	Type FF Gasket
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			
1000			
1200	1220	1290	
1400	1420	1490	
1600	1620	1700	
1800	1820	1900	
2000	2020	2100	
2200	2220	2307	
2400	2420	2507	
2600	2620	2707	
2800	2820	2924	
3000	3020	3124	
3200	3220	3324	
3400	3420	3524	
3600	3620	3734	
3800	3820	3931	
4000	4020	4131	

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**Dimensions of Gaskets for PN 6 Flanges (Table 4 in EN1514 - 1:1997)**

DN	Gasket Inside Diameter	Type IBC Gasket Outside Diameter	Type FF Gasket			
			Outside Diameter	Holes		Bolt Circle Diameter
				No	Diameter	
10	18	39	75	4	11	50
15	22	44	80	4	11	55
20	27	54	90	4	11	65
25	34	64	100	4	11	75
32	43	76	120	4	14	90
40	49	86	130	4	14	100
50	61	96	140	4	14	110
60 <sup>(1)</sup>	72	106	150	4	14	120
65	77	116	160	4	14	130
80	89	132	190	4	18	150
100	115	152	210	4	18	170
125	141	182	240	8	18	200
150	169	207	265	8	18	225
200	220	262	320	8	18	280
250	273	317	375	12	18	335
300	324	373	440	12	22	395
350	356	423	490	12	22	445
400	407	473	540	16	22	495
450	458	528	595	16	22	550
500	508	578	645	20	22	600
600	610	679	755	20	26	705
700	712	784				
800	813	890				
900	915	990				
1000	1016	1090				
1200	1220	1307				
1400	1420	1524				
1600	1620	1724				
1800	1820	1931				
2000	2020	2138				
2200	2220	2348				
2400	2420	2558				
2600	2620	2762				
2800	2820	2972				
3000	3020	3172				
3200	3220	3382				
3400	3420	3592				
3600	3620	3804				

(1)Relates to cast iron flanges only

Dimensions in millimetres

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Dimensions for Gaskets for PN 10 Flanges (Table 5 in EN1514 - 1:1997)

DN	Gaskets 2) 3) Inside Diameter	Type IBC Gasket Outside Diameter	Type FF Gasket			Bolt Circle Diameter	Type SR Gasket Outside Diameter	Type TG Gasket	
			Outside Diameter	Holes				Inside Diameter	Outside Diameter
				No	Diameter				
10	Use PN 40 Dimensions		Use PN 40 Dimensions			Use PN 40 Dimensions	Use PN 40 Dimensions		
15									
20									
25									
32									
40									
50									
60 <sup>(1)</sup>									
65									
80									
100	Use PN 16 Dimensions		Use PN 16 Dimensions						
125									
150									
200									
250									
250	273	328	395 <sup>(4)</sup>	8	22	295		350	
300	324	378	445 <sup>(4)</sup>	12	22			400	
350	356	438	505	16	22			460	
400	407	489	565	16	26			515	
450	458	539	615	20	26			565	

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500	508	594	670	20	26	620		
600	610	695	780	20	30	725		
700	712	810	895	24	30	840	Use PN 25 Dimensions	Use PN 25 Dimensions
800	813	917	1015	24	33	950		
900	915	1017	1115	28	33	1050		
1000	1016	1124	1230	28	36	1160		
1100	1120	1231	1340	32	39	1270		
1200	1220	1341	1455	32	39	1380		
1400	1420	1548	1675	36	42	1590		
1500 <sup>(1)</sup>	1520	1658	1785	36	42	1700		
1600	1620	1772	1915	40	48	1820		
1800	1820	1972	2115	44	48	2020		
2000	2020	2182	2325	48	48	2230		
2200	2220	2384						
2400	2420	2594						
2600	2620	2794						
2800	2820	3014						
3000	3020	3228						

**For PN 10 Flanges**

- (1) Relates to cast iron flanges only.  
 (2) Except tongue and groove gasket.  
 (3) See table 10 for inside diameters of gaskets to suit EN 545, EN 598 and EN 969 flanges.  
 (4) For ductile iron pipes and fittings complying with EN 545, EN 598 and EN 969, the outside diameters for the following  
 Flanges are:
- DN 250: 400mm.
  - DN 300: 455mm.

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Dimensions in millimetres

Dimensions for Gaskets for PN 16 Flanges (Table 6 in EN1514 - 1:1997)									
DN	Gaskets 2) 3) Inside Diameter	Type IBC Gasket Outside Diameter	Type FF Gasket			Bolt Circle Diameter	Type SR Gasket Outside Diameter	Type TG Gasket	
			Outside Diameter	Holes				Inside Diameter	Outside Diameter
				No	Diameter				
10	Use PN 40 Dimension	Use PN 40 Dimension	Use PN 40 Dimensions						
15									
20									
25									
32									
40									

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50	S	S					Use PN 40 Dimensions	Use PN 40 Dimensions
60 <sup>(1)</sup>								
65								
80								
100	115	162	220	8	18	180		
125	141	192	250	8	18	210		
150	169	218	285	8	22	240		
200	220	273	340	12	22	295		
250	273	329	405 <sup>(4)</sup>	12	26	355		
300	324	384	460 <sup>(4)</sup>	12	26	410		
350	356	444	520	16	26	470		
400	407	495	580	16	30	525		
450	458	555	640	20	30	585		
500	508	617	715	20	33	650		
600	610	734	840	20	36	770		
700	712	804	910	24	36	840		
800	813	911	1025	24	39	950		
900	915	1011	1125	28	39	1050		
1000	1016	1128	1255	28	42	1170		
1100	1120	1228	1355	32	42	1270		
1200	1220	1342	1485	32	48	1390		
1400	1420	1542	1685	36	48	1590		
1500 <sup>(1)</sup>	1520	1654	1820	36	56	1710		
1600	1620	1764	1930	40	56	1820		
1800	1820	1964	2130	44	56	2020		
2000	2020	2168	2345	48	62	2230		

Dimensions in millimetres

Dimensions for Gaskets for PN 25 Flanges (Table 7 in EN1514 - 1:1997)								
DN	Gaskets	Type IBC	Type FF Gasket			Type SR	Type TG Gasket	
	2) 3)	Gasket		Gasket		Gasket		
	Inside	Outside	Outside	Outside	Inside	Outside	Inside	Outside
	Diameter	Diameter	Diameter	Diameter	Diameter	Diameter	Diameter	Diameter
10	Use PN 40 Dimensions	Use PN 40 Dimensions		No	Diameter		Use PN 40 Dimensions	Use PN 40 Dimensions
15								
20								
25								
32								
40								

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50										
60 <sup>(1)</sup>										
65										
80										
100										
125										
150			Use PN 40 Dimensions							
200	220	284	360	12	26	310				
250	273	340	425	12	30	370				
300	324	400	485	16	30	430				
350	356	457	555	16	33	490				
400	407	514	620	16	36	550				
450	458	564	670	20	36	600				
500	508	624	730	20	36	660				
600	610	731	845	20	39	770				
700	712	833	960	24	42	875	777	751	777	
800	813	942	1085	24	48	990	882	856	882	
900	915	1042	1185	28	48	1090	987	961	987	
1000	1016	1154	1320	28	56	1210	1092	1062	1092	
1100	1120	1254	1420	32	56	1310				
1200	1220	1364	1530	32	56	1420				
1400	1420	1578	1755	36	62	1640				
1500 <sup>(1)</sup>	1520	1688	1865	36	62	1750				
1600	1620	1798	1975	40	62	1860				
1800	1820	2000	2195	44	70	2070				
2000	2020	2230	2425	48	70	2300				

1) Relates to cast iron flanges only.

(2) Except tongue and groove gasket.

(3) See table 10 for inside diameters of gaskets to suit EN 545, EN 598 AND EN 969 flanges.

Dimensions in millimetres

DN	Gaskets 2) 3) Inside Diameter	Type IBC Gasket Outside Diameter	Type FF Gasket				Type SR Gasket Outside Diameter	Type TG Gasket	
			Outside Diameter	Holes		Bolt Circle Diameter		Inside Diameter r	Outside Diameter r
				No	Diameter				
10	18	46	90	4	14	60	34	24	34
15	22	51	95	4	14	65	39	29	39
20	27	61	105	4	14	75	50	36	50
25	34	71	115	4	14	85	57	43	57
32	43	82	140	4	18	100	65	51	65
40	49	92	150	4	18	110	75	61	75
50	61	107	165	4	18	125	87	73	87
60 <sup>(1)</sup>	72	117	175	8	18	135	-	-	-
65 <sup>(4)</sup>	77	127	185	8 <sup>(4)</sup>	18	145	109	95	109

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80	89	142	200	8	18	160	120	106	120
100	115	168	235	8	22	190	149	129	149
125	141	194	270	8	26	220	175	155	175
150	169	224	300	8	26	250	203	183	203
200	220	290	375	12	26	320	259	239	259
250	273	352	450	12	30	385	312	292	312
300	324	417	515	16	30	450	363	343	363
350	356	474	580	16	33	510	421	395	421
400	407	546	660	16	36	585	473	447	473
450	458	571	685	20	36	610	523	497	523
500	508	628	755	20	36	670	575	549	575
600	610	747	890	20	39	795	675	649	675

- (1) Relates to cast iron flanges only.  
 (2) Except tongue and groove gasket.  
 (3) See table 10 for inside diameters of gaskets to suit EN 545, EN 598 AND EN 969 flanges.  
 (4) This gasket is used also for flanges having 4 bolt holes

Dimensions in millimetres

Dimensions of gaskets for PN 64 flanges (Table 9 in EN1514 –1:1997)		
DN	Gasket inside diameter	Type IBC gasket outside diameter
10	18	56
15	21	61
20	25	72
25	30	82
32	41	88
40	47	103
50	59	113
60 <sup>(1)</sup>	68	123
65	73	138
80	86	148
100	110	174
125	135	210
150	163	247

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175	185	277
200	210	309
250	264	364
300	314	424
350	360	486
400	415	543

(1) Relates to cast iron flanges only

## Clause 9

**Inside diameters of gaskets for use with pipes and fittings complying with EN 545, EN 589 and EN 969**

Some gaskets specifically required for use with EN 545, EN 598 and EN 969 have inside diameters different to those for use with flanges complying with pr EN 1092, in which case the inside diameters shall be given in table 52 (Table 10 in EN1514 -1:1997).

Note 1. Gaskets for use with pipes and fittings complying with EN 545, EN 598 and EN 969 will apply only in the range PN10 to PN40.


Note 2. For gaskets of other nominal sizes and for other dimensions consult tables 47 to 51 (Tables 5 to 9 in EN1514 -1:1997), as appropriate.

Note 3. See clause 10 item b), for marking requirements.

Dimensions in millimetres

**Inside diameters of gaskets specifically for use with pipes and fittings complying with EN 545, EN 598 and EN 969 (Table 10 in EN1514 -1:1997)**

DN	Gasket inside diameter – mm
350	368
400	420
450	470
500	520
600	620
700	720
800	820
900	920
1000	1025
1100	1125
1200	1225
1400	1430
1500	1535
1600	1635

	Operational Procedure - Rev 0	NWP 01 - Rev 1	
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1800	1840
2000	2040

## Clause 10 – Marking

Gaskets shall be identified individually or on the packaging containing the gasket(s) with the following information:

- a) the number and part of this European Standard, i.e. EN 1514 –1;
- b) 'S' if suitable for use only for pipes and fittings complying with EN 545, en 598 and EN 969 (see clause 9);
- c) gasket type designation (see 4.3);
- d) DN followed by the appropriate number (see tables 3 to 9);
- e) PN designation (see table 1);
- f) Thickness (see clause 8.1);
- g) Material(s) (see clause 5 and annex c);
- h) Manufacturers name or trademark.

Example 1.

EN 1514 -1, Type IBC, DN 300, PN10, 2mm, expanded graphite, AAA/BBB.

Example 2.

EN 1514 - 4, S, Type IBC, DN 300, PN10, 3mm, rubber with fabric insertion, AAA/BBB.

Unless otherwise specified on the works order, tolerances shall be as below:

<b>i.e.</b>	Outside Diameter	< NPS 300mm - + 0 / - 1.50 mm
		> NPS 350mm - + 0 / - 3.00
	mm	
	Inside Diameter	< NPS 300mm - + / - 1.50 mm
		> NPS 350mm - + / - 1.50 mm
	Bolt circle diameter	+ / - 1.50 mm
	Centre to centre of adjacent bolt holes	+ / - 0.76 mm