

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 964

SHIPBUILDING DETAILS

MATING DIMENSIONS FOR PIPELINE FLANGES FOR SHIPS

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SHIPBUILDING DETAILS

MATING DIMENSIONS FOR PIPELINE FLANGES FOR SHIPS

1. SCOPE

This ISO Recommendation tables the mating dimensions of flanges to be used in the pipelines of ships.

2. SYMBOLS AND ABBREVIATIONS

d = Outside diameter of flange
 d_1 = Pitch circle diameter of bolts
 d_2 = Bolt hole diameter
 n = Number of bolts

DN = Nominal diameter of pipeline
 DE = Outside diameter of tube
 PN = Nominal pressure

3. DIMENSIONS

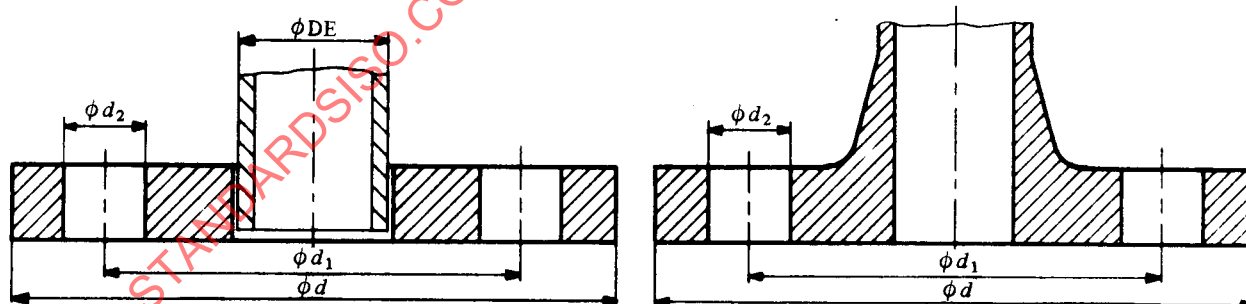


TABLE 1

Dimensions in millimetres

		Dimensions in millimetre																											
Nominal diameter DN	Tubes DE	Flanges																											
		Nominal pressure in kgf/cm ²																											
		PN 6				PN 10				PN 16				PN 40				PN 64				PN 100				PN 160			
		d	d ₁	d ₂	n	d	d ₁	d ₂	n	d	d ₁	d ₂	n	d	d ₁	d ₂	n	d	d ₁	d ₂	n	d	d ₁	d ₂	n	d	d ₁	d ₂	n
6	10*	—	—	—	—	Mating dimensions as for PN 40								—	—	—	—	Mating dimensions as for PN 160								100	70	14	4
8	12*	—	—	—	—									100	70	14	4												
10	14*	75	50	11	4									90	60	14	4									100	70	14	4
15	20*	80	55	11	4									95	65	14	4									105	75	14	4
20	25	90	65	11	4									105	75	14	4									130	90	18	4
25	30	100	75	11	4									115	85	14	4									140	100	18	4
32	38	120	90	14	4									140	100	18	4									155	110	22	4
40	44.5 48.3	130	100	14	4									150	110	18	4									170	125	22	4
50	57 60.3	140	110	14	4	165	125	18	4	180	135	22	4	195	145	26	4												
65	76.1	160	130	14	4	Mating dimensions as for PN 16				185	145	18	4	185	145	18	8	205	160	22	8	220	170	26	8				
80	88.9	190	150	18	4	200	160	18	4	Mating dimensions as for PN 40				200	160	18	8	215	170	22	8	230	180	26	8				
100	108 114.3	210	170	18	4	Mating dimensions as for PN 16				220	180	18	8	235	190	22	8	250	200	26	8	265	210	30	8				
125	133 139.7	240	200	18	8					250	210	18	8	270	220	26	8	295	240	30	8	315	250	33	8				
150	159 168.3	265	225	18	8					285	240	22	8	300	250	26	8	345	280	33	8	355	290	33	12				
(175)	193.7	295	255	18	8					315	270	22	8	350	295	30	12	375	310	33	12	385	320	33	12	390	320	36	12
200	219.1	320	280	18	8	340	295	22	8	340	295	22	12	375	320	30	12	415	345	36	12	Mating dimensions as for PN 160				430	360	36	12
250	(267) 273	375	335	18	12	395	350	22	12	405	355	26	12	450	385	33	12	470	400	36	12	505	430	39	12	515	430	42	12
300	323.9	440	395	22	12	445	400	22	12	460	410	26	12	515	450	33	16	530	460	36	16	Mating dimensions as for PN 160				585	500	42	16
350	355.6 368	490	445	22	12	505	460	22	16	520	470	26	16	580	510	36	16												
400	406.4 419	540	495	22	16	565	515	26	16	580	525	30	16	660	585	39	16												
450	457.2	595	550	22	16	615	565	26	20	640	585	30	20	685	610	39	20												
500	508	645	600	22	20	670	620	26	20	715	650	33	20	755	670	42	20												
600	609.6	755	705	26	20	780	725	30	20																				
700	711.2	860	810	26	24	895	840	30	24																				
800	812.8	975	920	30	24	1015	950	33	24																				

* See clause 4.1.

NOTE. — It is not recommended to use the dimensions between brackets.

4. REMARKS

4.1 Tube connection fittings

For preference, use pipe connection fittings for tubes with outside diameters up to and including DE = 20 mm, according to Table 2.

TABLE 2

Dimensions in millimetres

DN	6	8	10	12	16
DE	10	12	14	16	20

4.2 Reference

The mentioned outside diameters DE of the tubes are in accordance with ISO Recommendation R 64, *Steel tubes — Outside diameters*, completed with the outside diameters DE = 10 and 14 mm, as well as with five outside diameters of more than 419 mm.