

Translated English of Chinese Standard: HG/T20627-2009

www.ChineseStandard.net

Sales@ChineseStandard.net

Chemical Industry Standard
of the People's Republic of China

HG

HG/T 20627-2009

Replacing HG 20627-1997, HG 20629-1997

Non-metallic Flat Gaskets for Use with Steel Pipe Flanges

(Class Designated)

钢制管法兰用非金属平垫片

(Class)系列

HG/T 20627-2009 How to BUY & immediately GET a full-copy of this standard?

1. www.ChineseStandard.net;
2. Search --> Add to Cart --> Checkout (3-steps);
3. No action is required - Full-copy of this standard will be automatically & immediately delivered to your EMAIL address in 0~25 minutes.
4. Support: Sales@ChineseStandard.net. Wayne, Sales manager

Issued on: February 5, 2009

Implemented on: July 1, 2009

Issued by: Ministry of Industry and Information Technology of the People's Republic of China

Contents

1. Scope	3
2. Normative references	3
3. Material and working conditions	3
4. Gasket type and dimension.....	6
5. Technical requirements	14
6. Marking illustration	15

1. Scope

This standard specifies the type, dimension and technical requirements of non-metallic flat gaskets (with insertion or without insertion) for use with steel pipe flanges.

This standard is applicable to the non-metallic flat gaskets for use with steel pipe flanges whose nominal pressures from Class150 (PN20)-Class600 (PN110) are specified in HG/T 20615 and HG/T 20623.

Note: As for the use of the gaskets in which contain the material of asbestos, it shall meet the requirements of the relevant laws and regulations. If the aforesaid gaskets are used, the protective measures shall be adopted to prevent man from damaging.

2. Normative references

The following provisions contained in the following standards are turned into the provisions of this national standard by being referred in this national standard. For date reference, the subsequent amendments to (excluding amending error in the text) or revisions of, any of these publications do not apply. And parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. For undated references, its latest edition referred to applies.

GB/T 528 "Rubber, Vulcanized or Thermoplastic--Determination of Tensile Stress-strain Properties"

GB/T 539 "Oil-resisting compressed asbestos fiber jointing"

GB/T 3280 "Cold rolled stainless steel plate sheet and strip"

GB/T 3985 "Compressed asbestos fiber jointing"

HG/T 20615 "Steel Pipe Flange (Class Designated)"

HG/T 20623 "Major Diameter Steel Pipe Flange (Class Designated)"

HG/T 20635 "Specification for Selection of Steel Pipe Flange, Gaskets and Bolting (Class designated)"

JB/T 6613 "The classification code and sign of flexible graphite sheets/strip"

JB/T 6628 "Reinforced flexible graphite (sheets) gaskets"

JB/T 7758.2 "Specifications of flexible graphite sheets"

QB/T 3625-1999 "PTFE sheet"

3. Material and working conditions

3.0.1 Material category

The materials of the non-metallic flat gaskets for use with steel pipe flanges contain:

1 Natural rubber, neoprene, styrene-butadiene rubber, chemigum, ethylene propylene diene copolymer and viton;

manufacturer's brand shall be indicated. The applicable pressure, temperature and maximum (P×T) value of the gaskets shall be determined according to the working condition.

3.0.3 Working Conditions

Working conditions of the nonmetallic flat gaskets shall meet the requirements of Table 3.0.3.

Table 3.0.3 Working Conditions of Non-metallic Flat Gaskets

Classification	Name		Standard	Code name	Application Range		Maximum (p×T) (MPa×°C)
					Nominal pressure Class	Working temperature (°C)	
Rubber	Natural rubber			NR	150	-50-+80	60
	Neoprene			CR	150	-20-+100	60
	Chemigum			NBR	150	-20- +110	60
	Styrene-butadiene rubber			SBR	150	-20-+90	60
	Ethylene propylene diene copolymer			EPDM	150	-30-+140	90
	Viton			FKM	150	-20-+200	90
Asbestos rubber	Paronite		GB/T 3985	XB350	150	-40-+300	650
				XB450			
	Oil-resisting paronite		GB/T 539	NY400			
Non asbestos fiber rubber	Non asbestos fiber rubber pressing ^a	Inorganic fiber	b	NAS	≤300	-40-+290 ^d	960
		Organic fiber				-40-+200 ^d	
Teflon	PTFE sheet		QB/T 3625	PTFE	150	-50-+100	
	Expansion PTFE sheet/strip		b.c	ePTFE		-200-+200 ^d	
	Stuffing modified PTFE sheet			RPTFE	≤300		
Flexible graphite sheets	Reinforced flexible graphite sheet ^c		JB/T 6628 JB/T 7758.2	RSB	≤600	-240-+650(used in oxidative medium: -240 - +450)	1200
High-temperature mica	High-temperature mica composite plate				≤600	-196-+900	

Note: 1 Reinforced flexible graphite sheet is compounded by stainless steel impacting or punch drying plate and expanded graphite particle. And stainless steel impacting or punch drying plate plays a role in enhancement.

Table 4.0.2-1 The Dimension Ff-type Gasket for Use with Flat Face Flange Class150 (PN20) (mm)

Nominal dimension		Inside diameter of the gasket ^a D ₁	Outside diameter of the gasket D ₂	Number of bolt hole n (piece)	Diameter of bolt hole L	Diameter of bolt-hole center circle K	Gasket thickness ^b T
DN	NPS						
15	1/2	22	89	4	16	60.3	1.5 ^c
20	1 1/4	27	98	4	16	69.9	
25	1	34	108	4	16	79.4	
32	1 1/4	43	117	4	16	88.9	
40	1 1/2	49	127	4	16	98.4	
50	2	61	152	4	18	120.7	
65	2 1/2	77	178	4	18	139.7	
80	3	89	191	4	18	152.4	
100	4	115	229	8	18	190.5	
125	5	141	254	8	22	215.9	
150	6	169	279	8	22	241.3	
200	8	220	343	8	22	298.5	
250	10	273	406	12	26	362.0	
300	12	324	483	12	26	431.8	
350	14	356	533	12	30	476.3	3 ^d
400	16	407	597	16	30	539.8	
450	18	458	635	16	33	577.9	
500	20	508	699	20	33	635.0	
600	24	610	813	20	36	749.3	

a D1 is the maximum inside diameter of the gasket. The other diameters of the internal diameters gasket may be determined by the user, but it shall be indicated at the order time.

b Gasket thickness T listed in the table is recommended gasket thickness.

c Rubber blanket thickness is larger than or equal to 1.5mm.

d Rubber blanket thickness is larger than or equal to 3mm.

(Continued) (mm)

Nominal dimension		Inside diameter of the gasket ^a D ¹	Outside diameter of the gasket D ₂ Nominal pressure Class			Gasket thickness ^b T	Wrapping width b
DN	NPS		150	300	600		
125	5	140	196.0	215.0	240.0	1.5	3
150	6	169	221.5	250.0	265.0		
200	8	220	278.5	306.0	319.0		
250	10	273	338.0	360.5	399.0		
300	12	324	408.0	421.0	456		
350	14	356	449.5	484.5	491		
400	16	407	513.0	538.5	564.0	3	
450	18	458	548.0	595.5	612		
500	20	508	605.0	653.0	682.0		
600	24	610	716.5	774.0	790.0		

^a D1 is the maximum inside diameter of the gasket. The other diameters of the gasket may be determined by the user, but it shall be indicated at the order time.

^b Gasket thickness T listed in the table is recommended gasket thickness.

Table 4.0.2-4 RF- and RF-E-type Gasket Dimension for Use with the Raised Face Flange (HG/T 20623 B Designated) Whose Nominal Diameter is Larger than DN600 (mm)

Nominal dimension		Inside diameter of the gasket ^a D ₁	Outside diameter of the gasket D ₂			Gasket thickness ^b T	Wrapping width b
DN	NPS		Nominal pressure Class				
			150	300	600		
650	26	660	724.5	770.0	764.5	4	
700	28	711	775.5	824.0	818.5		
750	30	762	826.0	885.0	879.0		
800	32	813	880.0	939.0	932.0		
850	34	864	933.5	993.0	998.0		
900	36	914	985.5	1047.0	1049.0		
950	38	965	1043.0	1098.0			
1000	40	1016	1093.5	1148.5			
1050	42	1067	1144.5	1199.5			
1100	44	1118	1195.5	1250.5			
1150	46	1168	1254.0	1317.0		5	
1200	48	1219	1305.0	1368.0			
1250	50	1270	1356.0	1419.0			
1300	52	1321	1406.5	1469.5			
1350	54	1372	1462.0	1530.0			
1400	56	1422	1513.0	1595.0			
1450	58	1473	1578.5	1657.0			
1500	60	1524	1629.0	1708.0			

a D₁ is the maximum inside diameter of the gasket. The other diameters of the gasket may be determined by the user, but it shall be indicated at the order time.

b Gasket thickness T listed in the table is recommended gasket thickness.

**Table 4.0.2-6 TG-type Gasket Dimension for Use with Tongue and Groove Face Flange
Class300 (PN50)-Class600 (PN110) (mm)**

Nominal dimension		Inside diameter of the gasket D ₁	Outside diameter of the gasket D ₂	Gasket thickness ^a T	Nominal dimension		Inside diameter of the gasket D ₁	Outside diameter of the gasket D ₂	Gasket thickness ^a T
DN	NPS				DN	NPS			
15	1/2	25.5	35.0	1.5 ^a	150	6	190.5	216.0	1.5 ^a
20	3/4	33.5	43.0		200	8	238.0	270.0	
25	1	38.0	51.0		250	10	286.0	324.0	
32	1 1/4	47.5	64.0		300	12	343.0	381.0	
40	1 1/2	54.0	73.0	1.5 ^a	350	14	374.5	413.0	3 ^a
50	2	73.0	92.0		400	16	425.5	470.0	
65	2 1/2	85.5	105.0		450	18	489.0	533.0	
80	3	108.0	127.0		500	20	533.5	584.0	
100	4	132.0	157.0		600	24	641.5	692.0	
125	5	160.5	186.0						

^a Gasket thickness T listed in the table is recommended gasket thickness.

5. Technical requirements

5.0.1 Dimension tolerance of FF-type and RF-type gaskets shall meet the requirements of Table 5.0.1.

5.0.2 Dimension tolerance of MFM-type and TG-type gaskets shall meet the requirements of Table 5.0.2.

Table 5.0.1 Dimension Tolerance of FF-type and RF-type Gaskets (mm)

Nominal dimension	≤DN300 (NPS12)	≥DN350 (NPS14)
Inside diameter D_1	±1.5	±3.0
Outside diameter D_2	0 -1.5	0 -3.0
Diameter K of FF-type bolt-hole center circle	±1.5	
Adjacent bolt hole center distance	±0.75	

Table 5.0.2 Dimension Tolerance of MFM-type and TG-type Gaskets (mm)

Inside diameter D_1	Outside diameter D_2
+1.0	0
0	-1.0

5.0.3 Thickness tolerance of the 1.5mm-thickness gasket is ± 0.1 mm; and thickness tolerance of the gasket whose thickness is larger than or equal to 3mm is ± 0.20 mm. The thickness difference of the same gasket shall not be larger than 0.20mm.

5.0.4 Gasket shall be flat and without buckling deformation. there shall not be slag inclusion, crack, bubble, extraneous material and other defects. The margin shall be cut tidily.

5.0.5 The gasket shall be made by a full sheet plate and there shall not be joints. If it must be jointed due to the dimension, the jointed section number, type and quality shall be permitted and determined by the buyer.

Note: Joint type contains dovetail groove type joint, cross-cutting button type joint or weld.

6. Marking illustration

Illustration 1: As for the raised face flange whose nominal dimension is DN100 and nominal pressure is Class150, the XB450 asbestos-packing gasket wrapped with 0Cr18Ni9(304) stainless steel shall be selected; and its marking is:

HG/T 20627 gasket RF—E 100—150 XB450/304

Illustration 2: As for the raised face flange whose nominal dimension is DN1500 (HG/T 20623 A type flange) and nominal pressure is Class150, the stuffing modified PTFE gasket in thickness of 1.5mm shall be selected. The marking is:

HG/T 20627 gasket RF 1500A—150 RPTFE(AAA/BBB)

Note: When the specific manufacturer (AAA) and grade (BBB) are selected by the user, the attaching label shall be marked (AAA/BBB) on the gasket marks.

Illustration 3: As for the flat face flange whose nominal dimension is DN 500 and