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CHEMICAL INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

HG/T 20635-2009

Specification for ion of steel pipe flanges, gaskets and bolting (Class designated)

钢制管法兰、垫片、紧固件选用配合规定(Class系列)

(English Translation)

Issued on: February 5, 2009 **Implemented on: July 1, 2009**

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

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1. Scope

1 Scope

This standard specifies the general rules for the selection of steel pipe flanges, gaskets and bolting (C1ass designated).

This standard is applicable to the steel pipe flanges, gaskets and bolting specified in HG/T 20615- HG/T 20634.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this national standard. For dated reference, subsequent amendments (excluding amending error in the text) to, or revisions of, any of these publications do not apply. However, parties to agreement based on this standard are encouraged to research whether the latest editions of these references are applied or not. For undated references, the latest edition of the normative document is applicable to this national standard.

"Steel Pipe Flanges (Class Designated)" HG/T 20615 "Steel Pipe Flanges in Large Diameter (C1ass designated)" HG/T 20623 "Non-metallic Flat Gaskets for use with Steel Pipe Flanges (C1ass designated)" HG/T "PTFE Envelope Gaskets for use with Steel Pipe Flanges (C1ass designated)" HG/T "Metal Jacketed Gaskets for use with Steel Pipe Flanges (C1ass designated)" HG/T "Spiral Wound Gaskets for use with Steel Pipe Flanges (C1ass designated)" HG/T 20631 "Covered Serrated Metal Gaskets for use with Steel Pipe Flanges (C1ass designated)" HG/T 20632 "Metallic Ring Joint Gaskets for use with Steel Pipe Flanges (C1ass designated)" HG/T "Bolting for use with Steel Pipe Flanges (C1ass designated)" HG/T 20634

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3.1 Pipe flanges

3.1.1

The type and application scope of flanges shall meet the provisions of Table 3.1.4 of HG/T 20615 and Table 3.1 of HG/T 20623. For its common scope, refer to Table 3.1.1.

temperature shall not exceed 450°C.

3.2.7 The asbestos and non-asbestos gaskets shall not be used in dangerous media or high vacuum seal occasions.

3.2.8 As for the PTFE flat gaskets which have cold flow inclination, their sealing surface type should be flat face type or their maximum service temperature should be no bigger than 100°C.

3.2.9 As for the standard pipe flanges whose nominal pressure is Class150, when semimetal gaskets such as spiral wound gaskets, metallic envelope gaskets or metallic ring gaskets are adopted, flanges (e.g.. weld neck flange) that have good rigidity shall be selected.

3.2.10 The inside diameter of the nonmetallic flat gaskets and wound gaskets listed in HG/T 20627 and HG/T 20631 may be larger than that of the corresponding flanges, if the inside diameter of required gaskets (or inner rings) is equal to that of the flanges, the users may put forward the following requirements.

1 Adopting integral type flanges, weld neck flanges or socket welding flanges.

2 Provide corresponding flange inside diameter to the gasket manufacturer as the inside diameter of gaskets.

3.2.11 Table 3.2.11 is the selection table of gasket types.

Socket

welding

flange

Butt

welding

ring loose

flange

Blind flange

Semimetallic

Serrated

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compound gaskets 150~2500 15~1500 (A, B) e Raised face Female face/male face Tongue face/groove face 3.2~6.3 Slip on neck flange Weld neck flange Long hubbed flanges Integral type flange Socket welding flange Blind flange Metallic envelope gaskets 300~900 f Raised face 1.6~3.2 (Carbon steel, non-ferrous metal) 0.8~1.6 (Stainless steel, nickel-base alloy) Weld neck flange Long hubbed flange Integral type flange Blind flange Metallic Metallic ring gaskets 150~2500 700 Ring joint face 0.8~1.6 (Carbon steel, chrome steel) 0.4~0.8 (Stainless steel) Weld neck flange Long hubbed flange Integral type flange Blind flange a The service temperature scope of different natural rubber and synthetic rubber varies, refer to Appendix A of this standard and HG/T 20627.

b The main raw materials for non-asbestos fiber rubber plate are different and their service temperature scope are also different, you may refer to Appendix A of this standard and consult to the producer.

c When the reinforced flexible graphite plates are used for oxidizing media, the maximum service temperature shall be 450°C.

d The wound gaskets shall be combined according to the metallic tapes and filling materials, their service temperature scope HG/T 20634 as well as Table 3.2.11 of this standard.

3.3.3 The commercial-grade bolting and special-grade bolting shall be used in accordance with the provisions of Chapter 5 of HG/T 20634 and Table 3.2.11 of this standard.

3.3.4 As for the bolting used under low temperature, provisions shall be made on its low-temperature impact tenacity.

3.3.5 When the bolting is used within the range of creep temperature, the loss of bolt load

caused by loose bolts shall be considered as this may influence the sealability of the flange joints.

3.3.6 The bolting material used at high temperature shall have similar thermal expansion coefficient as the flange material.

3.3.7 The low intensity bolting can only be used when the nominal pressure is less than or equal to Class300; the flange joints that adopt nonmetallic flat gaskets shall not be used at severe cyclic working condition. The applicable working temperature of Grade 5.6 low intensity carbon steel bolting should not be greater than 200°C.

3.3.8 The hexagon head bolts are only applicable to occasions when the nominal pressure is less than or equal to class150.

3.3.9 The bolting and screw nuts shall be combined according to the provisions of Table 5.0.4 of HG/T 20634 while the selection match between screw bolts and nuts shall meet the

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provisions of Table 3.3.1.

3.3.10 The selection match of flanges, bolting and gaskets shall meet the provisions of Table 3.3.10.

Table 3.3.10 Selection Match of Bolting and Gaskets for Standard Flanges

Nominal pressure

Class Gasket type Strength level of screw bolt

·Nonmetallic flat gaskets

·PTFE envelope gaskets Low strength, medium strength a, high strength a

·Spiral wound gaskets

·Cladding with serrated gaskets Medium strength, high strength

·Metallic ring gaskets (not adopted generally) High strength

·Nonmetallic flat gaskets

·PTFE envelope gaskets Medium strength, high strength

·Spiral wound gaskets

·Cladding-with serrated gaskets or metallic flat gaskets Medium strength, high strength

·Metallic envelope gaskets

·Metallic ring gaskets High strength

·Reinforced flexible graphite plates

·High temperature vermiculite composite reinforcement plates Medium strength, high strength b

·Spiral wound gaskets

·Cladding-with serrated gaskets or metallic flat gaskets Medium strength, high strength

·Metallic envelope gaskets

·Metallic ring gaskets High strength >=900

·Spiral wound gaskets

·Cladding-with serrated gaskets or metallic flat gaskets High strength

·Metallic envelope gaskets (not adopted generally)

·Metallic ring gaskets High strength a Flat face gaskets shall be adopted or controlled tightening torque shall be controlled.

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