

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Pipe Couplings

with type designation(s)
GRIP-G (non-fire resistant), GRIP-GF (fire resistant)

Issued to

Beijing Grip Pipe Tech. Co.Ltd
Beijing, China

is found to comply with

DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV class programme DNV-CP-0185 – Type approval – Mechanical joints

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Type:	Temperature range:	Max. working press.:	Sizes:
GRIP-G (non-fire resistant)	up to +120°C depending on sealing ring material.	up to 18 bar depending on size.	26.9mm up to 610mmm
GRIP-GF (fire resistant)	up to +120°C depending on sealing ring material.	up to 18 bar depending on size.	26.9mm up to 426mm

Issued at **Hamburg** on **2024-01-19**

This Certificate is valid until **2029-01-18**.

for **DNV**

DNV local unit: **Dalian NB & CMC**

Approval Engineer: **Hagen Markus**

Sven Klinger
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

Slip-on joint grip type coupling with NBR/EPDM sealing sleeves. Type GRIP-G (non-fire resistant) and GRIP-GF (fire resistant).

Reference: Product catalogue "Beijing Grip Pipe Technology Co., Ltd."

Assembly drawings

Type	Coupling design	Assembly drawing
Type GRIP-G	Axially restrained with double anchor rings	GRIP-GXX-00, Version: GRIP-G-01
Type GRIP-GF	Same design as GRIP-G plus fire cover	GRIP-GFXXX-00, Version: GRIP-GF-01

Materials – Pipe coupling GRIP-G and GRIP-GF

Component	Material grade	Reference
Casing	AISI 304, AISI 316L, AISI316, AISI316TI	GB/T3280:2007
Bolt, U-shaped bolt		
Bar		
Anchoring ring		
Flat Mat		
Lining		
Strip insert (optional)		
Sealing sleeve	NBR	Document No.: BJGRIP-D06
	EPDM	

Additional components for coupling type GRIP-GF

Component	Material specification	Remarks
Fireproof rubber belt	Expanded fireproof rubber Fibre rubber outer YD-A Document No.: BJGRIP-D06	Non-combustibility tested EN ISO 1182:2010
Fireproof cloth	Document No.: BJGRIP-D06	Product code HS-600-100

Overview sizes and nominal pressure PN

Pipe O.D. ¹	Coupling type	PN bar	Vacuum bar(g)
26.9mm up to 88.9mm	GRIP-G, GRIP-GF	18	-0.2
100.6mm up to 168.3mm		16	
219.1 ² mm up to 426mm	GRIP-G	10	-0.2
219.1 ² mm up to 426mm	GRIP-GF		

Notes

¹ Clamping range pipe outside diameter refer to drawing GRIP-GXXX-00 and GRIP-GFXXX-00".

² Coupling sizes >219.1 are not approved for installation in machinery spaces or other areas with vibration load due to missing vibration test on sizes >219.1mm

Temperature range¹

Sealing sleeve material	Service temperature	Size range
NBR	-25°C up to +100°C	26.9mm up to 426mm
EPDM	-30°C up to +120°C	

Notes

¹ Refer to Product catalogue: Grip Pipe Tech BEIJING GRIP PIPE TECHNOLOGY CO., LTD.

Application/Limitation

The slip-on joint grip type couplings of type GRIP-G and GRIP-GF with size range 26.9 up to 426mm are type approved for installation in piping systems of pipe class II and III. For installation in machinery spaces and other installation areas with vibration load the size range is limited to 219.1mm.

Approved pipe materials: black carbon steel including hot dip galvanised, CuNiFe, copper and stainless steel.

For piping systems with defined "Fire endurance test condition" as specified in below table, the coupling type GRIP-GF shall be used. Confirmed fire endurance test condition is "30 min wet". Appropriate footnotes below regarding – Fire resistance capability are to be observed.

For application with indication "Fire endurance test not required" coupling type GRIP-G may be used. Reference DNV Pt.4 Ch.6 Section 9 – 5.2 Pipe couplings other than flanges – Table 9.

Approved applications

Piping systems		Classification of pipe system	Fire endurance test condition	Notes
Flammable fluids (flash point ≤ 60°C)				
1	Cargo oil lines	dry	30 min /dry	1)
2	Crude oil washing lines	dry		1)
Inert gas				
4	Water seal effluent lines	wet	30 min wet	none
5	Scrubber effluent lines	wet		none
6	Main lines	dry	30 min dry	1), 2)
7	Distribution lines	dry		1)
Flammable fluids (flash point > 60 °C)				
8	Cargo oil lines	dry	30 min dry	1)
9	Fuel oil lines	wet	30 min wet	2)
10	Lubricating oil lines	wet		2)
11	Hydraulic oil	wet		2)
12	Thermal oil	wet		2)
Seawater				
13	Bilge lines	dry/wet	8 min dry+22 min wet	4)
14	Water filled fire extinguishing systems (e.g., sprinkler)	wet	30 min wet	none
15	Non water filled fire extinguishing systems, e.g., foam, drencher systems	dry/wet	8 min dry+22 min wet	3)
16	Fire main (not permanently filled)	dry/wet	8 min dry+22 min wet	3)
17	Ballast systems	wet	30 min wet	none
18	Cooling water systems	wet	30 min wet	none
19	Tank cleaning services	dry	Fire endurance test not required	none
20	Non-essential systems	wet, dry/wet, dry		none
Fresh water				
21	Cooling water systems	wet	30 min wet	none
22	Condensate return systems	wet	30 min wet	none
23	Non-essential piping systems	wet, dry/wet, dry	Fire endurance test not required	none
Sanitary/drains/scuppers				
24	Deck drains (internal)	dry	Fire endurance test not required	5)
25	Sanitary drains	dry		none
Sounding/vent				
27	Water tanks/dry spaces	dry/wet	Fire endurance test not required	none
28	Oil tanks (flash point > 60 °C)	dry		none
Miscellaneous				
30	Service air piping systems (non-essential), e.g., breathable sounding system	dry	Fire endurance test not required	none

Footnotes - Fire resistance capability

- 1) Not approved for installation in pump rooms and open decks.
- 2) Not approved inside machinery spaces of category A or accommodation spaces.
May be accepted in other machinery spaces provided the joints are located in easily visible and accessible positions
- 3) Installation limited to on exposed open decks, as defined in SOLAS II-2/Reg. 9.2.3.3.2.2(10) and not used for fuel oil lines.
- 4) Not approved for installation in machinery spaces of category A.

Footnotes - General:

- 5) Only above bulkhead deck of passenger ships and freeboard deck of cargo ships.

Limitations

Slip-on joints are in general not approved for the following applications and installation areas:

- Starting air and control air piping systems
- CO2 fire extinguishing systems
- Steam systems
- In pipelines arranged in cargo holds, tanks and other spaces which are not easily accessible. Reference MSC/Cir.734. Application of these joints inside tanks may be permitted only for the same media that is in the tanks.
- In piping sections directly connected to sea openings or tanks containing flammable liquids which in the event of damage could cause flooding or fire.
- in piping systems with impulse pressure load other than water hammer, e.g., pressure lines of hydraulic piping systems.

Guidance notes

1 The couplings must be "easily accessible" as defined in MSC/Circ. 734.

That means during normal operating conditions:

- .1 located in a space normally entered without the use of tools;
- .2 clear of or protected from obstructions, moving equipment and hot surfaces that prevent operation or servicing
- .3 within arm's reach, or, within reach of a normally employed remote control device".

Application/Limitation – non class piping systems

The slip-on joint grip type coupling of type GRIP-G and GRIP-GF of size range 244.5 up to 610mm may be approved for non-class piping systems.

Overview sizes and nominal pressure PN

Pipe O.D. ¹	Coupling type	PN bar	Vacuum bar(g)
244.5mm up to 426mm	GRIP-G, GF	10	- 0.2
508mm up to 610mm	GRIP-G	0.03	

Notes

¹ Clamping range pipe outside diameter refer to drawing GRIP-GXXX-00 and GRIP-GFXXX-00".

Temperature range¹

Sealing sleeve material	Service temperature	Size range
NBR	-20°C up to +100°C	244.5mm up to 610 mm
EPDM	-30°C up to +120°C	

Notes

¹ Refer to Product catalogue: Grip Pipe Tech BEIJING GRIP PIPE TECHNOLOGY CO., LTD.

Installation

The selection of the pipe couplings for the corresponding application and the right installation are to be in accordance with the instructions specified in the "Install and Use Maintenance Manual", Document No: GRIP20120606-02



Job Id: **262.1-018267-5**
Certificate No: **TAP00002MR**

Type Approval documentation

Tests carried out

DNV CP-0185

Tightness test, Repeated assembly test, Burst pressure test, Pull-out test, Vibration (endurance) test, Vacuum test, Fire resistance test (wet condition).

Marking of product

Pipe coupling and Fire sleeve.

Each pipe coupling and fire sleeve shall bear legible and durable marking on the body or on a plate fixed securely to the body. Scope of marking shall be at least as follows:

Scope	Example
Manufacturer's mark	Beijing Grip
Type	GRIP-GF
Size in mm / inch	88.9mm
PN	18bar
Gasket material	EPDM
Casing material	AISI 304

Periodical assessment

For retention of the Type Approval, a DNV Surveyor shall perform periodical assessment to verify that the conditions for the Type Approval are complied with. Refer to the Class Programme DNV-CP-0338, Sec.4.

To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>

End of certificate