



Marine & Offshore

Certificate number: 02570/J0 BV

File number: ACM 135/1909/2+3

Product code: 2106H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

*This certificate is issued to***STRAUB WERKE A.G.**

Wangs - SWITZERLAND

*for the type of product***MECHANICAL JOINTS - SLIP-ON JOINTS - GRIP TYPE**

STRAUB-GRIP-L, STRAUB-GRIP-LU and STRAUB-GRIP-L-FIRE-FENCE

STRAUB-GRIP-L.dot and STRAUB-GRIP-LU.dot

STRAUB-METAL-GRIP and STRAUB-METAL-GRIP.dot

STRAUB-METAL-GRIP-FIRE-FENCE

Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships

BUREAU VERITAS Rules for the Classification of Offshore Units

IACS P2.11 (2008) as amended

ISO 19921/19922 (First edition 2005-10-01)

*This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.**This certificate is a renewal of certificate N° 02570/10 BV expiring on 13/04/2022***This certificate will expire on: 13 Apr 2027****For Bureau Veritas Marine & Offshore,**

At BV HAMBURG, on 11 Mar 2022,

Udo Storm



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

STRAUB-METAL-GRIP and STRAUB-METAL-GRIP.dot
STRAUB-METAL-GRIP-FIRE-FENCE
STRAUB-GRIP-L, STRAUB-GRIP-LU and STRAUB-GRIP-L-FIRE-FENCE
STRAUB-GRIP-L.dot and STRAUB-GRIP-LU.dot

1.1 Design: (slip-on joints, grip type)

Axial restraint coupling with sealing and axial anchoring to join metal pipes with commercial outer diameter

1.2 Ratings:

STRAUB type	METAL-GRIP / METAL-GRIP.dot	METAL-GRIP-FIRE-FENCE
Size (mm)	30.0 to 406.4 pipe O.D.	30.0 to 219.1 pipe O.D.
Maximum service pressure (bar)	8 to 16 depending on size	8 to 16 depending on size

STRAUB type	GRIP-L, GRIP-L.dot, GRIP-L-FIRE-FENCE	GRIP-LU, GRIP-LU.dot
Size (mm)	26.9 to 219.1 pipe O.D.	180 to 406.4 pipe O.D.
Maximum service pressure (bar)	10 to 16 depending on size	2 to 5.5 depending on size

1.3 Temperature range (°C) depending on sealing material according to manufacturer's recommendation:

NBR	-20 / 80	HNBR (High definition NBR)	-20 / 125
EPDM	-30 / 100	VITON	-20 / 180
	-20 / 80 (244,5 to 406,4 mm)		

1.4 Material combination: W1, W2, W4 or W5

Components	W1	W2	W4	W5
Casing	AISI 1024, hot-dip galv.	AISI 304 AISI 316 Ti	AISI 304	AISI 316 Ti
Screws	AISI 4135	AISI 4135	AISI 316	AISI 316L
Bolts	AISI 12L14, galv.	AISI 12L14, galv.	AISI 304	AISI 316L
Strip insert (option)	AISI 316 L	AISI 316 L	AISI 316 L	AISI 316L

2. DOCUMENTS AND DRAWINGS:

According to the manufacturer's catalogue: „TECNICAL MANUAL SHIPBUILDING“, ST00249_0911, edition 2011 (English version)

3. TEST REPORTS:

- N° Z2 030520-e dated 21/05/2003 (Tightness test, vibration test, burst test, pull-out test, vacuum test and repeated assembly test). Specimen GL57.0, GL76.1, GL168.3, MG139.7 and MG168.3 Straub-Metal-Grip L/Straub Grip L
- N° Z 950629-e dated 29/06/1995 (Pressure tests with "archway" Gripper rings)
- N° G 2634 s dated 18/01/1979 (Vibration test)
- N° 921113-e dated 13/11/1992, N° 921023-e dated 23/10/1992 and N°920909 dated 22/09/1992, (Pressure tests, burst tests, vacuum tests, vibration tests and fire test)
- N° Z 960207-e dated 07/02/1996 (Pressure tests, vacuum tests, vibration tests and fire test)
- Fire test report N° Z 931209-e dated 09/12/1993
- Fire test report of type Grip-Fire-Fence and Grip-L-Fire-Fence N° Z1 080611 e and WTD 71 N° 81114/35-08; 40-08; 41-08; 42-08; 62-08; 63-08; 64-08 and 65-08 acc. to ISO 19921/19922

4. APPLICATION / LIMITATION:

- 4.1 May be used on board for services of class II and class III piping systems:
- Flammable fluids (flash point $\leq 60^{\circ}\text{C}$) - cargo oil 5, crude oil washing 5, vent lines 3
 - Inert gas - water seal/scrubber effluent, main 2+5, distributions lines 5
 - Flammable fluids (flash point $> 60^{\circ}\text{C}$) - cargo oil 5, fuel oil 2+3, lubricating oil 2+3, hydraulic oil 2+3, thermal oil lines 2+3
 - Sea water - bilge/ballast/cooling water 1, fire main/water spray/foam/sprinkler systems 3, tank cleaning/non-essential lines
 - Fresh water - cooling water 1, condensate return 1, non-essential lines
 - Deck drains (internal) 4, sanitary drains
 - Sounding and venting - water tanks/dry spaces, oil tanks 2+3 (flash point $> 60^{\circ}\text{C}$)
 - Miscellaneous - service air (non-essential), brine, steam 6

Footnotes:

- 1- Inside machinery spaces of category A - only approved fire resistant type
- 2- Not 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- Approved fire resistant type
- 4- Above free board deck only
- 5- In pump rooms and open decks - only approved fire resistant type
- 6- Slip type joints provided they are restrained on the pipes, may be used for pipes on deck with a design pressure of 10 bar or less

- 4.2 The use of stainless steel is restricted as per BUREAU VERITAS Rules.
- 4.3 The sealing material must be compatible with the fluid to be conveyed and the maximum working temperature.
- 4.4 Approval also valid for ships to be granted with the notations AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS. Where notation AUT is expected, coupling screws are to be provided with locking devices.
- 4.5 Assembly instructions given by the manufacturer are to be complied with.
- 4.6 In all cases, the associated pipes are to be suitably supported and anchored. The joints are to be at any time accessible, excepting inside tanks where permitted by the BUREAU VERITAS Rules.

5. PRODUCTION SURVEY REQUIREMENTS:

- 5.1 The couplings are to be supplied by **STRAUB Werke AG** in compliance with the type described in this certificate.
- 5.2 This type of product is within the category HBV of BUREAU VERITAS Rule Note NR320 and as such does not require a BUREAU VERITAS product certificate.
- 5.3 **STRAUB Werke AG** has to make the necessary arrangements to have its works recognised by BUREAU VERITAS in compliance with the requirements of NR320 for HBV products.
- 5.4 For information, **STRAUB Werke AG** has declared to BUREAU VERITAS the following production sites:
STRAUB Werke AG, Wangs / SWITZERLAND

6. MARKING OF PRODUCT:

Each coupling is to be clearly marked with at least:

- Manufacturer's name or logo
- Type designation
- Size
- Nominal diameter
- Nominal pressure

7. OTHERS:

- 7.1 It is **STRAUB Werke AG**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.
- 7.2 This certificate supersedes the Type Approval Certificate N° 02570/I0 BV issued on 13 Apr 2017 by the Society.

***** END OF CERTIFICATE *****