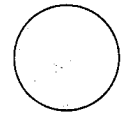


Type Approval Certificate



Germanischer Lloyd

This is to certify that the undernoted product(s) has/have been tested in accordance with the relevant requirements of the GL Type Approval System.

Certificate No. 78 717 - 79 HH

Company **Straub Werke AG**
Rohrverbindungen
Straubstrasse 13
7323 Wangs, SWITZERLAND

Product Description **STRAUB PIPE COUPLINGS**

Type **FLEX 1L, FLEX 2L, FLEX 2LS, FLEX 2LU, FLEX 2H, FLEX 3H • FLEX 1L.dot, FLEX 2L.dot, FLEX 2LS.dot, FLEX 2LU.dot, FLEX 2H.dot, FLEX 3H.dot**

Environmental Category • None

Technical Data / Range of Application **TECHNICAL DATA (see page 2)**

RANGE OF APPLICATION
The above mentioned couplings may be used considering the GL Rules Part 1- Seagoing Ships, Chapter 2, Section 11.D.2.6 as follows:
Bilge and ballast lines, fuel and oil lines, seawater lines, fresh and seawater cooling lines, fire fighting and deckwash lines, cargo oil lines, vent pipes, fill and sounding pipes, drinking water lines, sanitary discharge lines, inert gas lines on free deck, discharge lines from inert gas washers and deck water seals.

LIMITATIONS
The pipe couplings may not be used in bilge lines inside ballast and fuel tanks, seawater and ballast lines including air and overflow pipes inside cargo holds and fuel tanks, fuel and oil lines including air and overflow pipes inside machinery spaces, cargo holds and ballast tanks, dry pipe water spraying systems.

Test Standard • IACS P2.11 (Nov. 2001)

Documents • Test Reports
• Data sheets: D/145511A02/03 AT, D/145512A02/03 AT, D/145513A02/03AT, D/145110F01/01AT, D/145120F01/03AT, D/145130F01/03AT

Remarks • Fire endurance test acc. to IACS Req. P2.11.5.5.6

Valid until 2012-01-28

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Type Approval Symbol



File No. II.C.06

Hamburg, 2007-04-03

Germanischer Lloyd


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Werner Lippke

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TECHNICAL DATA

Type: FLEX 1L and FLEX 1L.dot {Material combination W2 or W5}
Size Range: 48.3 [mm] to 168.3 [mm] pipe O.D.
Nominal Pressure: PN 16

Type: FLEX 2L, FLEX 2LS, FLEX 2LU, FLEX 2H {Material combination W2 or W5, W1}
FLEX 2L.dot, FLEX 2LS.dot, FLEX 2 LU.dot, FLEX 2H.dot
Size: 180.0 [mm] to 609.6 [mm] pipe O.D.
M.A.W.P.: 3.5 [bar] to 25 [bar] {depending on size and type}

Type: FLEX 3H and FLEX 3H.dot {Material combination W1}
Size: 558.8 [mm] to 609.6 [mm] pipe O.D.
M.A.W.P.: 17.0 [bar] to 19.0 [bar] {depending on size}

Temp. Range: -20 [°C] to 80 [°C]
Sleeve Material: NBR and EPDM

MATERIALS

Material Combination	W1		W2		W5	
	DIN	AISI	DIN	AISI	DIN	AISI
Casing	1.0570 hot dip galv.	1024 hot dip galv.	1.4571	316Ti	1.4571	316Ti
Screws	1.7220	4135	1.7220	4135	1.4404 / 1.4435	316L
Bolts	1.0737 galv.	12L14 galv.	1.0737 galv.	12L14 galv.	1.4404 / 1.4435	316L
Strip insert (option)	1.4435	316L	1.4435	316L	1.4435	316L

- The selection of the pipe couplings for the corresponding application and the right installation are to be in accordance with the instructions of the manufacturer.

Valid until 2012-01-28

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Type Approval Symbol



File No. II.C.06

Hamburg, 2007-04-03

Germanischer Lloyd

Günter Hölzer

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