Certificate no.:
TAP000032S

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Pipe Couplings

with type designation(s)
NORMACONNECT FLEX / FLEX E / FlexGrip / FlexGrip E and Fire protected types FP, RFP

issued to
Norma Czech, s.r.o.
Hustopeče u Brna, **Czech Republic**

is found to comply with
DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV rules for classification – Naval vessels
DNV-OS-D101 – Marine and machinery systems and equipment, Edition July 2021
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.

Temperature range:	**-30° C up to +125° C**
Max. working press.:	**up to 16 bar**
Sizes:	**Pipe O.D. 26.9 mm up to 406,4 mm**

Issued at **Hamburg** on **2025-11-17**
This Certificate is valid until **2030-09-17**.
DNV local unit: **Ostrava**

for **DNV**

Approval Engineer: **Jörg Hille**

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 USD 300 000.

Product description

Slip-on joint flex type pipe coupling with EPDM/NBR gaskets. Fire protected types FP series and RFP Retrofittable Fire Protector.
Reference “NORMA TECHNICAL MANUAL NORMACONNECT® Pipe Couplings Flex / Grip / FP / RFP Series”.

Technical Data

Components	Material combination[1]		
	W2	W4	W5
Housing with bridge	1.4301/AISI 304	1.4301/AISI 304	1.4571/AISI 316 Ti
Sealing sleeve	EPDM/NBR/FKM[2]	EPDM/NBR/FKM[2]	EPDM/NBR/FKM[2]
Strip insert	1.4571/AISI316Ti, PA-GR		
Anchoring ring	1.4310 / AISI 301		
Solid locking trunnions	1.0715/AISI 1213	1.4404/AISI 316L	1.4404/AISI 316L
Hollow locking trunnions	1.0580/AISI 1518	1.4571/ AISI 316Ti, 320 S31	1.4571/ AISI 316Ti, 320 S31
Locking bolts	10.9	A4-80/AISI 316	A4-80/AISI316
Washer	A4-80/AISI 316		

Notes
[1] Material combination according to “NORMA TECHNICAL MANUAL”.
[2] FKM for steam applications

Size and nominal pressure range

Type	Pipe size O.D.[1] mm	Nominal Pressure PN (bar)
Grip E	26,9 – 168,3	16
	193,7 – 225,0	10
	up to 306	5,5
	up to 326,0	3,0
	355,6	2,7
	406,4	2,5
Grip	170 – 219,1	16
	up to229,9	13
	244,5	12
	254	11,5
	up to 273	11
	306,0	9,5
	up to 326,0	6,5
	355,6	6,0
	406,4	4,5

Note
[1] Clamping range of the couplings according to “NORMA TECHNICAL MANUAL”.

Temperature range[1]

Coupling	Sealing	Temperature
Grip / Grip E <180,0 mm	EPDM[2]	-30 to +125 °C
Grip / Grip E ≥180,0 mm		-20 to +80 °C
All types	NBR	-20 to +80 °C
All types	FKM	-10° C to +150° C

Notes
[1] According to “NORMA TECHNICAL MANUAL”
[2] EPDM is not to be used for hydrocarbon applications.

Application/Limitation

The slip-on joint flex type couplings of the NORMA-Grip series are type approved for application in pipe class III piping systems.
Reference: DNV-RU-SHIP Pt.4 Ch.6 Piping system, Sec. 9, Table 8 Examples of mechanical joints – Slip on joints – Flex type. Fire endurance test condition “30 min. wet”.

Piping systems		Application/ Limitation
Flammable fluids (flash point ≤ 60°C)		
1	Cargo oil lines	Not approved for installation in pump rooms and open decks.
2	Crude oil washing lines	
3	Vent lines	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.
Inert gas		
4	Water seal effluent lines	Approved
5	Scrubber effluent lines	
6	Main lines	Not approved for installation in pump rooms and open decks.
		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.
7	Distribution lines	Not approved for installation in pump rooms and open decks.
Flammable fluids (flash point > 60 °C)		
8	Cargo oil lines	Not approved in pump rooms and open decks.
9	Fuel oil line.	Approved. 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.
10	Lubricating oil lines	
11	Hydraulic oil	
12	Thermal oil	
Seawater		
13	Bilge lines	Not approved for installation in machinery spaces of category A.
14	Water filled fire extinguishing systems (e.g., fire main, sprinkler)	Approved
15	Non water filled fire extinguishing systems, e.g., foam, drencher systems	Approved 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.
16	Fire main (not permanently filled)	
17	Ballast systems	Approved
18	Cooling water systems	
19	Tank cleaning services	
20	Non-essential systems	
Fresh water		
21	Cooling water systems (ensuring main function)	Approved
22	Condensate return systems	
23	Non-essential piping systems, e.g. cooling water for air condition, sanitary, technical water systems	
Sanitary/drains/scuppers		
24	Deck drains (internal)	Approved for installation above bulkhead deck of passenger ships and freeboard deck of cargo ships.
25	Sanitary drains	Approved
26	Scuppers and discharge (overboard)	Not approved
Sounding/vent		
27	Water tanks/dry spaces	Approved
28	Oil tanks (flash point > 60 °C)	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.
		Approved 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.
Miscellaneous		
29	Starting/control air	Not approved in machinery spaces of category A.
30	Service air piping systems (non-essential), e.g., sounding system	Approved
31	Brine	Approved, depending on suitability of the wetted materials
32	CO_2 Systems (outside protected space)	Not approved
33	CO_2 Systems CO_2 system (inside protected space)	Not approved
34	Steam	Approved with FKM sealing. Approved 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.

Size range fire resistance types

For application where fire resistance is specified in Table 9 Application of mechanical joints of the RU-SHIP Rules Pt.4 Ch.6 Piping systems – Section 9, the pipe couplings are to be provided with flame protection of type “NORMACONNECT RFP” for the following size range:

- Grip E: 26.9 mm up to 219.1 mm,
- Grip: 219.1 mm up to 406.4 mm.

Limitations

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

- pipe lines inside cargo holds, tanks and other spaces which are not easily accessible
- scuppers and discharge (overboard)
- starting, control air and CO2 systems
- systems containing oxygen (more than 25% by volume)

Reference RU-SHIP Rules Pt.4 Ch.6 Piping systems – 5.2 Pipe couplings other than flanges and DNV class programme CP-0185.

Installation

Installation of pipe couplings inside tanks is permitted in case the pipes and tanks contain a medium of the same nature.

For correct mounting and installation of the couplings the instructions in the “TECHNICAL MANUAL “NORMACONNECT® Pipe Couplings” are to be observed.

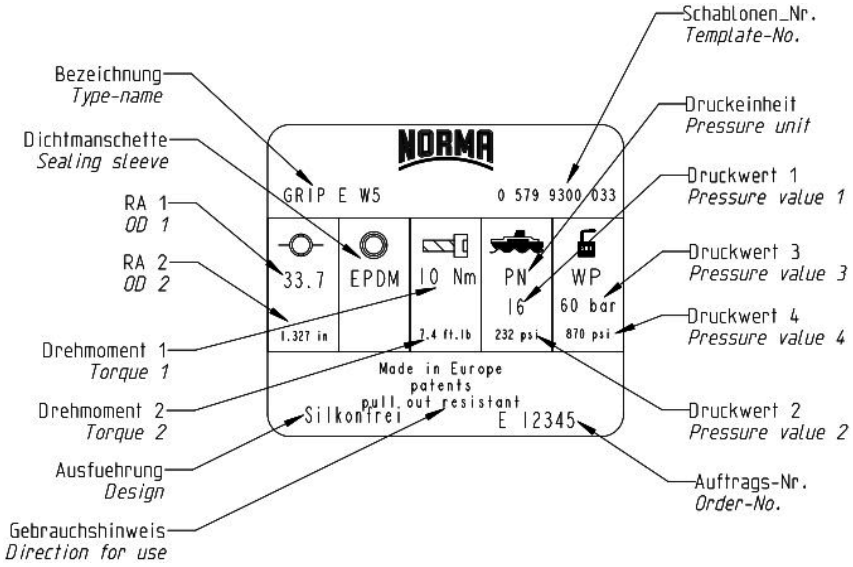
Type Approval documentation

Tests carried out

Visual inspection, Oil resistance test, Repeated assembly test, Tightness testusing angular pipe ends, Burst test, Vacuum test using angular pipe ends, Pull out test, Vibration test,
Fire resistance test (wet condition), Type FP and RFP.

Marking of product

For traceability of the product to this certificate ach pipe coupling, flame protection respectively shall be marked with at least as follows



Manufactured by:

NORMA Czech, s. r. o., Havličkova 28, 69301 Hustopeče, Czech Republik, is also responsible for the design and the production procedures with relation to ensuring continued consistent production of the type approved products. Reference DNV CP-0338 Type approval scheme, Section 4.

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, Section 4.

In addition, burst pressure testing on selected sizes to be carried out in the course of renewal of the certificate.

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

--- END OF CERTIFICATE ---