

Company Name Details

Company Information

Additional Company / Plant Detail

Confirmation of Type Approval

NORMA GERMANY GMBH
 MEMBER OF THE NORMA GROUP
 EDISONSTR. 4
 D-63477 MAINTAL
 Germany
 Tel -49-6181-403-312
 Fax -49-6181-4031312
 Email:
 markus.kraemer@normagroup.com
 Website: www.normagroup.com

This product doesn't have a Confirmation of Type Approval.

Certificate Number	Category	Expiry Date

Product Pipe Coupling (Connectors)
Model GRIP / GRIP E (Including FP/RFP Versions)
 FLEX / FLEX E (Including FP/RFP Versions)
 FLEXGRIP/FLEXGRIP E (Including FP/RFP Versions)

Endorsements

Tier 2 - PDA Issued

Intended Service Pipe couplings for approved applications, as per 4-6-2/Tables 10 and 11 of the Marine Vessel Rules, in shipboard piping systems. Fire resistant versions FP/RFP (RFP-retrofittable fire protection features).

Normaconnect: GRIP (OD = 26.9 to 168.3 mm, FP/RFP: 26.9 to 168.3 mm), GRIP (OD = 180 to 219.1 mm, FP/RFP: 180 to 219.1 mm), GRIP E (OD = 26.9 to 168.3 mm, FP/RFP: 26.9 to 168.3 mm), GRIP E (OD = 180 to 406.4 mm, FP/RFP: 180 to 406.4 mm), FLEX/FLEX E (OD = 26.9 to 168.3 mm, FP/RFP: 26.9 to 168.3 mm), FLEX/FLEX E (OD = 180 to 1200 mm, FP/RFP: 180.0 to 406.4 mm).

I. Normaconnect: GRIP and GRIP E - Axial restraint pipe connectors for metallic pipes, secured against tension. Stainless steel couplings available of materials identified by manufacturers group designations W2, W4, W5, with non metallic sleeves of "EPDM" or "NBR" material. All couplings with standard steel strip insert (synthetic strip insert optional), heavy duty locking trunnions, conical stamped grip ring and two (2) lip sealing system (Type GRIP E with hollow trunnions).

II. Normaconnect: FLEX/FLEX E- Clamp type fixtures for metallic and plastic pipes. Stainless Steel Couplings available for materials identified by manufacturers' group designations W2, W4, and W5 with non metallic sleeves of material "EPDM" or "NBR". Couplings FLEX/FLEX E differing in the thickness of casings. All couplings with heavy duty locking trunnions, two (2) lip sealing arrangement and standard steel strip insert (synthetic strip insert optional). Types FLEX E with hollow trunnions.

Description

Note to Item I and II above. Couplings for pipe sizes 26.9 OD up to 168.3 mm OD will be provided with non metallic sleeves made of improved quality "EPDM" material that would allow for an increased service temperature range from -30° C to + 125° C; -20° C to +80° C (EPDM/NBR) all other pipe sizes.

Normaconnect: FLEXGRIP/FLEXGRIP E + FP/RFP versions (Diameter range up to OD168.3mm). Represent a type GRIP/FLEX combination. (Axial restraint on one side and provided with clamp type fixtures on the other end). Stainless steel couplings available of materials identified by manufacturer' s group designations W2, W4 and W5 FLEXGRIP/FLEXGRIP E + FP/RFP versions with nonmetallic sleeves of "EPDM" or "NBR" material. FLEXGRIP + FP/RFP couplings with heavy duty locking trunnions. Locking trunnions of FLEXGRIP E + FP/RFP versions connectors hollow. Both versions with two lip sealing arrangement and standard steel strip insert (synthetic strip insert optional).

All pipe connectors: Temperature range -30° C to +125° C (EPDM); -20° C to +80° C (NBR).

Normaconnect: GRIP: Nominal pressure rating (ND) all sizes up to 168.3: 16 bar.

Normaconnect: GRIP E: Nominal pressure rating (ND) all sizes up to 168.3: 16 bar.

Normaconnect: GRIP E: Nominal pressure rating (ND) larger than 168.3: max 10 bar, depending on actual diameter.

Normaconnect: FLEX/FLEX E: Nominal pressure rating (ND) all sizes up to 168.3: 16 bar.

Normaconnect: FLEX/FLEX E: Nominal pressure rating (ND) max 23.5 bar, depending on actual diameter.

(The above also includes the connector FP/RFP versions).

Ratings

Normaconnect: FLEXGRIP/FLEXGRIP E + FP/RFP versions: Nominal pressure rating (ND) all sizes 16 bar.

1. Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Note: Some Administrations may have more restrictions than those applied from the ABS Rules and each application must be to the satisfaction of the Flag State.

2. GRIP / GRIP E (Including FP/RFP Versions), FLEX / FLEX E (Including FP/RFP Versions)

3. F-type couplings may also be used for connecting plastic pipes, where permitted by 4-6-3/Table 1 of the Marine Vessel Rules, where no fire endurance testing of plastic pipes is required.

**Service
Restrictions**

4. Where plastic pipes are to be utilized for any installation within tanks or other locations which may be subject to a vacuum condition inside the pipe or a head of liquid on the outside of the pipe, external pressure is to be considered. The pipe is to be designed for an external pressure of not less than the sum of the pressure imposed by the maximum potential head of liquid outside the pipe plus full vacuum of 14.5 psi (1 bar) inside the pipe. The maximum external pressure for a pipe is to be determined by dividing the collapse test pressure by a safety factor of 3. This collapse pressure may be verified experimentally or determined by a combination of testing and calculation methods. These details are to be submitted to ABS before installation of the pipe, for ABS approval on a case by case basis.

5. FLEXGRIP/FLEXGRIP E (Including FP/RFP Versions)

6. Couplings are not to be used for joining plastic pipes.

1. The maximum piping misalignment and maximum allowable axial movement per coupling is to be limited as per manufacturer' s specification.

2. In piping systems where generation of electrostatic charge would cause a hazardous situation the couplings are only to be used in conjunction with means that provide proper conductivity and thus prevent such electrostatic charge.

Comments

3. The installation of the couplings is to be carried out according to manufacturer' s specifications. Sealing sleeves to be utilized as per manufacturer' s recommendation.

4. The manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes, Drawing and Documentation

Norma Group Test Report No. 13607-2-e Flex E 168.3 W2, Test protocol pressure test on pipe coupling dated 20-02-2019, Revision: -, Pages: 4;
Norma Group Test Report No. 13609-2-e Grip E 168.3 W2, Test protocol pressure test on pipe coupling dated 21-02-2019, Revision: -, Pages: 5;
Norma Group Test Report No. 13609-3-e Grip E 168.3 W2, Test protocol pressure test on pipe coupling dated 21-02-2019, Revision: -, Pages: 5;
Norma Group Test Report No. 13607-1-e Flex E 168.3 W2, Test protocol pressure test on pipe coupling dated 20-02-2019, Revision: -, Pages: 4;
Norma Group Test Report No. 13607-3-e Flex E 168.3 W2, Test protocol pressure test on pipe coupling dated 22-02-2019, Revision: -, Pages: 4;
Norma Group Test Report No. 13611-1-e Grip E 406.4 W2, Test protocol pressure test on pipe coupling dated 26-03-2019, Revision: -, Pages: 5;
Norma Group Test Report No. 13609-1-e Grip E 168.3 W2, Test protocol pressure test on pipe coupling dated 20-02-2019, Revision: -, Pages: 5;
Norma Group Test Report No. 14249-1-e Flex 219.1 W2, Test protocol pressure test on pipe coupling dated 15-11-2019, Revision: -, Pages: 4;
Norma Group Test Report No. 14738-1-e Grip E 219.1 W5, Test protocol pressure test on pipe coupling dated 17-09-2021, Revision: -, Pages: 4;
Norma Group Test Report No. 14338-1-e Grip E 48.3 W2, Test protocol pressure test on pipe coupling dated 15-09-2021, Revision: -, Pages: 4;
Norma Group Test Report No. 15312-1-e Grip 219.1 W2, Test protocol pressure test on pipe coupling dated 05-06-2021, Revision: -, Pages: 5;
Norma Group Test Report No. 15002-1-e Flex E 26.9 W5, Test protocol pressure test on pipe coupling dated 01-03-2021, Revision: -, Pages: 5;
WTD 71 Protokoll Nr. 90705/06_09, Flameproof Test Flex Grip E W2 D26.9 dated 23-04-2009, Revision: -, Pages: 2;
WTD 71 Protokoll Nr. 90705/08_09, Flameproof Test Flex E W2 RA76.1 dated 23-04-2009, Revision: -, Pages: 2;
WTD 71 Protokoll Nr. 90705/09_09, Flameproof Test Straub Grip L D76.1 dated 23-04-2009, Revision: -, Pages: 2;
Drawing No. FlexGrip FlexGrip E Article Number 0585, OD 26.9 to 168.3mm, Revision: -, Pages: 24;
Drawing No. Grip Couplings Article Number 0578, OD 26.9 to 168.3mm, Revision: -, Pages: 22;
Drawing No. Flex Couplings Article Number 0573, OD 26.9 to 168.3mm, Revision: -, Pages: 40;
Drawing No. Flex E Couplings Article Number 0582, OD 26.9 to 168.3mm, Revision: -, Pages: 40;
Drawing No. Grip E Couplings Article Number 0579, OD 26.9 to 168.3mm, Revision: -, Pages: 28;
Drawing No. Grip Couplings Article Number 0577, OD 180 to 219.1mm, Revision: -, Pages: 8
Drawing No. Grip E coupling Article Number 0574, OD 180 to 406.4mm, Revision: -, Pages: 16;
Drawing No. Flex Coupling Article Number 0575, OD 180 to 1220mm, Revision: -, Pages: 56;
Drawing No. Flex E Couplings Article Number 0583, OD 180 to 1220mm, Revision: -, Pages: 27;

This Product Design Assessment (PDA) Certificate remains valid until 30/Nov/2026 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Term of Validity

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

2021 Rules for Conditions of Classification 1-1-4/7.7, 1-1-A3 and 1-1-A4, which covers the following :

2021 Rules for Building and Classing Marine Vessel Rules: 4-1-1/Table 6, 4-3-4/9.5.2, 4-6-1/7.1, 4-6-1/7.5.2, 4-6-2/5.5, 4-6-2/5.9, 4-6-2/5.15, 4-6-2/Table 9/10/11/12, 4-6-3/Table 1

ABS Rules

2021 Rules for Conditions of Classification - Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:

2021 Rules for Building and Classing Mobile Offshore Units: 4-2-1/3.13, 4-2-1/9.1, 4-2-6/3.7, 4-2-6/5.5, 6-1-6/5

2021 Guide for the Classification of Drilling System: (Updated Feb 2021): Chapter 4

National Standard

For GRIP / GRIP E FLEX / FLEX E (Including FP/RFP Versions) : DIN 53504: 2017-03, DIN ISO 815-1:2016-09, DIN ISO 815-2: 2016-09, DIN EN ISO 1183-1: 2019-09, DIN EN ISO 1183-2: 2019-06, DIN ISO 48-4: 2021-02, EN 10088-1: 2014-12, ASTM-F 1476 07 (2019), ASTM-F 1548-01 (2018) (G/GRIP/GRIP E-types only).

International Standard

For GRIP / GRIP E FLEX / FLEX E (Including FP/RFP Versions) : ISO 815-1: 2019-09, ISO 34-2: 2015-06

Government Standard

NA

EUMED Standard

NA

Others Standard

IACS UR P2.7.4 (Rev. 10 Jan 2021) IACS P2.11 (Rev. 5 Jan 2021) with ISO 19921 (first edition 2005-10-01) as fire endurance test.

Model Certificate

Model Certificate #

Issue Date

Expiry Date

PDA

21-2157966-PDA

01-DEC-2021

30-NOV-2026