Confirmation of Product Type Approval

Company Name: YOUNGNAM METAL CO.,LTD

Address: 12-3, JILLYE-RO 74BEON-GILJILLYE-MYEONGIMHAE-SI GYEONGSANGNAM-DO Korea, Republic of

Product: Pipe Coupling

Model(s): MF-RS, MF-RL, GR-S, GR-L, RCH-S, RCH-L, RCH-E & RCD-E

Endorsements:

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	24-0023453-PDA	07-JUN-2024	06-JUN-2029
Manufacturing Assessment (MA)	24-6245605	02-FEB-2024	19-FEB-2029
Product Quality Assurance (PQA)	NA	NA	NA

Tier
3 - Type Approved, unit certification not required

Intended Service
Classes II and III piping systems as per 4-6-2/Table 10 (Slip-on Joints) of Marine Vessels Rules. Refer to the attachment.

Description
Slip-on mechanical joints

1. Model Name

1.1. MF-RS (Slip Type): Multi-Flex Round Standard Type

1.2. MF-RL (Slip Type): Multi-Flex Round Long Type

1.3. GR-S (Grip Type): Grip Ring Standard Type

1.4. GR-L (Grip Type): Grip Ring Long Type

1.5. RCH-S (Slip Type): Repair Clamp Hinge Standard Type

1.6. RCH-L (Slip Type): Repair Clamp Hinge Long Type

1.7. RCH-E (Slip Type): Repair Clamp Hinge Elbow Type

1.8. RCD-E (Slip Type): Repair Clamp Double Elbow Type

2. Size

2.1. MF-RS/RS(FPC)/RL/RL(FPC):15A ~ 500A

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2.2. GR-S/S(FPC): 15A ~ 350A

2.3. GR-L/L(FPC): 15A ~ 300A

2.4. RCH-S/L: 15A ~ 500A

2.5. RCH-E: 15A ~ 150A

2.6. RCD-E: 200A ~ 500A

3. Material

3.1. Case/ Bolt/ Bar Washer/ Bar Nut/ Slide Plate: SUS304/316L

3.2. Packing: EPDM, NBR, Silicon, Viton

3.3. Washer: SUS301

3.4. Grip Ring (GR-S/L only): SUS301

3.5. Insert Ring/ Wire Ring (GR-S/L only): SUS304

3.6. Fire Protection Cover (MF-RS/RL, GR-S/L only): SUS304

3.7. Hinge Pin (RCH-S/L/E only): SUS304

3.8. Hinge Plate (RCH-S/L/E only): SUS304/316L

Ratings
1. Design pressure

1.1. MF-RS/RL: 20 bar (15A ~ 40A), 18 bar (50A & 65A), 16 bar (80A & 100A), 14 bar (125A & 150A), 10 bar (200A & 250A), 8 bar (300A & 350A), 5 bar (400A & 450A), 4 bar (500A)

1.2. GR-S: 20 bar (15A ~ 40A), 18 bar (50A & 65A), 16 bar (80A & 100A), 12 bar (125A & 150A), 7 bar (200A & 250A), 5 bar (300A & 350A)

1.3. GR-L: 20 bar (15A ~ 40A), 18 bar (50A & 65A), 16 bar (80A & 100A), 12 bar (125A & 150A), 7 bar (200A & 250A), 5 bar (300A)

1.4. RCH-L/S: 14 bar (15A ~ 25A), 12 bar (32A & 40A), 10 bar (50A & 65A), 8 bar (80A ~ 150A), 7 bar (200A & 250A), 6 bar (300A & 350A), 4 bar (400A & 450A), 3 bar (500A)

1.5. RCH-E: 11 bar (15A), 8 bar (20A ~ 40A), 7 bar (50A ~ 150A)

1.6. RCD-E: 6 bar (200A ~ 250A), 5 bar (300A ~ 400A), 4 bar (450A), 3 bar (500A)

2. Design temperature

2.1. EPDM: -18 to +90 deg.C

2.2. NBR: -18 to +70 deg.C

2.3. Silicon: -18 to +250 deg.C

2.4. Viton: -18 to +230 deg.C

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

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2. Materials are to be suitable for intended service at the pressure-temperature ratings.

3. Application of this product and the used of each service is to comply with 4-6-2/Table 10 (Slip-on Joints) & 4-6-2/Table 11 (Grip Type & Slip Type) of Marine Vessels Rules.

4. For sea water piping systems in which sea water may be retained within the piping system in a stagnant or low flow condition (i.e., less than 1 m/sec), the following materials are not to be used for this product:

4.1. 304 stainless steel

4.2. 316L stainless steels with a molybdenum content of less than 2.5%

5. This product is not to be used in pipelines in cargo holds, tanks and other spaces that are not easily accessible, unless approved by ABS.

6. Application of this product inside tanks may be permitted only for the same media that is in the tanks.

7. Usage of this product as the main means of pipe connection is not permitted except for cases where compensation of axial pipe deformation is necessary.

8. This product, which in the event of damage could cause fire or flooding, is not to be used in piping sections directly connected to the vessel’s side below the freeboard deck of cargo vessels or tanks containing flammable fluids.

9. This product is not to be used in areas where 8 minutes dry + 22 minutes wet and 30 minutes dry fire endurance test is required.

10. MF-RS/RL & GR-S/L may be used where approved fire resistant types are required, subject to the following

10.1 Fire protection cover is fitted;

10.2 Packing material is of EPDM

Comments

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

2. Where this product is used in piping containing fluids having flash point of 60 degree C or less and piping that is routed through hazardous areas, the same is to be electrically earthed (grounded) to ensure that the resistance from any point along the subject coupling does not exceed 1 Mega ohm. Refer to 4-6-2/7.5 of the Marine Vessels Rules.

3. Slip-on joints are to be accessible for inspection.

4. Fire Endurance tests were carried out for the following models:

4.1 MF-RS/RL fitted with fire protection cover (Packing: EPDM): 15A, 40A, 100A, 200A, 300A

4.2 GR-S/L fitted with fire protection cover (Packing: EPDM): 15A, 40A, 100A, 200A

Notes, Drawings and Documentation

1. Drawing List

1.1 YM-0001-1/1/2 (Rev.1), "Multi Flex Type Pipe Coupling" dated 21 May 2019

1.2 YG-0002-0/1/2 (Rev.1), "Grip Ring Type Pipe Coupling" dated 21 May 2019

1.3 YR-0003-0/1/2 (Rev.1), "Repair Clamp Type Pipe Coupling" dated 21 May 2019

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1.4 YR-0004-0/1/2 (Rev.1), "Repair Clamp Type Pipe Coupling" dated 21 May 2019

1.5 YG-0005-0/1/2 (Rev.1), "Grip Ring Type Coupling (Fire Protection Cover)" dated 22 October 2019

1.6 YM-0006-0/1/2 (Rev.1), "Multi Flex Round Type Coupling (Fire Protection Cover)" dated 22 October 2019

2. Type Test Reports

2.1 Report No. "YNQ-19T-ABS" witnessed by ABS Surveyor dated 16 October 2019

2.2 Report No. "KOMERI-07T179/80/81/82/83/84/85/86/87/88/89/90 issued by Korea Marine Equipment Research Institute (KOMERI) dated 3 March 2008

2.3 Report No. " YNF-0805-04/0" witnessed by ABS Surveyor dated 20 February 2008

2.4 Report No. "08-2007-01223" issued by Chungbuk Regional Small and Medium Business Administration dated 7 January 2008

2.5 Report No. "08-2007-01183" issued by Chungbuk Regional Small and Medium Business Administration dated 4 January 2008

2.6 Report No. "08-2007-01129" issued by Chungbuk Regional Small and Medium Business Administration dated 24 December 2007

2.7 Report No. "08-2007-01148" issued by Chungbuk Regional Small and Medium Business Administration dated 28 December 2007

Term of Validity
This Product Design Assessment (PDA) Certificate remains valid until 06/Jun/2029 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).

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.

ABS Rules
2024 ABS Rules for Condition of Classification 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:

2024 Marine Vessels Rules: 4-6-2/5.9 & 4-6-2/Table 12

International Standards
ISO 19921: 2005(E), ISO 19922: 2005(E)

EU-MED Standards
NA

National Standards
NA

Government Standards
NA

Other Standards
NA

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Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 07-Jun-2024 3:03

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

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 prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.

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