

Type Approval Certificate

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

Manufacturer	Young Nam Metal Co., Ltd.
Address	12-3, Jillye-ro 74beon-gil, Jillye-myeon, Gimhae-si, Gyeongnam, 50874, Korea, Republic of
Type	Pipe Couplings
Description	<p>Pipe coupling for metallic pipes</p> <p>Grip Ring Standard Type : GR-S15A, 20A, 25A, 32A, 40A, 50A, 65A, 80A, 100A, 125A, 150A, 200A, 250A, 300A, 350A</p> <p>Grip Ring Long Type : GR-L15A, 20A, 25A, 32A, 40A, 50A, 65A, 80A, 100A, 125A, 150A, 200A, 250A, 300A</p>
Trade Name	GR-S : Grip Ring Standard Type GR-L : Grip Ring Long Type
Application	<p>The mechanical joints can be used the following piping systems in accordance with Part 5, Chapter 12, Section 2, table 12.2.7 of Lloyd's Register (LR) Rules and Regulations for the Classification of Ships and similar offshore and industrial use in piping systems.</p> <p>For EPDM seats: marine piping systems for services and locations listed for approved fire resistant and non-approved fire resistant types in Part 5, Chapter 12, Section 2, Table 12.2.7 of Lloyd's Register (LR) Rules and Regulations for the Classification of Ships and similar offshore and industrial use in piping systems.</p>



Da-Young Kang

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Type Approval Certificate

Specified Standard LR Rules and Regulations for the Classification of Ships, Part 5, Chapter 12, July 2019
IACS UR P2.11 IACS Req.2001/Rev4. 2016

Ratings	Pressure Range	Nominal Diameter	Working Pressure (MPa)
		15A – 40A	2.0
		50A – 65A	1.8
		80A – 100A	1.6
		125A – 150A	1.2
		200A – 250A	0.7
		300A – 350A	0.5

Temperature Range
EPDM: -30 °C to +90 °C
NBR : -20 °C to +70 °C
SILICONE : -50 °C to +200 °C
VITON : -30°C to +220 °C

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

Other Conditions Where the joints are intended to be installed on a ship classed with LR, the following conditions of acceptance will be applicable:-

- 1) The joints are to be installed and tested in accordance with Part 5, Chapter 13, Section 2 of the Rules and Regulations for the Classification of Ships in so far as applicable.
- 2) The joints are to be made, installed and tested to appropriate pipe class requirements in accordance with Part 5m Chapter 12 of the Rules and Regulations for the Classification of Ships in so far as applicable.
- 3) The joints made in austenitic stainless steel material SUS304 are to be excluded from sea water services (see Part 5, Chapter 12, Section 9.3.4 of the Rules and Regulations for the Classification of Ships).
- 4) In all cases the materials are to be suitable for their intended service conditions.

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- 5) GR-S/L (Seat : EPDM) may be used where approved fire resistance type are required.

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register Asia of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document No. 14/40008(E1)-03 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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Manufacturer	Young Nam Metal Co., Ltd.
Address	12-3, Jillye-ro 74beon-gil, Jillye-myeon, Gimhae-si, Gyeongnam, 50874, Korea, Republic of
Type	Pipe Couplings
Description	Multi Flex Standard Type: MF-RS15A, 20A, 25A, 32A, 40A, 50A, 65A, 80A, 100A, 125A, 150A, 200A, 250A, 300A, 350A, 400A, 450A and 500A Multi Flex Long Size Type: MF-RL15A, 20A, 25A, 32A, 40A, 50A, 65A, 80A, 100A, 125A, 150A, 200A, 250A, 300A, 350A, 400A, 450A and 500A
Trade Name	Pipe coupling for metallic pipes – Slip Type
Application	The mechanical joints can be used the following piping systems in accordance with Part 5, Chapter 12, Section 2, table 12.2.7 of Lloyd's Register (LR) Rules and Regulations for the Classification of Ships and similar offshore and industrial use in piping systems. For EPDM seats: marine piping systems for services and locations listed for approved fire resistant and non-approved fire resistant types in Part 5, Chapter 12, Section 2, Table 12.2.7 of Lloyd's Register (LR) Rules and Regulations for the Classification of Ships and similar offshore and industrial use in piping systems.
Specified Standard	LR Rules and Regulations for the Classification of Ships, Part 5, Chapter 12, July 2019



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IACS UR P2.11 IACS Req.2001/Rev4. 2016

Ratings	Pressure Range	Nominal Diameter	Working Pressure (MPa)
		15A – 40A	2.0
		50A – 65A	1.8
		80A - 100A	1.6
		125A – 150A	1.4
		200A – 250A	1.0
		300A - 350A	0.8
		400A - 450A	0.5
		500A	0.4

Other Conditions Where the joints are intended to be installed on a ship classed with LR, the following conditions of acceptance will be applicable:-

- 1) The joints are to be installed and tested in accordance with Part 5, Chapter 13, Section 2 of the Rules and Regulations for the Classification of Ships in so far as applicable.
- 2) The joints are to be made, installed and tested to appropriate pipe class requirements in accordance with Part 5m Chapter 12 of the Rules and Regulations for the Classification of Ships in so far as applicable.
- 3) The joints made in austenitic stainless steel material SUS304 are to be excluded from sea water services (see Part 5, Chapter 12, Section 9.3.4 of the Rules and Regulations for the Classification of Ships).
- 4) In all cases the materials are to be suitable for their intended service conditions.
- 5) MF-RS/RL (Seat : EPDM) may be used where approved fire resistance type are required.

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The Design Appraisal Document No. 14/40009(E1)-03 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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Manufacturer	YOUNGNAM METAL CO., LTD
Address	12-3, Jillye-ro, 74 Beon-gil, Jillye-myeon, Gimhae-si, Gyeongsangnam-do, Republic of Korea.
Place of Production	YOUNGNAM METAL CO., LTD 12-3, Jillye-ro, 74 Beon-gil, Jillye-myeon, Gimhae-si, Gyeongsangnam-do, Republic of Korea.
Type	Repair Clamp Hinge Standard Type : RCH-S15A, 20A, 25A, 32A, 40A,50A, 65A, 80A, 100A, 125A, 150A, 200A, 250A, 300A, 350A, 400A, 450A and 500A Repair Clamp Hinge Long Type : RCH-L15A, 20A, 25A, 32A, 40A,50A, 65A, 80A, 100A, 125A, 150A, 200A, 250A, 300A, 350A, 400A, 450A and 500A Repair Clamp Hinge Elbow Type : RCH-E15A, 20A, 25A, 32A, 40A,50A, 65A, 80A, 100A, 125A, 150A Repair Clamp Double Elbow Type : RCD-E200A, 250A, 300A, 350A, 400A, 450A and 500A
Description	RCH-S : Repair Clamp Hinge Standard Type RCH-L : Repair Clamp Hinge Long Type RCH-E : Repair Clamp Hinge Elbow Type RCD-E : Repair Clamp Double Elbow Type



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Trade Name	Pipe coupling for metallic pipes – Slip type		
Application	<p>The mechanical joints can be used the following piping systems in accordance with Part 5, Chapter 12, Section 2, table 12.2.7 of Lloyd's Register (LR) Rules and Regulations for the Classification of Ships and similar offshore and industrial use in piping systems.</p> <p>Marine piping systems for services and locations listed for non-approved fire resistance types in Part 5, Chapter 12, Section 2, Table 12.2.7 of Lloyd's Register (LR) Rules and Regulations for the Classification of Ships and similar offshore and industrial use in piping systems.</p>		
Specified Standard	<p>LR Rules and Regulations for the Classification of Ships, Part 5, Chapter 12, July 2019 IACS UR P2.11 IACS Req.2001/Rev4. 2016</p>		
Ratings	RCH-S/L		
	Pressure Range	Nominal Diameter	Working Pressure (MPa)
		15A – 25A	1.4
		32A – 40A	1.2
		50A – 65A	1.0
		80A – 150A	0.8
		200A – 250A	0.7
		300A – 350A	0.6
		400A – 450A	0.4
		500A	0.3
	RCH-E		
	Pressure Range	Nominal Diameter	Working Pressure (MPa)
		15A	1.1
		20A - 40A	0.8
		50A –150A	0.7

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RCD-E		
Pressure Range	Nominal Diameter	Working Pressure (MPa)
	200A-250A	0.6
	300A-400A	0.5
	450A	0.4
	500A	0.3
Temperature Range	EPDM	-30°C to +90 °C
	NBR	-20 °C to +70 °C
	SILICONE	-50 °C to +200 °C
	VITON	-30 °C to +220 °C

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

Other Conditions

Where the joints are intended to be installed on a ship classed with LR, the following conditions of acceptance will be applicable:-

- 1) The joints are to be installed and tested in accordance with Part 5, Chapter 13, Section 2 of the Rules and Regulations for the Classification of Ships in so far as applicable.
- 2) The joints are to be made, installed and tested to appropriate pipe class requirements in accordance with Part 5, Chapter 12 of the Rules and Regulations for the Classification of Ships in so far as applicable.
- 3) The joints made in austenitic stainless steel material SUS304 are to be excluded from sea water services (see Part 5, Chapter 12, Section 9.3.4 of the Rules and Regulations for the Classification of Ships).
- 4) In all cases the materials are to be suitable for their intended service conditions.

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The Design Appraisal Document No. LR2006670TA and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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