

Type Approval Certificate

This is to certify that the undernoted product has been tested with satisfactory results in accordance with the relevant requirements of the LR Type Approval System.

This certificate is issued to:

PRODUCER	Hansun Engineering Co., Ltd
PLACE OF PRODUCTION	27, Noksansandan 361-ro, Gangseo-gu, Busan, Republic of Korea
DESCRIPTION	DIN type compression tube fittings for stainless, carbon steel and brass
TYPE	Bite Type DIN 2353
APPLICATION	High pressure tube connections for use in marine, offshore and industrial piping systems with hydraulic systems fluids, fuel oil, lubricating oil, fresh water, salt water, sanitary, gas, steam and condensate
STANDARD	Lloyd's Register Rules and Regulations for Classification of Ships, Part 5, Chapter 12, Section 5, July 2014 Lloyd's Register Type approval, July 2014, Test specification Number 2
RATING	Metric Tubing :

Series	Tube O.D (mm)	Normal pressure ratings (bar)		
		Stainless steel	Carbon Steel	Brass
Very Light (LL)	4-8	100	100	70
Light (L)	6-18	250	315	221
	18-22	160	-	-
	22-42	100	160	112
Heavy (S)	6-14	630	630	441

Certificate No.	15/40039
Issue Date	09 March 2015
Expiry Date	08 March 2020
Sheet	1 of 2

Da-Young Kang

Busan Technical Support



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	16-30	400	400	280
	38	315	315	210

Pressure-temperature ratings: see the producer's catalogue

**PERFORMANCE
TEST**

- 1) Leakage test
- 2) Bursting test
- 3) Repeated assembly test
- 4) Pull-out test
- 5) Impulse and vibration test
- 6) Rotary flexure test

**OTHER
CONDITIONS**

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

- 1) The fittings are to be installed in accordance with the manufacture's instruction.
- 2) Attention is drawn to Section 1.3.6 of IMO MSC/Circ. 1321- Guidelines for Measures to prevent Fires in Engine-Rooms and Cargo Pump-Rooms and Cargo Pump-Rooms which describes that compression couplings require careful attention to tightening procedures and torques to avoid leaks or damage to the pipe when subjected to over-tightening and they should not be used in the fuel supply line of the (oil engine) injection pumps and spill system.

"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. [15/40039](#) and its supplementary Type Approval Terms and Conditions form part of this Certificate

Certificate No. 15/40039
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Sheet 2 of 2

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Marine Design Appraisal Document

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Date
09 March 2015

Please quote the document number on all future communications

THE LR TYPE APPROVAL SYSTEM, 2002.

Issued to: HANSUN ENGINEERING CO.,LTD
for: BITE TYPE TUBE FITTINGS FOR DIN 2353
TYPE APPROVAL CERTIFICATE No. 15/40039

The undernoted documents have been reviewed for compliance with the requirements of the LR Type Approval System, 2002 and this Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

Request for Marine Services Form 2502 dated 21 January 2014
Application for Type approval Form LR2571 dated 28 January 2015
Catalogue of Bite Type Tube Fittings – DIN 2353

TEST REPORTS

Busan Port e-mail dated 03 February 2015 accompanying "Inspection and Surveillance of Production Facilities"
Firm's Type approval test report for Bite type (DIN 2353) Instrument fittings witness by LR surveyor in Busan Port Office

Supplementary Type Approval Terms and Conditions

Type Approval certifies that a representative sample of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein. It does not mean or imply approval for any other use, nor approval of any product(s) designed or manufactured otherwise than in strict conformity with the said representative sample.

Type Approval is based on the understanding that the manufacturer's recommendations and instructions and any relevant requirements of the Rules and Regulations are complied with.

Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations.

Lloyd's Register Asia reserves the right to cancel or withdraw this Type Approval Certificate in accordance with the LR Type Approval System Procedure.

FINAL ACCEPTANCE OF ACTUAL ITEM(S) DEPEND(S) ON SATISFACTORY SURVEY AND TESTING

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Product: Compression fittings (Part 1A)

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