



TYPE APPROVAL CERTIFICATE
No. MAC140824PU

This is to certify that the product identified below is in compliance with the regulations herewith specified.

<i>Description</i>	MECHANICAL JOINTS FOR PIPES
<i>Type</i>	S-LOK and BITE TYPE TUBE FITTINGS (JIS B 2351, DIN 2353)
<i>Applicant</i>	HANSUN ENGINEERING CO., LTD. (Songjeong-dong) 27, Noksansandan361(sambaegyuksibil)-ro, Gangseo-gu 46754 Busan REPUBLIC OF KOREA
<i>Manufacturer</i>	HANSUN ENGINEERING CO., LTD.
<i>Place of manufacture</i>	(Songjeong-dong) 27, Noksansandan361(sambaegyuksibil)-ro, Gangseo-gu 46754 Busan REPUBLIC OF KOREA
<i>Reference standards</i>	Part C, Chapter 1, Section 10 of RINA Rules
<i>Reference documents</i>	RINA TYPE APPROVAL SYSTEM

Issued in **BUSAN** on **August 20, 2024**. This Certificate is valid until **August 19, 2029**



Ho Seok Yang
RINA Services S.p.A.

This certificate consists of this page and 1 enclosure

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S-LOK and BITE TYPE TUBE FITTINGS (JIS B 2351, DIN 2353)

Product description

- S-LOK and BITE Type tube fittings (JIS B 2351, DIN 2353)
- Ratings
- S-LOK tube fittings

Pipe size (Inch)	Stainless steel 316	Brass	Carbon steel
	Max. working pressure (bar)	Max. working pressure (bar)	Max. working pressure (bar)
1/16	758	378	758
1/8	689	345	689
1/4	551	276	551
3/8	538	269	538
1/2	531	262	531
3/4	503	248	503
1	365	179	365
1-1/4	414	207	414
1-1/2	345	172	345
2	269	131	269

- Bite type tube fittings - DIN 2353

Series		Steel	Stainless steel	Brass
		Max. working pressure (bar)	Max. working pressure (bar)	Max. working pressure (bar)
LL	4 ~ 12	100	100	63
L	6 ~ 10	500	315	200
	12 ~ 18	400		
	22 ~ 42	250	160	100
S	6 ~ 10	800	630	400
	12 ~ 14	630		
	16 ~ 30	420	400	250
	38		315	200

- Bite type tube fittings - JIS B 2351

Fitting Size (applicable tube O.D)	4 ~ 15	16 ~ 22	25 ~ 28	30 ~ 38	40 ~ 45
Max. pressure (kgf/cm ²)	500	400	350	250	210
Max. working pressure (°C)	300				



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S-LOK and BITE TYPE TUBE FITTINGS (JIS B 2351, DIN 2353)

Reference documents

- Drawing "S-LOK COMPRESSION TUBE FITTINGS" with approval no.PUMC-23455 dated 08/08/2024.
 - Drawing "BITE TYPE TUBE FITTINGS (DIN 2353)" with approval no.PUMC-23456 dated 08/08/2024.
 - Drawing "BITE TYPE TUBE FITTINGS (JIS B 2351)" with approval no.PUMC-23457 dated 08/08/2024.
 - Tests carried out, witnessed by Classification Societies, dated 20/11/2019 ~ 20/02/2020.
1. Tightness & leakage test reports:
 - HSET-DNV-1911-001, HSET-DNV-1912-001, HSET-DNV-1912-010 (S-LOK)
 - HSET-DNV-1911-002, HSET-DNV-1912-002, HSET-DNV-1912-011 (BITE JIS B 2351)
 - HSET-DNV-1911-003, HSET-DNV-1912-003, HSET-DNV-1912-012 (BITE DIN 2353)
 2. Repeated assembly & leakage test reports:
 - HSET-DNV-1911-004, HSET-DNV-1912-004, HSET-DNV-1912-013 (S-LOK)
 - HSET-DNV-1911-005, HSET-DNV-1912-005, HSET-DNV-1912-014 (BITE JIS B 2351)
 - HSET-DNV-1911-006, HSET-DNV-1912-006, HSET-DNV-1912-015 (BITE DIN 2353)
 3. Burst pressure test reports:
 - HSET-DNV-1911-007, HSET-DNV-1912-007, HSET-DNV-1912-016 (S-LOK)
 - HSET-DNV-1911-008, HSET-DNV-1912-008, HSET-DNV-1912-017 (BITE JIS B 2351)
 - HSET-DNV-1911-009, HSET-DNV-1912-009, HSET-DNV-1912-018 (BITE DIN 2353)
 4. Pullout test reports:
 - HSET-DNV-2001-001, HSET-DNV-2001-004, HSET-DNV-2001-007 (S-LOK)
 - HSET-DNV-2001-002, HSET-DNV-2001-005, HSET-DNV-2001-008 (BITE JIS B 2351)
 - HSET-DNV-2001-003, HSET-DNV-2001-006, HSET-DNV-2001-009 (BITE JIS DIN 2353)
 5. Vibration & pressure pulsation test reports:
 - HSET-DNV-2001-010, HSET-DNV-2001-012, HSET-DNV-2002-001 (S-LOK)
 - HSET-DNV-2001-011, HSET-DNV-2001-013, HSET-DNV-2002-002 (BITE JIS B 2351)
 - HSET-DNV-2002-004, HSET-DNV-2002-005, HSET-DNV-2002-003 (BITE JIS DIN 2353)
 6. Vacuum test reports:
 - HSET-DNV-1911-010, HSET-DNV-2001-014, HSET-DNV-2001-017 (S-LOK)
 - HSET-DNV-1911-011, HSET-DNV-2001-015, HSET-DNV-2001-018 (BITE JIS B 2351)
 - HSET-DNV-1911-012, HSET-DNV-2001-016, HSET-DNV-2001-019 (BITE JIS DIN 2353)
 7. Approval test plan : HSTP-1902-001

Materials/Components

- As per above mentioned stamped drawing booklet, as appropriate.



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Fields of application/ Limitation

- The mechanical joints are acceptable for the piping systems listed in Tables 16 of Part C, Chapter 1, Section 10 of RINA Rules and under the terms as stated therein where fire endurance test capacity is required.
- The mechanical joint arrangement is to comply with Para. 2.4.5, Part C, Chapter 1, Section 10 of RINA Rules.

Acceptance conditions

- Each mechanical joint is to be appropriately tested in compliance with the above mentioned RINA Rules and to the satisfaction of the RINA Surveyor.
- The packing material is to be compatible with the media to be conveyed, with the external media and the maximum working conditions, according to the manufacturer's recommendations.

Marking for identification

- Each mechanical joint is to be clearly marked with:
- Manufacturer's name
- Type designation
- Nominal Size
- Max working pressure

Remarks

- Verification of marking for identification and proper installation on board are to be to the satisfaction of the RINA Surveyor.



BUSAN August 20, 2024

A handwritten signature in black ink, consisting of several loops and strokes, is written over the date.