



Marine & Offshore

Certificate number: 44868/B0 BV

File number: MAT 81337-2016

Product code: 2003I

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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APPROVAL CERTIFICATE for MATERIALS

This certificate is issued to

DOOWON HIGH STEEL

GIMHAE (Gyeongnam) - KOREA (REPUBLIC OF)

for the type of product

WELDED PIPES AND FITTINGS

Welded carbon steel pipes in grade STPY400
Welded austenitic stainless steel pipes in grade 316L

Requirements:

Bureau Veritas Rules on Materials and Welding for the Classification of Marine Units

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 12 Oct 2026

For Bureau Veritas Marine & Offshore,

At BV PUSAN, on 12 Oct 2021,

Chang-Uk HONG



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

Steel grade	Dimension range	Delivery Condition
STPY400 JIS G3457	Wall thickness up to 20.0mm Outside diameter up to 1524mm	As Weld
316L	Wall thickness up to 22.0mm Outside diameter up to 406.4mm	Solution heat treatment with quenching
	Wall thickness up to 8.0mm Outside diameter up to 914.4mm	

No steelmaking.

Pipes are welded by Flux Cored Arc Welding (FCAW) and Submerged Arc Welding (SAW) or Plasma Arc Welding (PAW) and Gas Tungsten Arc Welding (GTAW) processes in longitudinal direction from steel plates (as rolled) after bending operations.

2. DOCUMENTS AND DRAWINGS :

2.1-Documents issued by Doowon High Steel Co., Ltd.:

- "Document for BV Type Approval, Document No. DW-160427-01, Rev No. 0", dated 27 April 2016.
- "Document for BV Type Approval, Document No. DW-160530-01, Rev No. 1", dated 30 May 2016.
- "Document for BV Type Approval, Document No. DW-160624-01, Rev No. 2", dated 24 June 2016.
- "Document for BV Type Approval_pdf_DOOWON HIGH STEEL(ADDITIONAL)", dated November 2020.
- "Technical documentation", dated November 2020.

3. TEST REPORTS :

3.1-Documents issued by Doowon High Steel Co., Ltd.:

- "Document for BV Type Approval, Document No. DW-160427-01, Rev No. 0", dated 27 April 2016.
 - "Document for BV Type Approval, Document No. DW-160530-01, Rev No. 1", dated 30 May 2016.
 - "Document for BV Type Approval, Document No. DW-160624-01, Rev No. 2", dated 24 June 2016.
 - "Document for BV Type Approval, Document No. DW-160808-01, Rev No. 3", dated 08 August 2016.
- Welded carbon steel pipes have been tested for impact tests at 20°C with Charpy V min. average KVL 27J.
- "Test report 316L - 406.4 x 22", dated 17 September 2020.
 - "Test report 316L - 914.4 x 8", dated 17 September 2020.

4. APPLICATION / LIMITATION :

As per Bureau Veritas Rules for Classification. Raw materials are to be with work's certificate as a minimum.

5. PRODUCTION SURVEY REQUIREMENTS :

- 5.1 - The welded pipes are to be supplied by Doowon High Steel Co., Ltd. in compliance with the type and the requirements described in this certificate.
- 5.2 - This type of product is within the category IBV of Bureau Veritas Rule Note NR320.
- 5.3 - BV product certificate is required.

6. MARKING OF PRODUCT :

As per Bureau Veritas Rules for Classification.

7. OTHERS :

This certificate replaces approvals from No.44868/A0 BV to No.44868/A1 BV.

*** END OF CERTIFICATE ***