



Marine & Offshore

Certificate number: SMS.W.II./1176/E.0

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RECOGNITION FOR BV MODE II SCHEME

DOOSAN HEAVY INDUSTRIES & CONSTRUCTION CO., LTD.
CHANGWON - KOREA (REPUBLIC OF)

Summary of the range of the recognition which is detailed in the subsequent page(s):

1. Forgings for Crankshafts in Carbon steels and Alloy steels
2. Castings in Carbon, Carbon-Manganese and Low alloy steels
3. Forgings in Carbon, Carbon-Manganese and Low alloy steels

This certificate is issued to attest that Bureau Veritas Marine & Offshore has performed, at the above company's request and in compliance with the requirements of NR320, a satisfactory assessment of the manufacturing facilities and associated quality procedures related to the range of the recognition.

This certificate will expire on: 23 May 2023

For BUREAU VERITAS,
At BV PUSAN, on 23 May 2019,
Won-Jun Jang



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. 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 electronic version is available at: <http://www.veristarpn.com/veristarnb/jsp/viewPublicPdfRecognition.jsp?id=b8buccgtzf>

BV Mod. Ad.E 697 June 2017

This certificate consists of 2 page(s)

THE SCHEDULE OF RECOGNITION

1. RANGE OF THE RECOGNITION

The products listed in the table below are to be certified individually or per batch by Bureau Veritas Marine & Offshore in compliance with the applicable requirements (IBV products as defined in NR320).

App. number	Validity date	Item designation	Trade name
14713/C0 BV	29 Oct 2020	STEEL FORGINGS - 8153I	Forgings for crankshafts in carbon steels and alloy steels of maximum weight 270 tons

The products corresponding to the categories listed in the table below are to be certified individually or per batch by Bureau Veritas Marine & Offshore in compliance with the applicable requirements (IBV products as defined in NR320).

Generic product	Description
CASTING	Castings in Low alloy steels , Typical grade: NORSOK M-122 Grade 420, Max. weight: 230 Tons
CASTING	Castings in Carbon and Carbon-Manganese steels, BV Grade: Up to G560, Max. weight: 380 Tons
FORGING	Forgings in Carbon and Carbon-Manganese steels including steel making and semi-built up crankshafts, BV Grade: Up to FC760, Max. weight: 230 Tons
FORGING	Forgings in Low alloy steels, BV Grade: up to FA1100, Max. weight: 230 Tons

2. LIMITATIONS

The certificates listed in the range of recognition are to be valid, as applicable.

Bureau Veritas Marine & Offshore is to be informed immediately of any modification to manufacturing facilities and associated quality procedures in order to agree on appropriate actions.

DOOSAN HEAVY INDUSTRIES & CONSTRUCTION CO., LTD. has to apply for the periodical audits as agreed with Bureau Veritas Marine & Offshore.

3. PERIMETER OF CERTIFICATION

Quality system of following site(s) has been assessed:

DOOSAN HEAVY INDUSTRIES & CONSTRUCTION CO., LTD. - CHANGWON - KOREA (REPUBLIC OF)

4. REMARKS

4.1 This certificate supersedes the certificate No. SMS.W.II./1176/D.0 issued by this Society on 30/December/2015.

4.2 Steelmaking by Electric arc furnace, Ingot casting to be used for products in the factory only.

*** END OF CERTIFICATE ***