



**CERTIFICATE OF APPROVAL OF MANUFACTURERS OF
MATERIALS**
No. **FAB106615PU**

This is to certify that the manufacture of the product identified below is in compliance with the applicable requirements of the RINA Rules for the Approval of Manufacturers of Materials.

<i>Description</i>	Normal strength and higher strength hull steel plates
<i>Type</i>	Grades A - B - D - E - AH32/36/40 - DH32/36/40 -; EH32/36/40-FH32/36
<i>Manufacturer</i>	DONGKUK STEEL MILL CO., LTD. - DANGJIN WORKS
<i>Place of manufacture</i>	25, GODAEGONGDAN 1(IL)-GIL, SONGAK-EUP 343-823 DANGJIN-SI, CHUNGNAM REPUBLIC OF KOREA
<i>Reference standards</i>	RINA Rules for the approval of manufacturers of materials

Issued in **BUSAN** on **February 18, 2016**. This Certificate is valid until **August 11, 2019**




RINA Services S.p.A.
Dong-Hun Lee

This certificate consists of this page and 1 enclosure

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Grades A - B - D - E - AH32/36/40 - DH32/36/40 -

EH32/36/40-FH32/36

APPROVAL CONDITIONS

Steel making process: slabs produced by approved manufacturers

Deoxidation practice, condition of supply and thickness:

Steel grades	Deoxidation practice and fine grained elements	Condition of supply and max. thickness
A - B	Si+Al killed	AR - 100mm, CR - 50mm, TMCP - 83mm, N-100mm
D	Si+Al killed Al fine grained	AR - 35mm, CR - 50mm, TMCP - 83mm, N-100mm
E	Si+Al killed, Al+Nb/Ti fine grained	TMCP - 83mm, N - 83mm
AH32/36	Si+Al killed, Al+Nb/Ti or Al+V or Al+Nb+Ti+V fine grained	AR - 35mm, CR - 50mm TMCP - 83mm, N - 70mm
DH32/36	Si+Al killed, Al+Nb/Ti or Al+V or Al+Nb+Ti+V fine grained	AR - 25mm, CR - 50mm TMCP - 83mm, N - 83mm
EH32/36	Si+Al killed, Al+Nb/Ti or Al+V or Al+Nb+Ti+V fine grained	TMCP - 83mm, N - 70mm
AH40,DH40,EH40	Si+Al killed, Al+Nb/Ti or Al+Nb+Ti+V fine grained	TMCP - 83mm
FH32/36	Si+Al killed, Al+Nb+Ti fine grained	TMCP - 50mm

AR : As rolled

CR : Controlled rolling

TMCP : Thermo-Mechanical Rolling

N : Normalizing

Through thickness properties : Z25,Z35

***)The approval generally covers thickness not less than 15mm**



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Survey conditions:

The plates are to be in compliance in all respects with the relevant RINA rules and are to be tested accordingly.

General conditions for the approval

-The approval is granted on condition that the RINA Rules for the approval, manufacture, testing and certification of materials are complied with in all respects.

-RINA is to be notified of any change of materials, manufacturing process, quality control routines that may affect the validity of this certificate.



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