



**CERTIFICATE OF APPROVAL OF MANUFACTURERS OF
MATERIALS**
No. FAB168515WS

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>	Hull steel plates
<i>Type</i>	A/B/D/E/AH32/AH36/AH40/DH32/DH36/DH40/EH32/EH36/ EH40/FH32/FH36/FH40/A420/A460/A500/A550/A620/A690/ D420/D460/D500/D550/D620/D690/E420/E460/E500/E550/ E620/E690/F420/F460/F500/F550/F620/F690
<i>Manufacturer</i>	JIANGSU SHAGANG GROUP CO., LTD.
<i>Place of manufacture</i>	JINFENG TOWN, ZHANGJIAGANG CITY 215625 JIANGSU CHINA
<i>Reference standards</i>	RINA Rules for the approval of manufacturers of materials

Issued in **SHANGHAI** on **February 16, 2016**. This Certificate is valid until **August 31, 2019**



RINA
RINA Services S.p.A.
Hong Gu

This certificate consists of this page and 1 enclosure

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A/B/D/E/AH32/AH36/AH40/DH32/DH36/DH40/EH32/EH36/
EH40/FH32/FH36/FH40/A420/A460/A500/A550/A620/A690/
D420/D460/D500/D550/D620/D690/E420/E460/E500/E550/ E620/E690/F420/F460/F500/F550/F620/F690

D420/D460/D500/D550/D620/D690/E420/E460/E500/E550/ E620/E690/F420/F460/F500/F550/F620/F690

APPROVAL CONDITIONS

Approval particulars:

Grades	Steelmaking ¹⁾	Deoxidation	Fine grain elements	Delivery condition ²⁾	Max. thickness (mm)	Z-quality
A,B	BOC,CC	Killed	Al	AR	40	Z25/Z35
			Al	N	60	
			Al+Ti	N	100	
D	BOC,CC	Killed	Al	N	40	Z25/Z35
			Al	TMCP	60	
			Al+Ti+Nb	N	100	
E	BOC,CC	Killed	Al+Nb	TMCP	60	Z25/Z35
			Al+Ti+Nb	N	100	
AH32	BOC,CC	Killed	Al+Ti	AR	30	Z25/Z35
			Al+Ti	N	40	
			Al+Nb	TMCP	60	
			Al+Nb+Ti	N	100	
AH36	BOC,CC	Killed	Al+Ti	AR	30	Z25/Z35
			Al+Nb+Ti	N	40	
			Al+Nb	TMCP	60	
			Al+Nb+V+Ti	N	100	
DH32	BOC,CC	Killed	Al+Ti	N	40	Z25/Z35
			Al+Nb	TMCP	60	
			Al+Nb+Ti	N	100	
DH36	BOC,CC	Killed	Al+Nb+Ti	N	40	Z25/Z35
			Al+Nb	TMCP	60	
			Al+Nb+V+Ti	N	100	
EH32,FH32	BOC,CC	Killed	Al+Nb	TMCP	60	Z25/Z35
			Al+Nb+Ti	N	100	
EH36,FH36	BOC,CC	Killed	Al+Nb	TMCP	60	Z25/Z35
			Al+Nb+V+Ti	N	100	
AH40,DH40 EH40,FH40	BOC,CC	Killed	Al+Nb+V+Ti	TMCP	60	Z25/Z35
			Al+Nb+V+Ti	N	100	
A420,D420,E420,F420, A460,D460,E460,F460	BOC,CC	Killed	Al+Nb+Ti	QT	100	Z25/Z35
A500,D500,E500,F500, A550,D550,E550,F550	BOC,CC	Killed	Al+Nb+Ti	QT	100	Z25/Z35
A620,D620,E620,F620, A690,D690,E690,F690	BOC,CC	Killed	Al+Nb+Ti	QT	100	Z25/Z35

Remarks:

- 1) BOC: Basic Oxygen Converter; CC: Continous Casting;
2) N: Normalising; AR:As Rolled; TMCP:Thermo-Mechanical rolling; QT: Quenching & Tempering

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Survey condition:

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.



SHANGHAI February 16, 2016



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