



APPROVAL CERTIFICATE FOR MANUFACTURING PROCESS

Certificate No. : SHI21856-SP001 **Initial Approval** : 20th October, 2008.
Product : Rolled Steels
Manufacturer : Baoshan Iron & Steel Co., Ltd. Core Base Plate Line No.2
No.777, North Wenchuan Road, Baoshan District, Shanghai, China

Product Description : Rolled Steel Plates for Hull Structure
- Grade : A(Z), B(Z), D(Z), E(Z), AH 32(Z), DH 32(Z),
EH 32(Z), AH 36(Z), DH 36(Z), EH 36(Z).
Boiler & Pressure Vessel Plates
- Grade : RSP42, RSP46, RSP46A, RSP49, RSP49A, RPV24, RPV32, RPV36
Semi-finished Products and Round Bars
- Grade : Carbon & Low Alloy Steels
* Supply Condition : See "Appendix 1"

Approval Condition : Individual Product Certification is required.

THIS IS TO CERTIFY that the manufacturing process for the above mentioned product has been approved in accordance with the relevant requirement of this Society's Rules and / or of the recognized standards as follows and entered in the "List of Approved Manufacturer and Type Approved Equipment".

Pt. 2, Ch. 1, Sec. 3, Art. 301 of the Rules for Classification, Steel Ships.

This Certificate is valid until 19th October, 2013.

Issued at Shanghai, China on 16th June, 2011.



President of
CHINA KR Co., Ltd.

Note :1 : The approval will be automatically suspended and the Certificate become invalid from the expiry date of the Certificate in the event that the extension has not been granted or the renewal of the Certificate is not underway.

2 : The manufacturer should notify this Society of any modification or changes that may affect the validity of this Certificate.

Appendix 1

Product Description and/or Approval Condition

Certificate No : SHI21856-SP001

Date of Issue : 16th June, 2011.

- Condition of Supply
 - Steel making : Basic Oxygen Furnace
 - Casting process : Continuous Casting & Ingot Casting
 - Deoxidation : Killed

< Rolled Steel Plates for Hull Structure and Boiler & Pressure Vessel >

Grade (1)	Grain refining elements	Max. Thickness (mm)	Condition of Supply (2)
A, B	Al+Ti	50	AR
A(Z), B(Z), D(Z)	Al+Ti	35	AR
A(Z), B(Z), D(Z), E(Z)	Al+Nb+Ti	60	N
AH32	Al+Ti	35	CR
AH32, AH36 DH32, DH36	Al+Ti	20	AR
AH32(Z), AH36(Z) DH32(Z), DH36(Z)	Al+Nb+Ti	40	CR
AH32(Z), AH36(Z) DH32(Z), DH36(Z) EH32(Z), EH36(Z)	Al+Nb+Ti	50	N
		20	TMCP (TMR)
		50	TMCP (TMR+AcC)
RSP42, RSP46, RSP46A, RPV24	Al+Ti	50	AR
	Al+Ti	35	N
	Al+Ti+Nb	60	N
RSP49, RSP49A, RPV32	Al+Ti	20	AR
	Al+Ti+Nb, Al+Ti	40	CR
	Al+Ti+Nb+V	50	N
RPV36	Al+Ti+Nb	40	CR
	Al+Ti+Nb	50	N

* Remarks

(1) All "(Z)" with specified through thickness properties of Z15, Z25 and Z35.

(2) AR : As Rolled

CR : Controlled Rolling Condition

N : Normalized Condition

TMCP (TMR+AcC) : Thermo-Mechanical Controlled Process
(Thermo-Mechanical Rolling+Accelerated Cooling)

(3) Ingot Casting Process

< The End >