



APPROVAL CERTIFICATE FOR MANUFACTURING PROCESS

Certificate No. : DLN06015-SP001 **Initial Approval** : 13th October, 1997.
Product : Rolled Steels
Manufacturer : Heavy Plate Mill of Medium and Heavy plate Plant of Angang Steel Co., Ltd.
Lingshan Hongqi Road, Lishan District, Anshan City, Liaoning
Province (114042), China.

Product Description : (1) Rolled Steel Plates for Hull Structural
- Grade: A, B, D, E
AH32, DH32, EH32, FH32, AH36, DH36, EH36, FH36
AH40, DH40, EH40, FH40
(2) High Strength Quenched and Tempered Steels for Welded Structures
- Grade: AH43, DH43, EH43, FH43, AH47, DH47, EH47, FH47
AH51, DH51, EH51, FH51, AH56, DH56, EH56, FH56
AH63, DH63, EH63, FH63, AH70, DH70, EH70, FH70

* 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, 308 and 310 of the Rules for Classification of Steel Ships.

This Certificate is valid until 12th October, 2017.

Issued at Shanghai, China on 4th March, 2013.



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 : DLN06015-SP001

Date of Issue : 4th March, 2013.

© Product Description

- 1) Steel Making : Basic Oxygen Converter
- 2) Deoxidation : Killed or Fully Killed
- 3) Refining Process : TDS, LF, VD
- 4) Casting Method : Continuous Casting
- 5) Slab thickness : Max. 300mm

Grade (1)	Grain Refining Elements	Thickness Max. (mm)	Condition of supply (2)
A	-	50	AR
		100	TMCP (3)
B	-	50	AR
		100	TMCP (3)
D	Al	50	CR, N
		100	TMCP (3)
E	Al	50	N
		100	TMCP (3)
AH32, AH36 DH32, DH36 EH32, EH36	Al+Nb+V	50	CR, N
		100	TMCP (3)
FH32, FH36 AH40, DH40 EH40, FH40	Al+Nb+V	100	TMCP (3)
AH43, DH43 EH43, FH43 AH47, DH47 EH47, FH47 AH51, DH51 EH51, FH51 AH56, DH56 EH56, FH56	Al+Nb	80	TMCP (3)
AH63, DH63 EH63, FH63 AH70, DH70 EH70, FH70	Al+Nb+V+Ti	50	TMCP + Temper (3)

Remarks

- (1) Slabs are supplied from No. 1, No. 2 and No. 3 Steelmaking Plants.
- (2) AR : As Rolled
N : Normalizing
CR : Controlled Rolling
TMCP: Thermo-Mechanical Controlled Processing
- (3) Steel grades with through thickness properties according to the specified rules
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