中国船级社
CHINA CLASSIFICATION SOCIETY
工厂认可证书
CERTIFICATE OF WORKS APPROVAL

证书编号/Certificate No.
SH26PWA00010

兹证明本证书所述制造厂具备按照下列标准的要求生产本证书所列产品的能力和条件。
This is to certify that the manufacturer stated in the certificate meets the requirements of the standards listed below and is available with the ability and conditions to produce the products described in the certificate.

制造厂/Manufacturer

宝山钢铁股份有限公司

Baoshan Iron & Steel Co.,Ltd.

地址/Address

上海市宝山区富锦路885号
No.885 Fujin Road,Baoshan District,Shanghai

产品名称/Product

板材

Plates

附加标志/Notations

无/Nil.

认可标准/Approval Standard

1. 中国船级社《材料与焊接规范》第1篇第3章
Chapter 3, Part One of China Classification Society Rules for Materials and Welding .
2. 中国船级社《重型破冰船规范》
China Classification Society Rules for heavy icebreakers
3. 中国船级社《极地船舶指南》（2023）附录8
Appendix 8 of China Classification Society Guidelines for Polar Ship(2023)
4. 中国船级社《原油油船货油舱耐蚀钢检验指南》（2023）
China Classification Society Inspection Guide for Corrosion-resistant Steel in Crude Oil Tanker Cargo Tanks(2023)
5. EN10028-6：2017 《压力容器用扁钢产品 第6部分：调质可焊细晶粒钢》
EN10028-6:2017 Flat products made of steels for pressure purposes - Part 6: Weldable fine grain steels, quenched and tempered

用于/Intended for

船舶/Ships

产品明细/Product Description

钢板/Steel Plates(M0001)

名称/Name	属性（值）/Value	单位/Unit
产品名称/Product Name	见附页/ See additional pages	

证书有效期至/This Certificate is valid until **2031年04月17日/ Apr. 17,2031**

发证机构 中国船级社上海分社
Issued by CCS Shanghai Branch

签发日期 2026年04月10日
Date Apr. 10,2026

本证书根据中国船级社规范和相关规定签发。所有证书页为一个整体，必须同时使用。纸质证书每页均须由本社盖章方为有效，电子证书含数字签名方为有效，本证书复印件无效。任何单位和个人均不应摘录或节选本证书的部分内容。有关方对所持证书的真实性有疑问时，可以向我社检验机构咨询。**本证书凡是未注明版本的规范，其（发证时）最新版本适用于本证书。**
This Certificate is issued pursuant to the Rules of the Society and related regulation. All pages of the certificate are taken as a whole and are used simultaneously. No paper certificate page is valid without bearing the stamp of the Society, no electronic certificates is valid without the digital signature, and no copied form of the certificate is regarded as valid. Any part of the certificate is not to be extracted or abridged by any unit or individual in any form. Related parties who are doubted about the authenticity of the certificate may inquire of the Society or its offices. **For Rules with no version indication, their latest version (at the time of issuance of the certificate) applies to the certificate.**

批准的图纸/Approved Drawings

图纸批准号/ Drawings Approval No.: 无/Nil.

产品认可试验报告/ Approval Test Report

试验报告编号/ Test Report No. : CCS-2026-001
试验报告日期/ Test Report Date : 2026-03-27
试验单位/ Laboratory: 广东火炬检测有限公司 Guangdong torch testing Co., LTD
试验单位地址/ Test Address: 广东省中山市火炬开发区创业路12号楼17栋一楼、三楼 1st Floor, 3rd floor, Building 17, Building 12, Chuangye Road, Torch Development Zone, Zhongshan City, Guangdong Province

试验报告编号/ Test Report No. : No.2025-003/004/005/006
试验报告日期/ Test Report Date : 2026-01-26
试验单位/ Laboratory: 宝山钢铁股份有限公司 Baoshan Iron & Steel Co.,Ltd.
试验单位地址/ Test Address: 上海市宝山区富锦路885号 No.885 Fujin Road,Baoshan District,Shanghai

试验报告编号/ Test Report No. : No.2025-001/002CCS
试验报告日期/ Test Report Date : 2025-11-24
试验单位/ Laboratory: 宝山钢铁股份有限公司 Baoshan Iron & Steel Co.,Ltd.
试验单位地址/ Test Address: 上海市宝山区富锦路885号 No.885 Fujin Road,Baoshan District,Shanghai

试验报告编号/ Test Report No. : 2023-001/002CCS
试验报告日期/ Test Report Date : 2023-12-18
试验单位/ Laboratory: 宝山钢铁股份有限公司 Baoshan Iron & Steel Co.,Ltd.
试验单位地址/ Test Address: 上海市宝山区富锦路885号 No.885 Fujin Road,Baoshan District,Shanghai

试验报告编号/ Test Report No. : REPORT 2022-001～003
试验报告日期/ Test Report Date : 2023-03-21
试验单位/ Laboratory: 宝山钢铁股份有限公司 Baoshan Iron & Steel Co., Ltd.
试验单位地址/ Test Address: 上海市宝山区富锦路885号 No.885, Fujin road, Baoshan District, Shanghai

试验报告编号/ Test Report No. : 2021-CP001～004；REPORT 2021-007～008
试验报告日期/ Test Report Date : 2021-11-08
试验单位/ Laboratory: 宝山钢铁股份有限公司 Baoshan Iron & Steel Co.,Ltd.
试验单位地址/ Test Address: 上海市宝山区富锦路885号 No.885 Fujin Road,Baoshan District,Shanghai

试验报告编号/ Test Report No. : REPORT 2021-001～006
试验报告日期/ Test Report Date : 2021-02-26
试验单位/ Laboratory: 宝山钢铁股份有限公司 Baoshan Iron & Steel Co.,Ltd.
试验单位地址/ Test Address: 上海市宝山区富锦路885号 No.885 Fujin Road,Baoshan District,Shanghai

认可后的产品检验方式/Method of Product Inspection after Approval

按规范认可后应进行产品检验的产品/The product should be inspected in term of the rules:
认可后的产品检验应由本社验船师根据本社规范规定按批准的产品检验计划进行检验，经检验合格后由本社颁发船用产品证书。
After approval, product inspection should be carried out by the Surveyor of the Society in accordance with the approved product inspection scheme, and the Marine Product Certificate will be issued by the Society upon satisfactory inspection.

认可保持条件/Maintenance Requirements of Approval

1.工厂认可后，如果图纸、技术文件、工艺规程有较大改变，应征得本社同意。若改变涉及或影响到产品的设计、主要制造材料、关键工艺或产品的特性、特征，则与特性有关的图纸和技术文件应经过本社审批，并在检验机构认为必要时，经本社检验人员到厂进行检查和见证有关试验，其结果应能证实仍符合认可条件。
After works approval, if there are any major changes to the drawings, technical documents, specifications, prior consent should be obtained from the survey office of the Society. If the changes involve or affect product design, major construction materials, key workmanship or product characteristics and properties, drawings and technical documents related to properties are to be examined and approved by the Society and, where deemed necessary by the survey office, the surveyor to the Society will go to the manufacturer to inspect or witness relevant tests and the results of the tests should be able to demonstrate compliance with the approval conditions
2.工厂的质量管理体系应保持有效运行，并且与认可时一致。如果质量管理体系发生改变，应经原体系认证机构审核并报本社批准。

The quality management system of the factory shall be ensure effective operation, and shall be the same as the situation of approval. If there are any changes to the quality management system, auditing of the original certification organization for quality management system and the society's approval shall be obtained.

3.工厂认可证书获得者应接受本社每年一次的定期审核，定期审核日为认可证书期满之日对应的每一周年日，检查工作应在定期审核日的前后三个月内进行。Those who have obtained the certificate of works approval shall receive periodical audit done by the Society on an annual basis. The date of periodical audit shall be each anniversary date which corresponds to the date of expiry of the relevant certificate and the periodical audit shall be done within a time span of three months before and after the annual surveillance date.

4.在认可证书有效期内，本社检验人员可在未经事先通知的情况下对工厂的产品制造过程进行审核，以验证产品的生产是否符合业经本社批准的图纸和文件。工厂应予以配合。

Within the validity of the approval certificate, the surveyor to the Society may pay unannounced audit to the manufacturing process of the product in order to confirm whether it is in compliance with the drawings and documents approved by the Society. The factory should provide an active cooperation and necessary for the surveyor.

5.认可证书有效期内，如果出现可能导致本社暂停或撤消认可的情况，工厂应及时采取有效的纠正措施。

Within the validity of the approval certificate, if cases occur that may cause the Society to suspend or withdraw the certificate, the manufacturer should take corrective actions in a prompt and effective manner.

备注/Remarks

本证书由原工厂认可证书（No. SH25PWA00018)变更并换新。

This certificate is modified and renewed from the previous Works Approval Certificate No. SH25PWA00018.

中国船级社上海分社

CCS Shanghai Branch

注：本证书含有附页，共7页

Note: The certificate is attached with additional 7 page(s)

1. 一般及高强度船体结构钢

Normal Strength Hull Structural Steels, Higher Strength Hull Structural Steels

钢级 Grade	细化晶粒元素 Grain refining elements	钢板最大厚度 Max.thickness mm	交货状态 Supply condition	浇铸方式 Casting method
A、B	Al	22	AR	CC
A、B (Z25/Z35)	Al+Ti	50	AR	CC
	Al	80	N	CC
D	Al	22	AR	CC
D(Z25/Z35)	Al+Ti	35	AR	CC
A、B、D、E (Z25/Z35)	Al+Ti	35	N	CC
	Al+Nb	80	N	CC
	Al+Nb+Ti	100	TMCP	CC
	Al+Nb+Ti	80	N	CC
	Al+Nb+Ti	130	N	IC
AH32、AH36 (Z25/Z35)	Al+Ti	30	CR	CC
AH32、DH32 (Z25/Z35)	Al+Ti	20	AR	CC
	Al+Nb+Ti	40	CR	CC
	Al+Ti	30	N	CC
	Al+Nb+Ti	80	N	CC
	Al+Nb+Ti	100	TMCP	CC
AH36、DH36 (Z25/Z35)	Al+Ti	20	AR	CC
	Al+Nb+Ti	40	CR	CC
	Al+Nb+Ti	80	N	CC
	Al+Nb+Ti	100	TMCP	CC
EH32、EH36 (Z25/Z35)	Al+Nb+Ti	80	N	CC
	Al+Nb+Ti	100	TMCP	CC
AH40、DH40、EH40 (Z25/Z35)	Al+Nb+Ti	100	TMCP	CC
FH32、FH36、FH40 (Z25/Z35)	Al+Nb+Ti	70	TMCP	CC

AH32、AH36、DH32、DH36、EH32、EH36 (Z25/Z35)	Al+Ti	50	TMCP	CC
AH32、AH36、DH32、DH36、EH32、EH36 (Z25/Z35)	Al+Nb+Ti+V	100	N	IC

注 Note：

1. 冶炼方式/Steel Making：转炉 BOF+精炼(CAS，LF，RH)

2. 规格 Spec.　宽度 Width ≤4800mm、 长度 Length ≤25000mm

3. A,B,D(最大厚度 Max.thickness≤22mm)；AH32,AH36(最大厚度 Max.thickness≤16mm):包括钢带 Including steel strip.

2. 焊接结构用高强度淬火回火钢

High Strength Quenched and Tempered Steels for Welded Structures

钢级 Grade	细化晶粒元素 Grain refining elements	钢板最大厚度 Max.thickness mm	交货状态 Supply condition	浇铸方式 Casting method
AH420～AH690 DH420～DH690 EH420～EH690 FH420～FH690 (Z25/Z35)	Al+Ti+V	90	QT	CC
	Al+Nb+Ti+V	160	QT	IC
AH420～AH690 DH420～DH690 EH420～EH690 (Z25/Z35)	Al+Nb+Ti+V	178	QT	IC
AH420、AH460 DH420、DH460 EH420～EH460 (Z25/Z35)	Al+Nb+Ti	100	TMCP	CC
AH500、DH500、EH500 (Z25/Z35)	Al+Nb+Ti	80	TMCP	CC
FH420～FH500 (Z25/Z35)	Al+Nb+Ti	70	TMCP	CC

注 Note：

1. 冶炼方式/Steel Making：转炉 BOF+精炼(CAS，LF，RH)

2. 规格 Spec.　宽度 Width ≤4800mm、 长度 Length ≤25000mm

3. 低温韧性钢
Steels for Low Temperature Service

钢级 Grade	细化晶粒元素 Grain refining elements	钢板最大厚度 Max.thickness mm	交货状态 Supply condition	浇铸方式 Casting method
CL-I-2/CL-II-2/CL-III-2 CL-I-3/CL-II-3/CL-III-3 CL-I-4/CL-II-4/CL-III-4 (Z25/Z35)	Al+Ti	60	TMCP	CC
	Al+Nb+Ti	60	N NT	
9Ni (Z25/Z35)	Al	30	两次正火+回火 NNT	CC
9Ni (Z25/Z35)	Al	50	QT	CC
5Ni (Z25/Z35)	Al	50	QT	CC

注 Note：
1. 冶炼方式/Steel Making：转炉 BOF+精炼(CAS，LF，RH)
2. 规格 Spec. 宽度 Width ≤4800mm、 长度 Length ≤25000mm

4. 高强度船体用止裂钢

High Strength Hull Structural Steels Intended For Crack Arrest

钢级 Grade	细化晶粒元素 Grain refining elements	钢板最大厚度 Max.thickness mm	交货状态 Supply condition	浇铸方式 Casting method
AH47、DH47、EH47	Al+Nb+Ti	100	TMCP	CC
DH36-BCA1 EH36-BCA1 DH40-BCA1 EH40-BCA1 DH36-BCA2 EH36-BCA2 DH40-BCA2 EH40-BCA2 (Z25/Z35)	Al+Nb+Ti	100	TMCP	CC
DH47-BCA1 EH47-BCA1 DH47-BCA2 EH47-BCA2 (Z25/Z35)	Al+Nb+Ti	100	TMCP	CC

注 Note：

1. 冶炼方式/Steel Making：转炉 BOF+精炼(CAS，LF，RH)

2. 规格 Spec.　宽度 Width ≤4800mm、 长度 Length ≤25000mm

5. 复合钢板
Clad Steel Plates

轧制复合板钢级（基材+覆材） Grade of hot rolled clad plates (Base metal+Combined metal)		钢级 Grade	最大厚度 Maximum thickness mm	交货状态 Supply condition	复合方法 Clad method
AH32~DH36+S22053 AH32~DH36+S22253	基材 Base metal	AH32 AH36 DH32 DH36	20	控轧 CR+Acc	轧制 Hot rolled
	覆材 Combined metal	S22053 S22253	4		
AH32~FH40+S30403 AH32~FH40+S31603 AH32~FH40+S31703	基材 Base metal	AH32 DH32 EH32 FH32 AH36 DH36 EH36 FH36 AH40 DH40 EH40 FH40	49	控轧 CR+Acc	轧制 Hot rolled
	覆材 Combined metal	S30403 S31603 S31703	5		

注 Note：
1. 覆材板坯从 CCS 认可的钢厂采购 Combined metal slabs are from other manufacturers approved by CCS
2. 规格 Spec.　宽度 Width ≤4800mm、 长度 Length ≤25000mm

6. 锅炉与受压容器用钢
Steels for boilers and pressure vessels

钢级 Grade	细化晶粒元素 Grain refining elements	钢板最大厚度 Max.thickness mm	交货状态 Supply condition	浇铸方式 Casting method
EN10028-6: P690Q P690QL1 P690QL2 (Z25/Z35)	Al+Ti +V	90	QT	CC
注 Note： 1. 冶炼方式/Steel Making：转炉 BOF+精炼(CAS，LF，RH) 2. 规格 Spec. 宽度 Width ≤4800mm、 长度 Length ≤25000mm				

7. 双相不锈钢板
Duplex stainless steel plate

钢级 Grade	钢板最大厚度 Max.thickness mm	交货状态 Supply condition	浇铸方式 Casting method	冶炼方式 Steel making
022Cr23Ni5Mo3N （S22053/S32205-ASTM） 022Cr22Ni5Mo3N （S22253/S31803-ASTM）	40 mm	固溶处理 Solution Treatment	CC (注 1)	EAF+AOD+LF (注 1)
注 Note： 1. 板坯从 CCS 认可的钢厂采购 Slabs are from other manufacturers approved by CCS 2. 规格 Spec. 宽度 Width ≤4000mm、 长度 Length ≤15000mm				

8. 原油油船货油舱耐腐蚀钢
Corrosion Resistant Steel for Cargo Tanks in Crude Oil Tankers

钢级 Grade	细化晶粒元素 Grain refining elements	钢板最大厚度 Max.thickness mm	交货状态 Supply condition	浇铸方式 Casting method
AH27 RCB~EH27 RCB AH32 RCB~EH32 RCB AH36 RCB~EH36 RCB (Z25/Z35)	Al+Nb+Ti	50	TMCP	CC
注 Note： 1. 冶炼方式/Steel Making：转炉 BOF+精炼(CAS，LF，RH) 2. 规格 Spec. 宽度 Width ≤4800mm、 长度 Length ≤25000mm				

9. 极地船用高强度钢
Higher Strength Hull Structural Steels for Polar Ship

钢级 Grade	细化晶粒元素 Grain refining elements	钢板最大厚度 Max.thickness mm	交货状态 Supply condition	浇铸方式 Casting method
AH32～AH40 -ARC-M(X) DH32～DH40 -ARC-M(X) EH32～EH40 -ARC-M(X) FH32～FH40 -ARC-M(X) X 包括：-20，-30，-40，-50，-60 (Z25/Z35)	Al+Nb+Ti	70	TMCP	CC
AH420～AH500 -ARC-M(X) DH420～DH500 -ARC-M(X) EH420～EH500 -ARC-M(X) FH420～FH500 -ARC-M(X) X 包括：-20，-30，-40，-50，-60 (Z25/Z35)	Al+Nb+Ti	70	TMCP	CC
注 Note： 1. 冶炼方式/Steel Making：转炉 BOF+精炼(CAS，LF，RH) 2. 规格 Spec. 宽度 Width ≤4800mm、 长度 Length ≤25000mm				