



中国船级社
CHINA CLASSIFICATION SOCIETY
工厂认可证书

证书编号/Certificate No.

JS

CERTIFICATE OF WORKS APPROVAL

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

地址/Address

产品名称/Product

连铸板坯
Continuous Casting Slab

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.

用于/Intended for

船舶/Ships

产品明细/Product Description

坯/Billet (M0001)

名称/Name	属性(值)/Value	单位/Unit
规格/Specification	170~220 (厚度/Thickness) × 850~1600 (宽度/Width); 220 (厚度/Thickness) × 1800~2720 (宽度/Width); 250 (厚度/Thickness) × 1800~2720 (宽度/Width); 320 (厚度/Thickness) × 1800~2720 (宽度/Width);	mm
冶炼方式/Melting Process	转炉+炉外精炼 BOF+LF	
浇注方式/Casting Process	连铸 Continuous casting	
脱氧方式/Deoxidation Method	镇静 Killed	
细化晶粒元素/Grain Rrefining Elements	Al (A, B, D, E), Al+Nb、V (其他钢级/Other steel grade)	

证书有效期至/This Certificate is valid until

2030年06月08日/ Jun. 08,2030

发证机构 中国船级社江苏分公司
Issued by CCS/Jiangsu Branch

签发日期 2025年04月24日
Date Apr. 24,2025

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，可以向本社检验机构咨询。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 this certificate.

Form No: W01.

联系方式/Contact Us, 见本社官方网站/See official web site of the Society (<http://www.ccs.org.cn>)

UTN:

钢材等级/Steel Grade	A, B, D, E, AH32, AH36, AH40, DH32, DH36, DH40, EH32, EH36, EH40, FH32, FH36, FH40	
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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 R

试验报告日期/ Test R

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

按规范只认可不进行产品检验的产品/The product approved only in term of the rules:

认可后的产品由制造厂检验合格后签发合格证明，并连同该产品的本社认可证书复印件一并交付用户，制造厂对产品符合公约、法规、本社规范和本社认可的标准规定负责。

After approval, product inspection should be carried out by the Manufacturer. Upon satisfactory inspection, and the Quality Certificate issued by the Manufacturer should be provided to the purchaser together with the copy of the approval certificate issued by the Society. The manufacturer should take responsibility for the product being in compliance with the convention, statutory regulation, the Society rules and the standard accepted by the Society.

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. JS23PWA00214_01) 换新并替代原证书。

This certificate is renewed from and supersedes the previous Works Approval Certificate No. JS23PWA00214_01.

中国船
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中国船级社
CHINA CLASSIFICATION SOCIETY
工厂认可证书

证书编号/Certificate No.

JS

CERTIFICATE OF WORKS APPROVAL

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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

地址/Address

产品名称/Product

钢卷
Steel Coil

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.

用于/Intended for

船舶/Ships

产品明细/Product Description

钢卷/Steel Coil (M0001)

名称/Name	属性(值)/Value	单位/Unit
钢材等级/Steel Grade	A, B	
最大厚度/Maximum Thickness	20	mm
细化晶粒元素/Grain Refining Elements	Al	
浇注方式/Casting Process	连铸 Continuous casting	
脱氧方式/Deoxidation Method	Al	
冶炼方式/Melting Process	转炉+炉外精炼 BOF+LF	
交货状态/Condition of Supply	热轧 AR	
规格/Specification	5~20(厚度)×900~1530(宽度) 5~20(Thickness)×900~1530(Width)	mm

证书有效期至/This Certificate is valid until 2030年06月08日/ Jun. 08,2030

发证机构 中国船级社江苏分社
Issued by CCS Jiangsu Branch

签发日期 2025年04月24日
Date Apr. 24,2025

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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 this certificate.

Form No: W01.

联系方式/Contact Us, 见本社官方网站/See official web site of the Society (<http://www.ccs.org.cn>)

UTN:

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. : 20131101

试验报告日期/ Test Report Date : 2013-11-08

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. JS23PWA00214_02) 换新并替代原证书。

This certificate is renewed from and supersedes the previous Works Approval Certificate No. JS23PWA00214_02.

中国
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中国船级社
CHINA CLASSIFICATION SOCIETY
工厂认可证书

证书编号/Certificate No.

J

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制造厂/Manufacturer

地址/Address

产品名称/Product

钢板
Steel 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.

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
钢材等级/Steel Grade	详见附页 See attached pages	
最大厚度/Maximum Thickness	详见附页 See attached pages	
细化晶粒元素/Grain Refining Elements	详见附页 See attached pages	
浇注方式/Casting Process	连铸 Continuous casting	
脱氧方式/Deoxidation Method	镇静 Killed	
冶炼方式/Melting Process	详见附页 See attached pages	
交货状态/Condition of Supply	详见附页 See attached pages	

证书有效期至/This Certificate is valid until

2030年06月08日/ Jun. 08,2030

发证机构 中国船级社江苏分公司
Issued by CCS/Jiangsu Branch

签发日期 2025年04月24日
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UTN:

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.	
试验报告日期/ Test Report Date	
试验报告编号/ Test Report No.	
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试验报告日期/ Test Report Date	

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

按规定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。
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认可保持条件/Maintenance Requirements of Approval

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备注/Remarks

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This certificate is renewed from and supersedes the previous Works Approval Certificate No. JS23PWA00214_03.

中国船级社
CCS

注：本证书含有附页，共4页
Note: The certificate is attached with additional 4 page(s)

认可范围/Range of Approval

钢 级 Grade	交货状态 Condition of Supply	厚度 Thickness (mm)	冶炼方式 Smelting Method	Z 向性能 Z-direction Property	细化晶粒元素 Grain Refining Elements
A、B、D	AR	5~40	转炉+炉外精炼/BOF+LF	—	Al
E	TMCP	5~60			
A、B	NR	40~60			
D	TMCP	40~60			
AH32、AH36、DH32、DH36、EH32、 EH36	TMCP	5~60	转炉+炉外精炼/BOF+LF	—	Al+ (Nb、V)
AH40、DH40、EH40、FH32、FH36、FH40	TMCP	16~60			
A、B	AR	8~40	转炉+炉外精炼/BOF+LF	Z35 (t $\geq$ 15mm)	Al
	NR	40~60			
D	AR	8~40			
	TMCP	40~60			
E	TMCP	8~60			
AH32、AH36、DH32、DH36、EH32、 EH36、AH40、DH40、EH40、FH32、FH36、 FH40	TMCP	8~60	转炉+炉外精炼/BOF+LF	Z35 (t $\geq$ 15mm)	Al+ (Nb、V)
AH32、AH36、DH32、DH36	NR	8~40	转炉+炉外精炼/BOF+LF	Z35 (t $\geq$ 15mm)	Al+Ti
AH32、AH36	AR	6~30	转炉+炉外精炼/BOF+LF	—	Al+Ti
EH40-BCA1(止裂钢/ Brittle Crack Arrest Steel)、EH40、DH40、AH40、EH36	TMCP	8~85	转炉+炉外精炼/BOF+LF	Z35 (t $\geq$ 15mm)	Al+Nb+V+Ti
EH47- BCA1(止裂钢/ Brittle Crack Arrest Steel)、EH47、DH47、AH47	TMCP	8~80	转炉+炉外精炼/BOF+LF	Z35 (t $\geq$ 15mm)	Al+Nb+V+Ti

钢 级 Grade	交货状态 Condition of Supply	厚度 Thickness (mm)	冶炼方式 Smelting Method	Z 向性能 Z-direction property	细化晶粒元素 Grain Refining Elements
A、B	AR	5~40	转炉+炉外精炼 /BOF+LF	Z35 (t≥ 15mm)	Al
D	NR	5~40			
D、E	TMCP	5~40			
AH32、AH36、DH32、 DH36	NR	5~40	转炉+炉外精炼 /BOF+LF	Z35 (t≥ 15mm)	Al+Ti
AH32、AH36、DH32、 DH36	TMCP	5~40	转炉+炉外精炼 /BOF+LF	Z35 (t≥ 15mm)	Al+Nb+Ti
A、B、 D、E AH32、AH36、DH32、 DH36、EH32、EH36、 AH40、DH40、EH40	TMCP	60~100	转炉+炉外精炼+真空 脱气/BOF+LF+RH	Z35 (t≥ 15mm)	Al+Nb+Ti
AH420、DH420、EH420、 AH460、DH460、EH460、 AH500、DH500、EH500、 AH550、DH550、EH550、 AH620、DH620、EH620、 AH690、DH690、EH690	淬火加回火 /Q+T	10~70	转炉+炉外精炼 /BOF+LF	-	Al+Nb+Ti
A、B、 D、E	正火/N	10~100	转炉+炉外精炼+真空 脱气/BOF+LF+RH	Z35 (t≥ 15mm)	Al+Ti
AH32、AH36、DH32、 DH36、EH32、EH36、 AH40、DH40、EH40、 FH32、FH36、FH40	正火/N	10~100	转炉+炉外精炼+真空 脱气/BOF+LF+RH	Z35 (t≥ 15mm)	Al+Nb+Ti (AH32、DH32、EH32、FH32), Al+Nb+Ti+V (其他钢级/Other steel grade)

钢 级 Grade	交货状态 Condition of Supply	厚度 Thickness (mm)	冶炼方式 Smelting Method	Z 向性能 Z-direction Property	细化晶粒元素 Grain Refining Elements
AH420、DH420、EH420、 AH460、 DH460、EH460、 AH500、DH500、 EH500、 AH550、DH550、EH550、 AH620、DH620、EH620、 AH690、 DH690、EH690	淬火加回火 /Q+T	30~100	转炉+炉外精炼+真空脱气 /BOF+LF+RH	Z35 (t≥ 15mm)	Al+Nb+Ti
AH420、DH420、EH420、FH420、 AH460、 DH460、EH460、FH460、 AH500、DH500、 EH500、FH500、AH550、DH550、EH550、 FH550	TMCP	10~60	转炉+炉外精炼+真空脱气 /BOF+LF+RH	Z35 (t≥ 15mm)	Al+Nb+Ti+V
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	TMCP	5~40	转炉+炉外精炼+真空脱气 /BOF+LF+RH	Z35 (t≥ 15mm)	Al+Nb+Ti+V (CL- I -4、 CL- II -4、 CL-III-4), Al+Nb+Ti (其他钢 级/Other steel grade)
9Ni	淬火加回火 /Q+T	8~50	转炉+炉外精炼+真空脱气 /BOF+LF+RH	Z35 (t≥ 15mm)	Al
EH47、DH47、AH47	TMCP	8~100	转炉+炉外精炼/BOF+LF	Z35 (t≥ 15mm)	Al+Nb+Ti
EH47- BCA1(止裂钢/ Brittle Crack Arrest Steel)	TMCP	50~100	转炉+炉外精炼/BOF+LF	Z35	Al+Nb+Ti
EH47- BCA2(止裂钢/ Brittle Crack Arrest Steel)	TMCP	80~100	转炉+炉外精炼/BOF+LF	Z35	Al+Nb+Ti

钢 级 Grade	交货状态 Condition of Supply	厚度 Thickness (mm)	冶炼方式 Smelting Method	Z 向性能 Z-direction Property	细化晶粒元素 Grain Refining Elements
AH32-W200,DH32-W200, EH32-W200,AH36-W200, DH36-W200,EH36-W200	TMCP	≤ 35	转炉+炉外精炼+真空脱气 /BOF+LF+RH	-	V+Nb+Ti
AH36-W100, DH36-W100,EH36-W100	TMCP	≤ 70	转炉+炉外精炼+真空脱气 /BOF+LF+RH	-	V+Nb+Ti
5Ni	淬火加回火 /Q+T	5~50	转炉+炉外精炼+真空脱气 /BOF+LF+RH	Z35	Al