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**Changzhou CTC Pipelines System Co., Ltd.****常州天常管道系统有限公司**

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中国江苏省常州市武进经济开发区腾龙路 3 号 邮政编码: 213145

[www.ctc-tf.com](http://www.ctc-tf.com)





中国船级社  
CHINA CLASSIFICATION SOCIETY

证书格式号/Form: W01.01-  
HQ000769

# 工厂认可证书 CERTIFICATE OF WORKS APPROVAL

证书编号/Certificate No. SH12W00104

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 as described in the certificate.

制造厂/Manufacturer

常州天常管道系统有限公司

Changzhou CTC Pipelines System Co.,Ltd.

江苏省常州市武进经济开发区腾龙路3号

3 Tenglong Rd, Wujin Economic Zone, Changzhou, Jiangsu

认可产品/Product Approved

船用塑料管及管件

PLASTIC PIPES AND FITTINGS FOR MARINE

船用玻璃钢压力管及配件

Glass Fiber Reinforced Plastic Filament Wound Pipes and Fittings For Marine

认可标准/Approval Standard

- 1.中国船级社(CCS)《材料与焊接规范》(2012)第2篇,第4章  
CCS"Rules for Materials and Welding 2012"Part 2, Chapter 4
- 2.中国船级社(CCS)《钢质海船入级规范》(2012)第3篇第2章附录I  
CCS"Rules for Classification of Sea-going Steel Ships 2012"Part 3, Chapter 2, Appendix I
- 3.IMO A.753(18)《船上使用塑料管道指南》  
IMO A.753(18), Guidelines for the Application of Plastic Pipes on Ships
- 4.IMO MSC.313(88)《船上使用塑料管道指南》(A.753(18)决议修正案  
IMO MSC.313(88), Amendments to the Guidelines for the Application of Plastic Pipes on Ships(Resolution A.753(18))

证书有效期至/ This Certificate is valid until

2017年6月3日 / Jun. 3, 2017

发证机构

中国船级社总部

Issued by

CCS Headquarters

签发日期

2013年9月24日

Date

Sep. 24, 2013

本证书根据中国船级社《钢质海船入级规范》及有关规定签发。关于证书的有关规定见本证书背面的说明。当本证书包括多页纸张时,则所有证书页为一个整体,必须同时使用。每一页证书均须由本社盖章方为有效。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。本认可证书不代表本社对个体产品质量的检验。有关各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。  
This Certificate is issued pursuant to the Rules for Classification of Sea-going Steel Ships and related procedures of the Society. Refer to the back of the certificate for detailed requirements of the certificate. When the certificate consists of more than one page, all pages of the certificate are taken as a whole and are used simultaneously. No certificate page is valid without bearing the stamp of the Society 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. This approval certificate does not constitute the inspection of the Society about the quality of the unit/batch product. Related parties who are doubted about the authenticity of the certificate may inquire of the Society or its offices.

CCS  
中国船级社

CCS CCS  
S CCS CC



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CCS Mansion, 9 Dongzhimen Nan Da Jie, Beijing 100007, China

网址/Web Site: <http://www.ccs.org.cn>

本地检验机构/CCS Local Office: 中国船级社上海分社

CCS Shanghai Branch

电话/Tel: +86(21)58851234 传真/Fax: +86(21)58852626

HQ48973371  
Nº 12706738

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中国船级社  
CHINA CLASSIFICATION SOCIETY

证书格式号/Form: G01.01-  
NJ000179

# 产品无石棉认可证书

## APPROVAL CERTIFICATE OF ASBESTOS-FREE PRODUCT

证书编号/Certificate No. SH13G00009

兹证明下列产品不含有石棉成分。

This is to certify that the following products are asbestos free.

### 认可产品/ Product Approved

船用塑料管及管件

MARINE PLASTIC TUBES AND FITTINGS

### 制造厂/ Manufacturer

常州天常管道系统有限公司

Changzhou CTC Pipelines System Co.,Ltd.

江苏省常州市武进经济开发区腾龙路3号

3 Tenglong Rd, Wujin Economic Zone, Changzhou, Jiangsu

### 认可标准/ Approval Standard

- 1.中国船级社(2011年)通函第38号总第102号“关于实施产品无石棉认可的通知”  
CCS (2011) Circ.No.38 Total No.102, Notice of the Implementation of Approvals of Asbestos-free Products
- 2.海安会决议 MSC.282(86)  
IMO MSC.282(86)
- 3.国际海事组织《2009年香港国际安全与环境无害化拆船公约》  
IMO ~"Hongkong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009~"
- 4.ISO 22262-1: 2012 “空气质量—散装材料—第1部分: 商业散装材料中石棉的取样和定性确定”  
ISO 22262-1: 2012, Air quality - Bulk materials - Part 1: Sampling and qualitative determination of asbestos in commercial bulk materials

证书有效期至/ This Certificate is valid until

2017年6月3日 / Jun. 3, 2017

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

签发日期 2013年6月4日  
Date Jun. 4, 2013

本证书根据中国船级社《钢质海船入级规范》及有关程序规定签发。关于证书的有关规定见本证书背面的说明。当本证书包括多页纸张时,则所有证书页为一个整体,必须同时使用。每一页证书均须由本社盖章方为有效。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。本认可证书不代表本社对个体产品质量的检验。有关各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。

This Certificate is issued pursuant to the Rules for Classification of Sea-going Steel Ships and related procedures of the Society. Refer to the back of the certificate for detailed requirements of the certificate. When the certificate consists of more than one page, all pages of the certificate are taken as a whole and are used simultaneously. No certificate page is valid without bearing the stamp of the Society 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. This approval certificate does not constitute the inspection of the Society about the quality of the unit/batch product. Related parties who are doubted about the authenticity of the certificate may inquire of the Society or its offices.



中国船级社总部/CCS headquarters: 北京市东直门南大街9号船检大厦 邮编: 100007 电话/Tel: +86(10)58112288 传真/Fax: +86(10)58112811  
CCS Mansion, 9 Dongzhimen Nan Da Jie, Beijing 100007, China 网址/Web Site: <http://www.ccs.org.cn>  
本地检验机构/CCS Local Office: 中国船级社上海分社 CCS Shanghai Branch 电话/Tel: +86(21)58851234 传真/Fax: +86(21)58852626

SH62340815

No. 13717196





CERTIFICATE NUMBER

14-SQ1261341-PDA

DATE

22 October 2014

ABS TECHNICAL OFFICE

CN Shanghai ESD

# CERTIFICATE OF DESIGN ASSESSMENT

This is to Certify that a representative of this Bureau did, at the request of  
**CHANGZHOU CTC PIPELINES SYSTEM CO., LTD. -  
CHANGZHOU**

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

PRODUCT: **Thermosetting, Fiberglass (FRP) Pipe, Fittings and Joints**

MODEL: **BL 16B, BL 16B-C**

This Product Design Assessment (PDA) Certificate 14-SQ1261341-PDA, dated 22/Oct/2014 remains valid until 25/Aug/2018 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

AMERICAN BUREAU OF SHIPPING

Bin-Hong Wang  
Engineer

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned manufacturing process without approval from ABS will result in this certificate becoming null and void. This certificate is governed by the terms and conditions as contained in ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010).





CERTIFICATE NUMBER: NX2450977-X1

PORT OFFICE: Nantong, P.R.China

## *Certificate of* **MANUFACTURING ASSESSMENT**

This is to certify that: The Undersigned did evaluate the relevant manufacturing quality procedures for the type of products of the manufacturer:

**CHANGZHOU CTC PIPELINES SYSTEM CO., LTD.** Plant at

**CHANGZHOU, JIANGSU, P.R.CHINA**

The methods of assuring and controlling quality during production as required by the ABS Rules or Guides for the product and the associated specifications or standard were verified to reflect the specific surveys, required by the Rules and Standards for the manufacture of:

### **Thermosetting, Fiberglass(FRP) Pipe, Fittings and Joints**

The manufacturer presented a sample or specimen of the product, representative of the "type" approved, to the undersigned, for the purpose of verifying that the "type" has been manufactured in conformance with the Manufacturer's Product Design Assessments.

This Certificate of Manufacturing Assessment is an evaluation of the manufacturer alone and is neither an approval nor a rejection of the product described above. Unless cancelled, expired or revoked, this certificate remains valid subject to annual audits

Consult the ABS Type Approval website to confirm the continued validity of this certificate and the status of the particular products being manufactured.

ISSUE DATE 12 October 2013

EXPIRATION  
DATE

11 October 2018

SURVEYOR

Li-Yong, Yu

FIRST ANNUAL  
ENDORSEMENT

SECOND ANNUAL  
ENDORSEMENT

THIRD ANNUAL  
ENDORSEMENT

Note: This Certificate evidences compliance with one or more of the Rules, guides, standards or other criteria of American Bureau of Shipping and is issued solely for the use of the Bureau, its committees, its clients or other authorized entities. This Certificate is a representation only that the structure, item of material, equipment, machinery or any other item covered by this Certificate has met one or more of the Rules, guides, standards or other criteria of American Bureau of Shipping as of the date of issue. Parties are advised to review the Rules for the scope and conditions of classification and to review the survey records for a fuller description of any restrictions or limitation on the vessel's service or surveys. The validity, applicability and interpretation of this Certificate is governed by the Rules and standards of American Bureau of Shipping who shall remain the sole judge thereof. Nothing contained in this Certificate or in any notation made in contemplation of this Certificate shall be deemed to relieve any designer, builder, owner, manufacturer, seller, supplier, repairer, operator or other entity of any warranty express or implied.





## ***Confirmation of Product Type Approval***

Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product. This certificate reflects the information on the product in the ABS Records as of the date and time the certificate is printed.

Pursuant to the Rules of the American Bureau of Shipping (ABS), the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) with expiration date of 11/OCT/2018. The continued validity of the Manufacturing Assessment is dependent on completion of satisfactory audits as required by the ABS Rules.

And; a Product Design Assessment (PDA) valid until 25/AUG/2018 subject to continued compliance with the Rules or standards used in the evaluation of the product.

The above entitle the product to be called Product Type Approved.

The Product Design Assessment is valid for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

**Product Name:** Thermosetting, Fiberglass (FRP) Pipe, Fittings and Joints  
**Model Name(s):** BL 16B, BL 16B-C

**Presented to:**

CHANGZHOU CTC PIPELINES SYSTEM CO., LTD.  
3 TENGLONG RD., WUJIN ECONOMIC ZONE  
CHANGZHOU  
China

<b>Intended Service:</b>	Used in the shipboard and offshore piping system for cargo, seawater, fresh water, sanitary, drain and other medium requiring IMO A753(18) L3 or lower as shown in 4-6-3/Table 1 of SVR 2013 and 4-2-2/Table 2 of MODU Rules 2013.
<b>Description:</b>	Glass Fiber Reinforced Thermosetting Plastic Pipes and Fittings
<b>Ratings:</b>	Nominal Pipe Size: 40 up to 400 mm (1.5 up to 16 inches); Max. Working Temperature: 93deg C; Nominal Internal Pressure: 1.6MPa; Maximum external pressure: 4.0 bar See attachment for piping dimension and thickness.
<b>Service Restrictions:</b>	1. Unit Certification is required for this product. Unless it is covered by a PQA program, each length of pipe is to be hydrostatically tested in the presence of a surveyor as per 4-6-3/9 of SVR and 4-2-2/7.9 of MODU Rules. 2. Usage limited to applications where "Level 3" or "0" is required as per 4-6-3/Table 1 of SVR and 4-2-2/Table 2 of MODU Rules. 3. Type BL 16B is not to be used in hazardous areas and locations where electrical conductivity is required as per 4-6-3/5.15.2 of SVR and 4-2-2/7.5.8(b) of MODU Rules. 4. The installation of pipes and fittings is to be in accordance with 4-6-3/7 of SVR, 4-2-2/7.9 of MODU Rules and the Manufacturer's instruction.
<b>Comments:</b>	Not Applicable
<b>Notes / Documentation:</b>	Document No.: CTC-PS/SY-002 Document Title: ABS Type Approval Test Program Document No.: NA Document Title: Product Brochure Test Lab: Test

Center of Shanghai FRP Research Institute co., Ltd Report No. and Date: Internal pressure (Long Term) 20130337; Temperature Limitation 20130321-4&5 (18 March 2013); Axial Strength 20130321-14&15 (18 March 2013); Load Deformation 20130321-6&7&10&11&12&13 (18 March 2013) Test Lab: Far East Fire Testing Center Report No. and Date: Fire Endurance FT13086&13087&13088&13089 (20 March 2013); Surface Flammability FT13123&13124 (27 April 2013); Smoke and Toxicity Test FT13174&13139 (8 August 2013) Test Lab: Changzhou CTC Pipelines System Co., Ltd Report No. and Date; NX2340464-A (16 July 2013)

**Term of Validity:** This Product Design Assessment (PDA) Certificate 13-SQ1061736-PDA, dated 26/Aug/2013 remains valid until 25/Aug/2018 or until the Rules or specifications used in the assessment are revised (whichever occurs first). This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product. Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA. Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

**ABS Rules:** The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product. The Rules applicable to this assessment are: 1-1-4/7.7 and 4-6-3 of the Steel Vessel Rules 2013; 4-2-2/7 of MODU Rules 2013.

**National Standards:** ASTM D1599-1999, ASTM D2992-2012, ASTM D2924-2001

**International Standards:** IMO Resolution A753(18)

**Government Authority:**

**EUMED:**

**Others:**

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	13-SQ1061736-PDA	26/AUG/2013	25/AUG/2018



#### ABS Programs

ABS has used due diligence in the preparation of this certificate and it represents the information on the product in the ABS Records as of the date and time the certificate was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.



MARINE DIVISION

Certificate number: 35373/A0 BV

File number: ACM 135/2728/01

Product code: 2090H

*This certificate is not valid when presented without the full attached schedule composed of 7 sections*

www.veristar.com

## TYPE APPROVAL CERTIFICATE

*This certificate is issued to*

**Changzhou CTC Pipelines System Co.,Ltd**  
Changzhou - CHINA

*for the type of product*

### THERMOSETTING MATERIAL PIPES AND FITTINGS

Glass fiber Reinforced Thermosetting Plastic Pipes and Fittings  
Type BL 16B (Non-conductive)

#### Requirements:

- BUREAU VERITAS Rules for the Classification of Steel Ships
- BUREAU VERITAS Rules for the Classification of Offshore Units
- FTP Code, Resolution MSC.61(67), IMO Resolution A.753(18)

*This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.*

**This certificate will expire on: 20 Oct 2018**

**For BUREAU VERITAS,**

At BV SHANGHAI, on 20 Oct 2013,

Jennifer Zhang



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.





MARINE DIVISION

Certificate number: 35374/A0 BV

File number: ACM 135/2728/02

Product code: 2090H

*This certificate is not valid when presented without the full attached schedule composed of 7 sections*

www.veristar.com

## TYPE APPROVAL CERTIFICATE

*This certificate is issued to*

**Changzhou CTC Pipelines System Co.,Ltd**  
Changzhou - CHINA

*for the type of product*

### THERMOSETTING MATERIAL PIPES AND FITTINGS

Glass fiber Reinforced Thermosetting Plastic Pipes and Fittings  
Type BL 16B-C (Conductive)

#### Requirements:

- BUREAU VERITAS Rules for the Classification of Steel Ships
- BUREAU VERITAS Rules for the Classification of Offshore Units
- FTP Code, Resolution MSC.61(67), IMO Resolution A.753(18)

*This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.*

**This certificate will expire on: 20 Oct 2018**

**For BUREAU VERITAS,**

At BV SHANGHAI, on 20 Oct 2013,

Jennifer Zhang



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.



MARINE DIVISION

Certificate number: SMS.W.II./92167/A.0

www.veristar.com

## RECOGNITION FOR BV MODE II SCHEME

**Changzhou CTC Pipelines System Co.,Ltd**  
Changzhou - CHINA

***Summary of the range of the recognition which is detailed in the subsequent page(s):***

Glass Fiber Reinforced Thermosetting Plastic Pipes and Fittings.

Type:BL 16B & BL 16B-C.

*This certificate is issued to attest that BUREAU VERITAS has performed, at the above company's request and in compliance with the requirements of NR320, a satisfactory assessment of the manufacturing facilities and associated quality procedures related to the range of the recognition.*

**This certificate will expire on: 07 Nov 2017**

For BUREAU VERITAS,

At BV SHANGHAI, on 11 Nov 2013,

Jennifer Zhang

A handwritten signature in black ink, appearing to be 'Jn'.



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division available on the internet site [www.veristar.com](http://www.veristar.com). Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

The electronic version is available at: <http://www.veristarnb.com/veristarnb/jsp/viewPublicPdfRecognition.jsp?id=mbeqs9lyc2>

BV Mod. Ad.E 697 May 2009

This certificate consists of 2 page(s)



# Type Approval Certificate



This is to certify that the undernoted product(s) has/have been tested in accordance with the relevant requirements of the GL Type Approval System.

Certificate No. 61 158 - 13 HH

Company Changzhou CTC Pipelines System Co., Ltd.

3 Tenglong Road Wujin Economic Zone  
Changzhou, 213145 Jiangsu, CHINA

Product Description Glass Fibre Reinforced Thermosetting Plastic Pipes and Fittings (FRP)

Type BL 16B, BL 16B-C

Environmental Category None

Technical Data /  
Range of Application

Size: DN40 ~ DN400  
MAWP: 16bar  
Temp. Range: up to +93 °C  
Resin Type: Epoxy resin CYD-127 / NPEL-127  
Adhesive Type: CTC-0525 / CTC0525C  
Electr. resistance: <0,1MOhm/m (BL 16B-C), N.A.(BL 16B)  
Joining methods: flange joint, adhesive joints; Elbow, tee, flange, reducer, couplings, saddle, double O-ring expansion coupling (DOF - DOM), double O-ring expansion couplings with "O" locking key made of nylon rod (DOM/K - exp. coupling sleeve - DOM).

RANGE OF APPLICATION AND INSTALLATION: Refer to page 2

Test Standard VI-7-8 Test Requirements for Components and Systems of Mechanical Engineering and Offshore Technology

Documents

Test reports: Fire endurance - FT13086~89 dd. 2013-04-17, FT14001 dd. 2014-01-09; Flame spread: FT13123,-24 dd. 2013-05-09; Smoke gen. and toxicity: FT13174, -139 dd. 2013-06-26/25 (Far East Fire Testing Centre); GL Approval Ref.no.13-086574 / Workshop App. Cert. KBZ 1221 HH.

Remarks

For the use on passenger vessels the regulations of the flag state have to be observed.

Valid until 2019-03-12

Page 1 of 2

File No. II.C.03

Hamburg, 2014-03-13

Type Approval Symbol



**Germanischer Lloyd**

*Hanspeter Raschle*  
Hanspeter Raschle

*Plamen Dinkov*  
Plamen Dinkov

This certificate is issued on the basis of "Guidelines for the Performance of Type Approvals Part 1, Procedure".



# Shop Approval

Approval No: **KBZ 1221 HH**

For the **Production of Pipes and Pipe Fittings  
Fabricated from Fibre Reinforced Plastics**

the company **Changzhou CTC Pipelines System Co., Ltd.  
3 Tenglong Road  
213145 Jiangsu  
China**

has applied for the Shop Approval. On the basis of the results of checks regarding the company's production facilities and the qualification of the personnel in charge the above mentioned company is approved within the scope as follows:

Production Techniques **Filament Winding**

Normative Reference **Rules for Classification and Construction  
II - Material and Welding Technology  
Part 2 - Non-metallic Materials  
Chapter 1 - Fibre Reinforced Plastics and Bonding**

Remarks -

The approval consists of this document and a one-page annex.

This Shop Approval is valid until 2016-11-30.

Hamburg, 2013-11-07

## Germanischer Lloyd



Guido Michalek



Wen Ming Zhu





# DET NORSKE VERITAS

## TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. **K-5775**

This is to certify that the  
**Plastic Pipes, Fibre Reinforced Thermosetting**

with type designation(s)  
**BL 16B and BL 16B-C Pipelines System**

Issued to  
**Changzhou CTC Pipelines System Co., Ltd.**  
**Changzhou Jiangsu, China**

is found to comply with  
Det Norske Veritas' Type Approval Programme 1-501.1, 2011, Fibre Reinforced Thermosetting Plastic Pipes  
Det Norske Veritas' Rules for Classification of Ships  
IMO Resolution A.753(18). Guidelines for the Application of Plastic Pipes on Ships

### Application

**For installation according to DNV Rules and Manufacturer's Specifications. The piping system is conductive or non-conductive. The piping system has been tested to Fire Endurance L3 in accordance with IMO Resolution A.753(18). The piping system has been tested to Low Flame Spread in accordance with IMO Resolution A.653(16).**

This Certificate is valid until **2017-12-31**.

Issued at **Høvik** on **2014-01-13**

DNV local station: **Nanjing**

Approval Engineer: **Helene Bjerke**

for **Det Norske Veritas AS**  
Digitally Signed By: Strande, Martin  
Location: DNV Høvik, Norway  
Signing Date: 2014-01-13

**Martin Strande**  
**Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.  
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



# NIPPON KAIJI KYOKAI

## *Certificate*

Certificate No. TA14011H

### *OF APPROVAL*

Article : Glass Fiber Reinforced Plastic Pipe and Fittings  
(FRP)

Product Description : Thermosetting

Manufacturer : Changzhou CTC Pipelines System Co., Ltd  
3 Tenglong Road Wujin Economic Zone  
Changzhou, 213145 Jiangsu, CHINA

Specifications and  
Condition for use : See APPENDIX

THIS IS TO CERTIFY that the above mentioned Plastic pipes are found to comply with the requirements of Chap.6, Part 6 of "GUIDANCE FOR THE APPROVAL AND TYPE APPROVAL OF MATERIALS AND EQUIPMENT FOR MARINE USE", other relevant requirements of the Society, and IMO Resolution A.753(18) Guidelines for the Application of Plastic Pipes on Ships.

This certificate will remain in force until 25 May, 2019

Issued at Tokyo on the 26 May, 2014.

NIPPON KAIJI KYOKAI

for   
(M. Kidogawa)  
General Manager  
Hull Department







Lloyd's  
Register

## Type Approval Certificate

*This is to certify that the undernoted product has been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.*

This certificate is issued to:

PRODUCER	Changzhou CTC Pipelines System Co., Ltd.
PLACE OF PRODUCTION	Lingxiang Road, Wujin Economic Development Zone Changzhou City 213145 People's Republic of China
DESCRIPTION	Glass-Fiber-Reinforced Thermosetting Plastic pipe and fittings
TYPE	BL 16B BL 16B-C
APPLICATION	Marine, Offshore piping systems in locations listed in Table 12.5.3, where a "0" and "L3" indicated, of Part 5, Chapter 12 of Lloyd's Register's Rules and Regulations for the Classification of Ships, July 2013 including Sea water, Fresh water, Sanitary/Drains/Scuppers and Miscellaneous.
STANDARD	Rules and Regulations for the Classification of Ships, July 2013 IMO Res. A753 (18)
RATING	Nominal Pipe Diameters (mm): 40 to 400 Nominal Pipe Wall Thickness (mm): 3.5 to 11.5 Nominal Internal Pressure Rating (bar): 16 Nominal External Pressure Rating (bar): 4 Maximum working Temperature: 93°C

Certificate No.	14/80019
Issue Date	30 May 2014
Expiry Date	29 May 2019
Sheet	1 of 2



Flans Kemp  
Shanghai Technical Support Office  
Lloyd's Register Classification Society (China) Co., Ltd

*Lloyd's Register Classification Society (China) Co., Ltd  
19<sup>th</sup> Floor, Ocean Towers, 550 Yan An Dong Road, Shanghai 200001  
A member of Lloyd's Register Group Limited*

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**TYPE APPROVAL CERTIFICATE**  
**No. MAC079615WS**

**This is to certify that the product identified below satisfies the requirements of the standard quoted under "Reference standard"**

<i>Description</i>	<b>Plastic pipes and fittings</b>
<i>Type</i>	<b>BL 16B; BL 16B-C</b>
<i>Applicant</i>	<b>CHANGZHOU CTC PIPELINES SYSTEM CO.,LTD 3 Tenglong Rd,Wujin Economic Zone,Changzhou,Jiangsu,CHINA</b>
<i>Manufacturer</i>	<b>CHANGZHOU CTC PIPELINES SYSTEM CO.,LTD</b>
<i>Place of manufacture</i>	<b>3 Tenglong Rd,Wujin Economic Zone,Changzhou,Jiangsu,CHINA</b>
<i>Reference standards</i>	<b>IMO Resolution A.753(18); Rules for the Type Approval of Plastic Pipes</b>
<i>Reference documents</i>	<b>RINA TYPE APPROVAL SYSTEM</b>

*Issued in* **SHANGHAI** *on* **April 28, 2015.** *This Certificate is valid until* **April 27, 2020**

**RINA Services S.p.A.**  
**Giuseppe Zagaria**

This certificate consists of this page and 1 enclosure







®

**American  
Petroleum  
Institute**



2014-156

## **Certificate of Authority to use the Official API Monogram**

**License Number: 15LR-0102**

**ORIGINAL**

The American Petroleum Institute hereby grants to

**CHANGZHOU CTC PIPELINES SYSTEM CO., LTD.  
3 Tenglong Rd, Wujin Economic Zone  
Changzhou, Jiangsu  
People's Republic of China**

the right to use the Official API Monogram® on manufactured products under the conditions in the official publications of the American Petroleum Institute entitled API Spec Q1® and **API-15LR** and in accordance with the provisions of the License Agreement.

In all cases where the Official API Monogram is applied, the API Monogram shall be used in conjunction with this certificate number: **15LR-0102**

The American Petroleum Institute reserves the right to revoke this authorization to use the Official API Monogram for any reason satisfactory to the Board of Directors of the American Petroleum Institute.

The scope of this license includes the following: FW Line Pipe

QMS Exclusions: No Exclusions Identified as Applicable

**Effective Date: AUGUST 24, 2015**

**Expiration Date: AUGUST 24, 2018**

To verify the authenticity of this license, go to [www.api.org/compositelist](http://www.api.org/compositelist).

American Petroleum Institute



Vice President, Global Industry Services