Certificate No: LR2006776TA
Issue Date: 31/07/2020
Expiry Date: 28/05/2024

Type Approval Certificate

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

Manufacturer	**Changzhou CTC Pipelines System Co., Ltd.**
Address	No.3 Tenglong Road, Wujin Economic Zone, Changzhou, 213145, China
Place of Production	Changzhou CTC Pipelines System Co., Ltd. No.3 Tenglong Road, Wujin Economic Zone, Changzhou, 213145, China
Type	Plastic Pipes
Description	Glassfibre Reinforced Epoxy Pipes and Fittings
Trade Name	BL 10B/BL 10B-C/BL 16B/BL 16B-C
Application	Marine and offshore piping systems for sea water,fresh water, sanitary/drains/ scuppers and non-essential services in locations listed in Part 5, Chapter 12, Table 12.5.1 of Lloyd's Register's Rules and Regulations for the Classification of Ships where a "0" and "L3" is indicated.
Specified Standard	LR Rules and Regulations for the Classification of Ships, July 2019 IMO Resolution A.753(18), as amended by IMO Resolution MSC.313(88) IMO 2010 FTP Code ASTM D1599 ASTM D2412 ASTM D2105 ASTM D2924 ASTM D2992

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Qing Dong

Specialist to Lloyd's Register Classification Society (China) Co Ltd
A member of the Lloyd's Register group

19th Floor, 550 Yan An dong Road, Shanghai,
Huangpu District, China

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ASTM C581
ISO 75-3 : 2004
ISO 4892-3 : 2006
ISO 8361 : 1991

Ratings

Nominal Diameter (mm):	DN25~DN1100(BL 10B/BL 10B-C) DN40~DN1100 (BL 16B/BL 16B-C)
Nominal Pipe Thickness (mm):	3.5~13.1 (BL 10B/BL10B-C) 3.5~29.8 (BL 16B/BL 16B-C)
Nominal Pressure Rating (bar):	10 (BL 10B/BL 10B-C) 16 (BL 16B/BL 16B-C)
Nominal External Rating (bar):	None (BL10B/BL 10B-C) 4 (BL 16B/BL 16B-C)
Maximum Working Temperature (˚C):	93

Additional Tests

Fire endurance test Level 3 is conducted according to IMO Resolution A.753(18), as amended by IMO Resolution MSC.313(88).
Flame spread test is conducted according to IMO Resolution A.653(16).
Smoke generation & Toxicity test are conducted according to IMO 2010 FTP Code.
Electrical conductivity test is conducted according to ASTM F1173.

Other Conditions

1. Plastic pipes and fittings intended for application in Class I, Class II and Class III systems for which there are Rule requirements, are to be manufactured in accordance with Chapter 14 of LR Rules for Materials and to be manufactured and tested in accordance with Part 5, Chapter 12, Section 5 of the Rules and Regulations for the Classification of Ships.
2. In the case of pipes intended for essential services each qualified person is, at the place of construction, to make at least one test joint, representative of each type of joint to be used. The joined pipe section is to be tested to an internal hydrostatic pressure of four times the design pressure of the pipe system and the pressure held for not

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less than one hour, with no leakage or separation of joints. The bonding procedure test is to be witnessed by the Surveyor.

3. Electrical conductivity test is to be carried out after installation on board.
4. The use of plastics pipes may be restricted by statutory requirements of the National Authority of the country in which the ship is to be registered.

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register Classification Society (China) Co Ltd of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document No. LR2006776TA and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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