



TYPE APPROVAL CERTIFICATE

형식 승인증서

Certificate No. : SGP02568-GP001 **Initial Approval** : 24th February, 1992.
Product : Glassfibre Reinforced Thermoset Plastic Pipes & Fittings
Manufacturer : Ameron(Pte.) Ltd.
7A, Tuas Avenue 3, 639407, Singapore

Product Description : Bondstrand Series 2000M & 7000M
" See Appendix 1 "

Approval Condition : " See Appendix 1 "

THIS IS TO CERTIFY that 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 Manufacturers and Type Approved Equipment".

Pt. 5, Ch. 6, Sec. 102 of the Rules for Classification, Steel Ships, IMO Resolution A.753(18) Level 3 and ASTM D635.

This Certificate is valid until 23rd February, 2016.

Issued at Daejeon, Korea on 25th May, 2011.



국선급
KOREAN REGISTER OF SHIPPING

General Manager of
Materials and Equipment Team

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 : SGP02568-GP001

Date of Issue : 25th May, 2011.

1. Product Description

1) Bondstrand Series 2000M

Internal Design Pressure (bar)	External Design Pressure (bar)	Inner dia./Outer dia. (mm)
25	42	27/34 42/49 53/60.2
25	12 13	82.0/89.2 105.0/114.2
21	4.3	159.0/168.4, 209.0/221.2 263.0/278.0, 314.0/332.0 338.0/357.2, 386.0/407.8 434.0/458.4, 482.0/509.0 553.0/582.6, 579.0/611.0 650.0/686.0, 700.0/738.6 723.0/762.8, 799.0/843.0 900.0/947.6
16	10.5	1000/1054.8

2) Bondstrand Series 7000M (Conductive)

Internal design pressure at ambient temperature dependent on diameter is to be as follows.

Norminal Diameter	1" ~ 4"	6" ~ 40"
Design Pressure (bar)	25	16
	Fittings	16

2. Approval Condition

- 1) This approval is granted on the basis of the approved drawings no 2000M 194C & 7000M195C.
- 2) GRP pipes may be used for the following piping systems.
 - a) Ballast pipes within ballast tanks, void tanks, cofferdam, duct-keel.
 - b) Cooling water pipes for non-essential equipment, except for the parts located between pumps and their sea suction and outboard discharges.
 - c) Sanitary water, drinking water and other domestic fresh water pipes, except for overboard pipes below freeboard deck.
 - d) Fresh water pipes within fresh water tanks.
 - e) Sounding pipes within fresh or ballast water tanks.
 - f) Scupper pipes for drainage which do not pass through the water-tight bulkheads, decks and fire divisions and which do not lead into the refrigerated spaces.
 - g) Cargo oil pipes inside cargo oil tanks.
 - h) Crude oil washing pipes inside cargo oil tanks.
 - i) Purging pipes within cargo oil tanks.
 - j) Effluent pipes from scrubber of an inert gas system subject to approval for their arrangements.
- 3) When used in dangerous spaces, 7000M series are to be electrically conductive and their surface resistance is not to be over 10,000,000 ohm.
- 4) The service temperature of the GRP pipes is to be up to 80 °C but not less than 0 °C.
- 5) Where the pipes penetrate oil or water-tight bulkhead, the bulk-head penetration pieces are to be of metallic construction.
- 6) Individual Product Certification is not required.

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