



CERTIFICATE NUMBER

10-HS613623-PDA

DATE

30 July 2010

ABS TECHNICAL OFFICE

Houston SED - Ship Systems

CERTIFICATE OF DESIGN ASSESSMENT

This is to Certify that a representative of this Bureau did, at the request of
**FIBER GLASS SYSTEMS (SUZHOU) CO. LTD (A VARCO
COMPANY) - SUZHOU**

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. It will remain valid as noted below or until the Rules or specifications used in the assessment are revised (whichever occurs first).

PRODUCT: Expansion Joints
MODEL: GT 175, GT 250, GT 175C, GT 250C
ABS RULE: 2010 Steel Vessels Rules 1-1-4/7.7, 4-6-3, 4-6-2/9. MODU 4-2-2/7
OTHER STANDARD: IMO Resolution A.753 (18) Appendix 2;

AMERICAN BUREAU OF SHIPPING


Hans P. Haendler

Engineering Type Approval Co-ordinator

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 product 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).

FIBER GLASS SYSTEMS (SUZHOU) CO. LTD (A VARCO COMPANY)

NO. 848 LITAGHE ROAD
XIANGCHENG ECONOMIC DEVELOPMENT ZONE
SUZHOU
JIANGSU 215131
China
Telephone: 86-512-8518 0099-315
Fax: 86-512-8518 0101

Product: Expansion Joints

Model: GT 175, GT 250, GT 175C, GT 250C

Intended Service:

Marine & Offshore Application - For Sea Water and Fresh Water Systems where Fire Endurance Tests and Flame Spread Tests are not required.

Description:

Fiberglass Reinforced Plastics (FRP), Epoxy Resin System, Double O-Ring Expansion Joint. GT 175 and GT 250: Non-Conductive. GT 175-C and GT 250-C: Conductive.

Ratings:

Green Thread 250 and Green Thread 250-C are rated to 250 psi (18 bar) and Green Thread 175 and Green Thread 175-C are rated to 175 psi (12 bar) in sizes 2" (50 mm) through 24" (609 mm). Temperature limit = 230 degrees F

Service Restrictions:

Unit Certification is not required for this product.

Where plastic pipes are to be utilized for any installation within tanks or other locations which may be subject to a vacuum condition inside the pipe or a head of liquid on the outside of the pipe, external pressure is to be considered. The pipe is to be designed for an external pressure of not less than the sum of the pressure imposed by the maximum potential head of liquid outside the pipe plus full vacuum of 14.5 psi (1 bar) inside the pipe. The maximum external pressure for a pipe is to be determined by dividing the collapse test pressure by a safety factor of 3. This collapse pressure may be verified experimentally or determined by a combination of testing and calculation methods. These details are to be submitted to ABS before installation of the pipe, for ABS approval on a case by case basis in accordance with 4-6-3/5.3 of the Steel Vessels Rules.

Comments:

Will not be used where Fire Endurance Test and Flame Spread Tests are required.

Each fitting is to be tested at the manufacturer's production facility to a hydrostatic pressure not less than 1.5 times the maximum allowable internal pressure of the pipe in 4-6-3/5.1, in accordance with 4-6-3/9.

Notes / Drawings / Documentation:

This Product Design Assessment (PDA) 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. Use in a non-classed vessel, MODU, Facility or other application is to be to the satisfaction of the manufacturer and purchaser.

Term of Validity:

This product/model is covered under Product Design Assessment (PDA) Certificate # 10-HS613623-PDA, dated 30/Jul/2010. This PDA Certificate remains valid until 29/Jul/2015 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

STANDARDS

ABS Rules:

2010 Steel Vessels Rules 1-1-4/7.7, 4-6-3, 4-6-2/9. MODU 4-2-2/7

National:

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NA

International:

IMO Resolution A.753 (18) Appendix 2

Government Authority:

NA

EUMED:

NA

Others:

NA