



CERTIFICATE NUMBER

14-HS1107277-PDA

DATE

27 January 2014

ABS TECHNICAL OFFICE

Houston OED - Equipment

CERTIFICATE OF DESIGN ASSESSMENT

This is to Certify that a representative of this Bureau did, at the request of
UNISERT MULTIWALL SYSTEMS, INC. - CONROE

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: **Multi-Layer Composite Pipe**

MODEL: **IT3 Fire Water Pipe System**

This Product Design Assessment (PDA) Certificate 14-HS1107277-PDA, dated 27/Jan/2014 remains valid until 26/Jan/2019 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


Mohamed C. Bouamicha
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 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-A3/9.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010).

UNISERT MULTIWALL SYSTEMS, INC.

13295 ROCKY RD.
CONROE
TX 77306
United States
Telephone: 936-441-7722
Fax: 936-788-8202
Email: info@unisert.com
Web: unisert.com

Tier: 5

Product: Multi-Layer Composite Pipe

Model: IT3 Fire Water Pipe System

Intended Service:

Water spray (deluge) systems for process equipment

Description:

IT3 = Triple Wall System (Carbon Steel, patented Grout System and Fiberglass Internal liner). The Carbon Steel outer liner provides impact resistance, high temperature resistance and beam strength. The Patented Grout System stops/reduces any corrosion development/spread of corrosion within the steel pipe. The Fiberglass Internal Liner being in compression negates the cyclic loading concerns, eliminates any corrosion and provides better flow rate characteristics.

Ratings:

Up to 200psi

Range: ID 2" - 12"

4.5" OD and 2" ID

6.625" OD and 4" ID

16" OD and 12" ID

Service Restrictions:

Unit Certification is required for this product since the manufacturer does not certified quality system such as ISO 9001 or equivalent.

This product may be considered for Water Spray(Deluge) Systems for Process Equipment when the following design conditions are fully met and accepted by the Flag Administration.

- a) Plastic piping is installed in open deck or semi-enclosed locations.
- b) The water spray piping system must meet the Level 3 fire endurance requirements as specified in Appendix 1 of 2012 ABS FOI Rules.
- c) In addition to meeting the Level 3 fire endurance requirements, the water spray piping system must meet the requirements of the wet/dry fire endurance testing specified in Appendix 1, Section 8 of 2012 ABS FOI Rules.
- d) An automatic fire detection system is to be installed in areas protected by the water spray system.
- e) The water spray system is to be designed to active automatically upon detection by the automatic fire detection system.
- f) Each section or area served by a water spray system is to be capable of being isolated by one(1) water supply valve only. The stop valve in each section is to be readily accessible, and its location clearly and permanently indicated.
- g) The design of the water spray system is to be such that upon fire detection, the time required to have water flowing through the hydraulically most remote nozzle is less than one(1) minute. This requirement will be verified by system testing at the time of installation and at subsequent annual inspections.
- h) The water spray system piping is to be located downstream of the water supply valve.
- i) All piping upstream of the water supply valve is to meet the requirements for fire main and water spray systems as specified in Appendix 1 of 2012 ABS FOI Rules, or be of metallic material.

Comments:

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes / Drawings / Documentation:

Supporting Data:

* Unisert Fire Water Line Production Flow (Materials, Centralize, Grout Preparation, Grouting, etc)

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- * Material Safety Data Sheet - Bentonite MSDS, dated 21 May 2013, 5 Pages;
 - * Elastizell Product Specification Elastizell JLE Foam Concentrate;
 - * Material Safety Data Sheet, MSDS K1, dated 25 July 12, Quikrete Cements, 6 shts;
 - * BASF Technical Data Sheet, dated Oct 2005, Isophoronediamine, 7 Pages;
 - * Jushi Material Safety Data Sheet - MSDS No.Q/JS 5120, dated 25 Jan 2005, Product Codes, Compostion, Hazard Identification, etc, 8 Pages;
 - * Material Data Sheets, E-Glass Product Codes: ER12-2400-SP162/FPG Rev.2, EDR14-300-FW258/FPG Rev.3, EDR17-600-FW258/FPG Rev.3, EDR17-1200-FW258/FPG Rev.4, EDR24-2400-FW258/FPG Rev.3, EDR24-4800-FW258/FPG Rev.3, EDR17-600-PL386/FPG Rev.2, EDR15-900-PL386/FPG Rev.2, EDR17-1200-PL386/FPG Rev.2, EWR270- PL386/FPG Rev.2, EWR360 - PL386/FPG Rev.3, EWR580- PL386/FPG Rev3,EWR800- PL386/FPG Rev.3, dated 16 Sept & 10 Oct., 2002, 26 Pages;
 - * Nan Ya Material Safety Data Sheet, Ident No. EL127H, Product NPEL-127H, dated 2006-05-01, 6 Pages;
 - * DCAC-31D, 11/2007 Grace Concrete Products, ADVA CAST 530 High-Range Water-Reducing Admixture, 2 Pages;
 - * Portland Cement, Quikrete Product 1124-31, -47 -94 Technical Data;
 - * Huntsman Safety Data Sheet, ID No. AV 4738/HV4739 WA, Version 3, dated 01-08-2007, 2-Component Adhesive System, 5 Pages;
 - * Haliburton Product Data Sheet, AQUAGEL visocifier (Bentonite), dated 3/24/2010;

 - * Haliburton Material Safety Data Sheet, AQUAGEL, dated 3 Jan 2008, 7 Pages;
 - * W.R.Grace Concrete Products Technical Guide Specification Admixtures for Concrete, Section 03300, 9 Pages, dated 2002
 - * W.R.Grace Material Safety Data Sheet, MSDS No. D-06566, dated 11/03/2009, Product ADVA Cast 530, 4 Pages;
 - * Joining Procedure for SK System, 2 Pages;
 - * SwRI Final Reports No. 01.17787.01.809a to d, dated 8 August 2013, Test Method for Fire Endurance Testing of Water Filled Plastic Pipe, IT3 Fire Water Pipe (4.5" OD & 2" ID,16" OD & 12" ID,14" OD & 12" ID, 6.625" OD & 4" ID) (USCG PFM 1-98 & IMO Res. A.753(18) App 2);
 - * SwRI Final Report No. 01.16046.01.205a, dated 13 Oct 2011, Fire Performance Evaluation of Unisert Multiwall Systems , Unisert IT3 FW Level 1 (FTP Code A.753(18).
 - * Owens Corning Product Data Sheet Issue Code M524-C33/0704, dated 31 Jan 06, Product M524-C33 spun 'C' Glass Rod & MSDS 15-MSD-24887-01, date 23 Jan.2000, 7 Pages;
 - * PGI Nordlys MSDS TPS24, Product TPS -24, dated May 2006;
 - * FPI Raw Material Test Reports for Glass Fibers & Resin/ Accelerator /Catalist;

Term of Validity:

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STANDARDS

ABS Rules:

2013 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 2012 FOI Rules, 3-8/5.1.4

National:

NA

International:

IMO Resolution A.753(18), Appendix 2

Government Authority:

USCG PFM 1-98

EUMED:

NA

Others:

NA