



CERTIFICATE NUMBER
16-HS1548547-PDA

DATE
19 Aug 2016

ABS TECHNICAL OFFICE
Houston Ship Engineering

CERTIFICATE OF DESIGN ASSESSMENT

This is to certify that a representative of this Bureau did, at the request of
TRIANGLE FLUID CONTROLS, LTD.

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: **Gasket**

Model: **PTFE Sheet Gaskets - DURLON 9000/9000N, 9200, 9600**

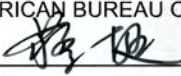
This Product Design Assessment (PDA) Certificate 16-HS1548547-PDA, dated 19/Aug/2016 remains valid until 18/Aug/2021 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

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



Ting Jiang
Engineer/Consultant

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).

TRIANGLE FLUID CONTROLS

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Web: www.trianglefluid.com

Tier: 2 - PDA Issued

Product: Gasket

Model: PTFE Sheet Gaskets - DURLON 9000/9000N, 9200, 9600

Intended Service:

Flanged gaskets, equipment gaskets, and various in-process piping gasket applications requiring a material with wide temperature and pressure ranges and chemical compatibility. Sheets may be cut by hand or die-cut. Applications include steam, chemicals pH 0-14 (except molten alkali metals and elemental fluorine), salt water, fresh and potable water, air, hydraulic, fuel and lube oil services.

Description:

DURLON 9000/9000N: Inorganic Filler with Pure PTFE Resins; DURLON 9200: Barium Sulfate Filler with Pure PTFE Resins;

DURLON 9600: Expanded Pure PTFE. Thickness: 1/64" (0.5mm) - 1/4" (6mm). Size: 60" x 60" (1524mm x 1524 mm) and 60" x 120" (1524mm x 3048 mm).

Rating:

DURLON 9000/9000N and 9200 - Temperature Range: -350°F to +520°F (-212°C to +271°C); Pressure: 1500 psi (103 bar) Maximum; pH Range: 0 to 14.

DURLON 9600 - Temperature Range: -350°F to +600°F (-212°C to +316°C); Pressure: 1800 psi (124 bar) Maximum; pH Range: 0 to 14.

See attached 'pdf'

Service Restriction:

Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Not to be used where materials rendered ineffective by heat are prohibited.

Comments:

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

i) Physical properties and manufacturer's acceptance criteria are to meet the design/application requirements; ii) Chemical compatibility as per manufacturer's recommendation.

Notes/Drawing/Documentation:

Drawing No. ABS - Letter of Conformity - 07-12-16, ABS - Letter of Conformity - 07-12-16, Revision: -, Pages: 1

Drawing No. ABS - PDA REVALIDATION 07-12-16-07122016152546, ABS - PDA REVALIDATION 07-12-16-07122016152546, Revision: -, Pages: 1

Drawing No. ABS Type Approval PDA Certificate - Durlon PTFE, PDA Certificate - Durlon PTFE, Revision: -, Pages: 1

Drawing No. Correspondence, Email 21-Jul-2016 subj: QUOTE: Triangle Fluid Controls Ltd (WCN 408548) - PDA Revalidation of cert, Revision: -, Pages: -

Drawing No. DURLON 9000, Inorganic Filler with Pure PTFE Resins, Revision: -, Pages: 1

Drawing No. DURLON 9200, Barium Sulfate Filler with Pure PTFE Resins, Revision: -, Pages: 1

Drawing No. DURLON 9600, Expanded PTFE, Revision: -, Pages: 1

Drawing No. Declaration of Conformity, Declaration of Conformity, Revision: -, Pages: 1

Drawing No. PO - CHETT072116, Purchase Order, Revision: -, Pages: 1

Drawing No. ATI Laboratory Worksheet DURALON 9200 Series dated 18 Jan 11, Revision: -, Pages: 1

Drawing No. ATI Laboratory Worksheet DURALON 9200 Series dated 20 Nov 09, Revision: -, Pages: 1

Drawing No. ATI Laboratory Worksheet DURALON 9000 Series dated 14 Feb 11, Revision: -, Pages: 1

Drawing No. ATI Laboratory Worksheet DURALON 9000 Series dated 25 Mar 11, Revision: -, Pages: 1

Drawing No. ATI Laboratory Worksheet DURALON 9000N Series dated 14 Mar 11, Revision: -, Pages: 1

Drawing No. ATI Laboratory Worksheet DURALON 9000N Series dated 19 Oct 09, Revision: -, Pages: 1

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Tier: 2 - PDA Issued

Terms of Validity:

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STANDARDS**ABS Rules:**

2016 Steel Vessels Rules 1-1-4/7.7, 1-1-Appendix 3, 4-7-3/1.11.1, 4-6-1/7.1.3, 4-6-1/Table 2.

National:

ASTM F104 (Apr 2011)

ASTM F152 (May 2009)

ASTM F38 (Mar 2014)

ASTM F36 (Jan 15)

International:

NA

Government:

USCG # 46 CFR 56.25-15 (Oct 2013)

EUMED:

NA

OTHERS:

NA