



CERTIFICATE NUMBER
15-HS1358629-PDA

DATE
23 Jul 2015

ABS TECHNICAL OFFICE
Houston SED Machinery - Piping
& Electrical Sys.

CERTIFICATE OF DESIGN ASSESSMENT

This is to certify that a representative of this Bureau did, at the request of
**PARKER HANNIFIN CORPORATION INSTRUMENTATION
PRODUCTS DIVISION AUTOCLAVE ENG. OPER.**

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: **Instrumentation Tubing**

Model: **MS15-092; MS15-093; MS15-085, MS15-097; MS15-095, MS15-098; MS-15-096, MS15-099; 13041;**

This Product Design Assessment (PDA) Certificate 15-HS1358629-PDA, dated 23/Jul/2015 remains valid until 22/Jul/2020 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

Joseph J. Williams
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 manufacturers 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).

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Tier: 2 - PDA Issued

Product: Instrumentation Tubing

Model: MS15-092; MS15-093; MS15-085, MS15-097; MS15-095, MS15-098; MS-15-096, MS15-099;
13041;

Intended Service:

Offshore Application: Process Support in Floating Offshore installations (i.e. Methanol Piping)

Description:

Tubing is manufactured specifically for high pressure applications requiring both strength and corrosion resistance. The tubing is furnished in random lengths between 20 feet (6 meters) and 26.5 feet (8.0 meters). The average is 24 feet (7.3 meters).

Seamless Tubing material: 316SS, ASTM A213 Grade 316SS.

Rating:

Sizes: 1/4", 3/8", 9/16", 3/4", 1", 1-1/2"

20 SM: Design Pressure 20,000 psi @ 100 deg F

Sizes: 1/4", 3/8", 9/16", 3/4", 1"

Models: MS15-092, MS15-093, MS15-085, MS15-095, MS 15-096

15 SM: Design Pressure 15,000 psi @ 100 deg F

Sizes: 9/16", 3/4", 1", 1 1/2"

Model: MS15-097, MS15-098, MS 15-099, 13041

For complete design ratings see attached components list

Service Restriction:

1) 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.

2) Until completion of Type approval process and to fully comply with the applicable Rules, the result of hydrostatic tests is to be provided by the Manufacturer when required by listed Rules.

Comments:

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

2) All tubings are to bear the trademark of the Manufacturer legibly stamped or cast on the exterior of the tubing and fittings and also the primary pressure rating at which the manufacturer guarantees the valves & fittings to meet the requirements of the standard.

Notes/Drawing/Documentation:

Drawing No. 10A-2850, Control Drawing, Revision: -, Pages: 1

Drawing No. 10A-2851, Tubing Gland and Collar, Revision: 10, Pages: 1

Drawing No. 10A-2852, Tubing Gland and Collar, Revision: 10, Pages: 1

Drawing No. 10A-2853, Tubing Gland and Collar, Revision: 17, Pages: 1

Drawing No. 10A-2854, I OD Tubing Gland and Collar, Revision: 15, Pages: 1

Drawing No. 10A-2855, Tubing End Prep and Female Conn, Revision: 5, Pages: 1

Drawing No. 10A-2856, Tubing End Prep and Female Conn, Revision: 4, Pages: 1

Drawing No. 10A-2857, Tubing End Prep and Female Conn, Revision: 5, Pages: 1

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Drawing No. 10A-2858, Tubing End Prep and Female Conn, Revision: 7, Pages: 1
Drawing No. 10A-2859, I Tubing End Prep Female Conn, Revision: 8, Pages: 1
Drawing No. 10A-2862, Coupling Detail, Revision: 4, Pages: 1
Drawing No. 10A-2863, Coupling Detail, Revision: 4, Pages: 1
Drawing No. 10A-2864, Coupling Detail, Revision: 3, Pages: 1
Drawing No. 10A-2865, Coupling, Revision: 5, Pages: 1
Drawing No. 10A-2866, Coupling Detail, Revision: 5, Pages: 1
Drawing No. 10A-2867, Bulkhead Coupling and Nut, Revision: -, Pages: 1
Drawing No. 10A-2868, Bulkhead Coupling and Nut, Revision: 6, Pages: 1
Drawing No. 10A-2869, Bulkhead Coupling and Nut, Revision: 6, Pages: 1
Drawing No. 10A-2870, Bulkhead Coupling and Nut, Revision: 6, Pages: 1
Drawing No. 10A-2871, Bulkhead Coupling and Nut, Revision: 9, Pages: 1
Drawing No. 10A-2886, Elbow Med Pressure, Revision: 5, Pages: 1
Drawing No. 10A-2887, Elbow Med Pressure, Revision: 7, Pages: 1
Drawing No. 10A-2888, Elbow Med Pressure, Revision: 6, Pages: 1
Drawing No. 10A-2889, Elbow Med Pressure, Revision: 5, Pages: 1
Drawing No. 10A-2890, Elbow Med Pressure CLX 16, Revision: 5, Pages: 1
Drawing No. 10A-2891, Tee Med Pressure CTX4440, Revision: 6, Pages: 1
Drawing No. 10A-2892, Tee Med Pressure CTX6660, Revision: 4, Pages: 1
Drawing No. 10A-2893, Tee Med Pressure, Revision: 5, Pages: 1
Drawing No. 10A-2894, Tee Med Pressure, Revision: 5, Pages: 1
Drawing No. 10A-2895, Tee Med Pressure, Revision: 5, Pages: 1
Drawing No. 10A-2896, Body Cross Med Pressure, Revision: 6, Pages: 1
Drawing No. 10A-2897, Body Cross Med Pressure, Revision: 5, Pages: 1
Drawing No. 10A-2898, Body Cross Med Pressure, Revision: 4, Pages: 1
Drawing No. 10A-2899, Body Cross Med Pressure, Revision: 4, Pages: 1
Drawing No. 10A-2900, Body Cross Med Pressure, Revision: 4, Pages: 1
Drawing No. 10F-1832, Conn Detail, Revision: -, Pages: 1
Drawing No. 10F-1840, End Prep, Revision: -, Pages: 1
Drawing No. 10F-1852, Collar Med Pressure, Revision: -, Pages: 1
Drawing No. 10F-1853, Gland Med Pressure, Revision: 1, Pages: 1
Drawing No. 10F-4086, Coupling, Revision: -, Pages: 1
Drawing No. 10F-5085, Bulkhead Coupling, Revision: -, Pages: 1
Drawing No. 20D-1350, Cross Med Pressure, Revision: 1, Pages: 1
Drawing No. 20d-0750, Tee Med Pressure, Revision: 4, Pages: 1
Drawing No. 20d-0784, Elbow CLX24, Revision: 2, Pages: 1

Terms of Validity:

This Product Design Assessment (PDA) Certificate 15-HS1358629-PDA, dated 23/Jul/2015 remains valid until 22/Jul/2020 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.

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Tier: 2 - PDA Issued

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STANDARDS

ABS Rules:

Rules for Conditions of Classification, Part 1 2015 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4
Rules for Building and Classing 2015 Facilities on Offshore Installations 1-1-4/9.7, 1-1-A2, 1-1-A3, 3-4/1

National:

2014, ASME B31.3

International:

NA

Government:

NA

EUMED:

NA

OTHERS:

NA



CERTIFICATE NUMBER
15-HS1358629-PDA-DUP

DATE
23 Jul 2015

ABS TECHNICAL OFFICE
Houston SED Machinery - Piping
& Electrical Sys.

CERTIFICATE OF DESIGN ASSESSMENT

This is to certify that a representative of this Bureau did, at the request of **PARKER HANNIFIN MANUFACTURING IRELAND LIMITED** 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.

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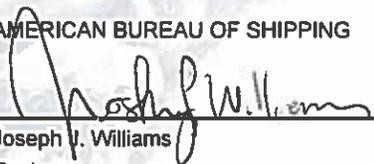
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Tier: 2 - PDA Issued

Product: Instrumentation Tubing

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Drawing No. 10A-2858, Tubing End Prep and Female Conn, Revision: 7, Pages: 1

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Tier: 2 - PDA Issued

STANDARDS

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Rules for Conditions of Classification, Part 1 2015 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4
Rules for Building and Classing 2015 Facilities on Offshore Installations 1-1-4/9.7, 1-1-A2, 1-1-A3, 3-4/1

National:

2014, ASME B31.3

International:

NA

Government:

NA

EUMED:

NA

OTHERS:

NA