



CERTIFICATE NUMBER 16-GE1486376-PDA

EFFECTIVE DATE 01-Apr-2016

EXPIRATION DATE 31-Mar-2021

ABS TECHNICAL OFFICE GENOA ENGINEERING

## CERTIFICATE OF

# Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

**RASTELLI RACCORDI COMMERCIALE S.r.l.**

located at

Via Circonvallazione, 26 – 27019 Villanterio (PV)

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 Piping System, Mechanical Joint**

**Model L-Series and S-Series**

This Product Design Assessment (PDA) Certificate remains valid until 31 March 2021 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau of Shipping

  
Cristina Generale, Senior 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 ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

**RASTELLI RACCORDI COMMERCIALE S.R.L.**

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Web: www.rastelliraccordi.it

**Tier: 2 - PDA Issued**

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**Product: Piping System, Mechanical Joint****Model: L-Series and S-Series****Intended Service:**

Piping systems Class I, II and III in accordance with ABS Rules for Building and Classing Steel Vessels 4-6-2/Table 10.

**Description:**

Pipe Couplings, cutting ring type Light Series (L-Series) and Heavy Series (S-Series), available in carbon steel and stainless steel. For details see Attachment

**Rating:**

Sizes: from 6 mm up to 42 mm.

Pressure: PN160-PN315 (L-Series), PN315-PN630 (S-Series).

Temperature Range: -40 °C to +120°C (Carbon Steel), -55°C to +400°C (Stainless Steel).

For details, refer to attachment.

**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.

**Comments:**

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

Mounting of this product is to be carried by personnel trained and qualified by Rastelli Raccordi in accordance with their procedures and recommendations.

Documents regarding traceability and marking for each unit of this product shall be made available to ABS.

The assembly is to be to the satisfaction of the attending Surveyor.

In all cases, acceptance of the joint type is to be subject to approval for the intended application, and subject to conditions of the approval and applicable Rules.

The installation of mechanical joints is to be in accordance with the manufacturer's assembly instructions.

**Notes/Drawing/Documentation:**

Drawing No. 5086, TN81-L AVP, Revision: 0, Pages: 1

Drawing No. 5086-I, TN81-L INOX, Revision: 0, Pages: 1

Drawing No. 5087, TN81-S AVP, Revision: 0, Pages: 1

Drawing No. 5087-I, TN81-S INOX, Revision: 0, Pages: 1

Drawing No. 6006A, TN92GG-L AVP, Revision: 0, Pages: 1

Drawing No. 6006A-I, TN92GG-L INOX, Revision: 0, Pages: 1

Drawing No. 6006B, TN92GG-S AVP, Revision: 0, Pages: 1

Drawing No. 6006B-I, TN92GG-S INOX, Revision: 0, Pages: 1

Drawing No. 6119A, TD88-L AVP, Revision: 0, Pages: 1

Drawing No. 6119A-I, TD88-L INOX, Revision: 0, Pages: 1

Drawing No. 6119B, TD88-S AVP, Revision: 0, Pages: 1

Drawing No. 6119B-I, TD88-S INOX, Revision: 0, Pages: 1

Drawing No. Doc10, Certificato ISO9001, Revision: 0, Pages: 1

Drawing No. Doc11, Accreditamento lab. MPA, Revision: 0, Pages: 1

Drawing No. Doc12, Certificati materiali, Revision: 0, Pages: 1

Drawing No. doc01, Richiesta assesment, Revision: 0, Pages: 1

Drawing No. doc02, Dich asbesto, Revision: 0, Pages: 1

Drawing No. doc03, Ordine omologa, Revision: 0, Pages: 1

Drawing No. doc04, Catalogo 2B5, Revision: 0, Pages: 1

Drawing No. doc05-01, test report fuoco-1, Revision: 0, Pages: 1

Drawing No. doc05-02, test report fuoco-2, Revision: 0, Pages: 1

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Drawing No. doc05-03, test report fuoco-3, Revision: 0, Pages: 1  
Drawing No. doc05-04, test report fuoco-4, Revision: 0, Pages: 1  
Drawing No. doc05-05, test report fuoco-5, Revision: 0, Pages: 1  
Drawing No. doc05-06, test report fuoco-6, Revision: 0, Pages: 1  
Drawing No. doc05-07, test report fuoco-7, Revision: 0, Pages: 1  
Drawing No. doc05-08, test report fuoco-8, Revision: 0, Pages: 1  
Drawing No. doc06, test report scoppio, Revision: 0, Pages: 1  
Drawing No. doc07, test report mont ripet e tenuta press, Revision: 0, Pages: 1  
Drawing No. doc08, test report tenuta aria, Revision: 0, Pages: 1  
Drawing No. doc09-01, Test report vuoto-impulsi-vibrazione, Revision: 0, Pages: 1  
Drawing No. doc09-02, Traduzione test report vuoto-impulsi-vibr, Revision: 0, Pages: 1

**Terms of Validity:**

This Product Design Assessment (PDA) Certificate 16-GE1486376-PDA, dated 01/Apr/2016 remains valid until 31/Mar/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.

**STANDARDS****ABS Rules:**

2016 Rules for Conditions of Classification - Offshore Units and Structures 1-1-4/9.7, Appendix 2 and 3  
2016 Rules for Building and Classing Mobile Offshore Drilling Units 4-2-1/11.13

2016 Rules for Conditions of Classification, 1-1-4/7.7, 1-1 Appendix 3 and 4, which covers the following:

2016 Rules for Building and Classing Steel Vessels 4-6-2/5.9

2016 Rules for Building and Classing Steel Vessels Under 90 Meters (295 Feet) in Length 4-4-2/13.7

2016 Rules for Building and Classing Offshore Supply Vessels 4-6-2/5.9

2016 Rules for Building and Classing High Speed Crafts 1-1-4/11.9, 1-1-Appendix 2 and 3, 4-4-2/13.7

2014 (Up-dated 2015) Guide for Building and Classing Yachts 4-1-1/3.3, 1-1- Appendix 3/5 and 4-1-1/Table 3, 4-4-2/13.7

**National:**

NA

**International:**

NA

**Government:**

NA

**EUMED:**

NA

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**OTHERS:**

NA

Attachment to PDA Certificate No. 16-GE1486376-PDA

Series	Ø Pipe	Ø gas thread	Ø metric thread	PN
L	6	1/8"	M 10 x 1	315
	8	1/4"	M 12 x 1,5	
	10	1/4"	M 14 x 1,5	
	12	3/8"	M 16 x 1,5	
	15	1/2"	M 18 x 1,5	
	18	1/2"	M 22 x 1,5	
	22	3/4"	M 26 x 1,5	160
	28	1"	M 33 x 2	
	35	1" 1/4	M 42 x 2	
	42	1" 1/2	M 48 x 2	
S	6	1/4"	M 12 x 1,5	630
	8	1/4"	M 14 x 1,5	
	10	3/8"	M 16 x 1,5	
	12	3/8"	M 18 x 1,5	
	14	1/2"	M 20 x 1,5	
	16	1/2"	M 22 x 1,5	
	20	3/4"	M 27 x 2	400
	25	1"	M 42 x 2	
	30	1" 1/4	M 42 x 2	
	38	1" 1/2	M 48 x 2	

Part	Carbon Steel Coupling	Stainless Steel Coupling
Body	9SMnPb 36, WNo. 1.0737 or UNI 4838	AISI 316Ti / WNo. 1.4571
Nut	Ø6L - 22L : QSt 36.3, WNo. 1.0214	AISI 316Ti / WNo. 1.4571
	Ø25L - 42L : C35Pb, WNo. 1.0502	
Ring	Ø6LS a 10LS: 9SMnPb36 – UNI4838 Ø12LS a 42L: 9SMn28 – W.Nr.1.0715	AISI 316L / WNo. 1.4435
Temperature	-18 °C to 120 °C	-55 °C to 400 °C

For couplings made of stainless steel at elevated temperatures, the maximum working pressure has to be reduced with the following factors:

Temperature	20	50	100	150	200	250	300	350	400
Factor	1	0,95	0,89	0,84	0,8	0,75	0,7	0,69	0,66

In addition the limitations given by the coupling materials, the maximum working temperatures for couplings with o-rings of the materials:

NBR Nitrile rubber -30 °C to 90 °C  
FPM Fluorinated rubber -25 °C to 170 °C