



CERTIFICATE NUMBER

05-HG507568-1-PDA

DATE

07 December 2010

ABS TECHNICAL OFFICE

Hamburg Engineering Services

CERTIFICATE OF DESIGN ASSESSMENT

This is to Certify that a representative of this Bureau did, at the request of
PH Industrie-Hydraulik GmbH & Co. KG - Sprockhoevel

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:

End Fittings for Rubber Hoses

MODEL:

Stainless Steel Ferrules and Inserts

This Product Design Assessment (PDA) Certificate 05-HG507568-1-PDA, dated 07/Dec/2010 remains valid until 06/Dec/2015 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

Michael R. V. Zech

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).

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Product: End Fittings for Rubber Hoses

Model: Stainless Steel Ferrules and Inserts

Intended Service:

End fittings for approved flexible rubber hoses manufactured by "Manuli Rubber Industries S.r.l., Ascoli Piceno/Italy"

Description:

Material: stainless steel (1.4571, 1.4404, AISI 316Ti/ 316L). NBR or FPM O-rings.

Ferrule Types:

P1, P2, P3, P4-I, P6-I, P7-I, P8, P9.

Insert Types:

DKOL, DKOS, DKL, DKLL, BEL, BES, DKR, DRF, DKJ, AGJ, CEL, CES, AGR, AGF, AGRk, AGN, DSN, DKO-KÄ, SFL, SFS, VF, FLH, STN, MORFS, FORFS, I-SFL, I-SFS, I-DKOS, I-DKOL, I-DKJ, I-DKOR, I-CES, I-AGR, I-AGJ, I-AGN.

Ratings:

DN 5 - DN 76, NP 40 - 630 bar. The specified max. working pressure is, in any case, to be less or equal to 1/4 burst pressure and depending on operating temperatures or high pressure surges the above specified pressure ratings are to be reduced, accordingly.

Service Restrictions:

Unit Certification is not required for this product.

Fitting types with tapered threads are not to be used for toxic and corrosive fluid services.

Comments:

The application and installation of the hose end fitting types is to be in accordance with the manufacturer's specifications and instructions and is to be specifically approved in connection with the relevant systems in which they are intended to be used. Generally, care is to be taken to prevent built-up of static electricity in piping conveying fluids having flash point of 60°C or less or being routed through hazardous areas. Complete hose assemblies are to be hydrostatically tested at 1.5 times working pressure. The above mentioned end fittings are to be used only on flexible hose lines where the assembly (hose/fitting combination) has been prototype tested to the same standard as that required for the hose.

Notes / Drawings / Documentation:

This Product Design Assessment (PDA) is valid only 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.

Term of Validity:

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STANDARDS

PH Industrie-Hydraulik GmbH & Co. KG

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ABS Rules:

2010 Steel Vessel Rules 1-1-Appendix 3, 4-6-1/7.5.2, 4-6-2/5.5.5/ 5.7/5.9/ 9.6, 4-6-7/3.5.1/ Table 1.

National:

DIN EN ISO 8434-1, DIN 20066, DIN 76341/2, SAE 514/ J518/ J1453, BS 5200-ISO WD 8434-6

International:

NA

Government Authority:

NA

EUMED:

NA

Others:

NA