



Confirmation of Product Type Approval

Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product. This certificate reflects the information on the product in the ABS Records as of the date and time the certificate is printed.

Pursuant to the Rules of the American Bureau of Shipping (ABS), the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) with expiration date of 23/AUG/2020. The continued validity of the Manufacturing Assessment is dependent on completion of satisfactory audits as required by the ABS Rules.

And; a Product Design Assessment (PDA) valid until 30/AUG/2021 subject to continued compliance with the Rules or standards used in the evaluation of the product.

The above entitle the product to be called Product Type Approved.

The Product Design Assessment is valid 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.

ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Product Name: Gasket

Model Name(s): 24SH, 30SH, TF1570, TF1580, TF1590, NA1002, NA1005, NA1006, NA1100, NA1122, SWG 913/913M

Presented to:

TEADIT DEUTSCHLAND GMBH
SCHANZENSTR.35
Germany

Intended Service:

Marine & Offshore Application.

Description:

24SH is a large gasket sheet produced from 100% pure, multi-directionally expanded PTFE. 30SH is a large gasket sheet produced from 100% pure, multi-directionally expanded PTFE. TF1570 is a structured PTFE - Gasket - Sheet and produced from virgin PTFE resin filled with hollow glass micro spheres. TF1580 is a structured PTFE - Gasket - Sheet and produced from virgin PTFE resin filled with Barium Sulfate. TF1590 is a structured PTFE - Gasket - Sheet and produced from virgin PTFE resin filled with Silica. NA1002 is a compressed non-asbestos jointingsheet material produced from Aramid fibres, bonded with Nitrile rubber (NBR). It is being manufactured by means of a hot calender process under quality control standards which are registered under ISO 9001 certification. NA1005 is a compressed non-asbestos jointingsheet material produced from Aramid fibres, bonded with Nitrile Rubber (NBR). It is being manufactured by means of a hot calender process under quality control standards which are registered under ISO 9001 certification. NA1006 is a non-asbestos jointing-sheet material produced from cellulose fibres, bonded with Nitrile rubber (NBR). It is being manufactured by means of a hot calender process under quality control standards, registered and certified under ISO 9001. NA1100 is a universal jointing sheet with high temperature and pressure resistance, manufactured from graphite and carbon fibre, bonded with Nitrile rubber (NBR). It is manufactured by means of a hot calender process under quality control standards which are registered and

certified under ISO 9001. NA1122 is a compressed non-asbestos sheet gasket material produced from a combination of inorganic fibers, bonded with nitrile rubber (NBR). It is being manufactured by means of a hot calender process under quality control standards which are registered under ISO 9001 certification. Spiral-Wound Gaskets (SWG) 913/913M are made of a preformed metallic strip and a soft filler material (PTFE or graphite), wound together under pressure, and optionally with an inner and/or outer guide ring. The metal strip holds the filler.

Ratings:

24SH Temperature Min./continuous Max.: -240°C/270°C Pressure: Max. 200 bar Color: white 30SH Temperature Min./continuous Max.: -268°C/260°C Pressure: Max. 200 bar Color: white TF1570 Temperature Min./Max.: -210°C/260°C Pressure: Max. 55 bar Color: Blue TF1580: Temperature Min./Max.: -210°C/260°C Pressure Max.: 83 bar Color: Off-White TF1590: Temperature Min./Max.: -210°/260°C Pressure Max.: 83 bar Color: Fawn NA1002 Temperature Max./Continuous Max. 400°C / 260°C Pressure Max./ Continuous Max: 110 bar / 80 bar Color: Green NA1005 Temperature Max./Continuous Max. 400°C / 240°C Pressure Max./ Continuous Max: 110 bar / 50 bar Color: Blue NA1006 Temperature Max./Continuous Max. 450°C / 270°C Pressure Max./ Continuous Max: 130 bar / 70 bar Color: Black NA1100 Temperature Max./Continuous Max. 450°C / 270°C Pressure Max./ Continuous Max: 130 bar / 70 bar Color: Black NA1122 Temperature Max./Continuous Max. 550°C / 430°C Pressure Max./ Continuous Max: 150 bar / 102 bar Color: Black Spiral-wound Gaskets (SWG) 913/913M Max Temperature for PTFE filler material: 260°C Max Temperature for Grafitte filler material: 450°C Max Temperature with steam and under inert conditions: 650°C

Service Restrictions:

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) No to be used in the following systems: a. for fire mains and hydrants unless adequately protected as per 4-7-3/1.11.1 of Steel Vessels Rules 2016. b. for connection to the shell where the failure of the material in the vent of a fire would give rise to a danger of flooding as per 4-6-2/9.13.1 of Steel Vessels Rules 2016. c. for remote closure of valves on fuel oil tanks unless protected adequately to ensure effective closure facility in the vent of fire as per 4-6-4/13.5.3 of Steel Vessels Rules 2016.

Comments:

1) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product. 2) Physical properties and manufacturer's acceptance criteria are to meet the design/application requirements. 3) Chemical compatibility as per manufacturer's recommendation.

Notes / Documentation:

See attached file.

Term of Validity:

This Product Design Assessment (PDA) Certificate 16-HG1549485-PDA, dated 31/Aug/2016 remains valid until 30/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.

ABS Rules:

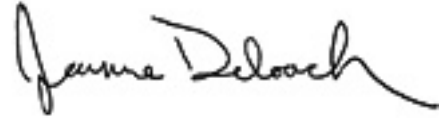
- Rules for Building and Classing Steel Vessels (2016): 1-1-4/7.7, 1-1-Appendix 3 and Appendix 4, 4-1-1/Table 6, Section9; 4-6-1/7.5.2, 4-6-2/5.15/9.13.1, 4-6-4/13.5.3/15.3.2 and 4-7-3/1.11.1 - Steel Vessels Under 90 Meters (295 Feet) in Length (2016): 1-1-4/7.7, 1-1-Appendix 3 and 4 - Offshore Support Vessels (2016): 1-1-4/7.7, 1-1-Appendix 3 and 4 - Steel Vessels for Service on Rivers and Intracoastal Waterways (2016): 1-1-4/7.7, 1-1-Appendix 3 and 4 - Bulk Carriers for Service on the Great Lakes (1978, Up-dated April 2008): 1-1-4/7.7, 1-1-Appendix 3 and 4 - Mobile Offshore Drilling Unit Rules (2016): 1-1-4/9.7, 1-1-Appendix 2 and 3

National Standards:

ASTM F36 (Edition 2015), F37 (Edition 2015), F38 (Edition 2015), F104 (Edition 2014), F152 (Edition 2009), F146 (Edition 2012), F1315 (Edition 2014), F495 (Edition 2011), D792 (Edition 2013). DIN 28090-2 (Edition 2014), 52913 (Edition 2010), 3535 (Edition 2011). EN 13555 (Edition 1997).

International Standards:
Government Authority:
EUMED:
Others:

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	16-HG1549485-PDA	31/AUG/2016	30/AUG/2021



ABS Programs

ABS has used due diligence in the preparation of this certificate and it represents the information on the product in the ABS Records as of the date and time the certificate was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.