



CERTIFICATE NUMBER
16-GD1463346-PDA

DATE
18 Mar 2016

CERTIFICATE OF

ABS TECHNICAL OFFICE
Gdynia Engineering Department

DESIGN ASSESSMENT

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

SAINT-GOBAIN ISOVER G+H AG

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: **Structural Fire Insulation**

Model: **Between stiffeners: U SeaProtect 36, U SeaProtect 46, U SeaProtect 56,
U SeaProtect 86**
**Around stiffeners: U SeaProtect 36, U SeaProtect 46, U SeaProtect 56,
U Seaproduct 76**

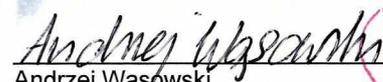
This Product Design Assessment (PDA) Certificate 16-GD1463346-PDA, dated 18/Mar/2016 remains valid until 17/Mar/2021 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

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.

AMERICAN BUREAU OF SHIPPING


Andrzej Wasowski
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 application/certificate is governed by the "Terms and Conditions of the Request for Product Type Approval and Agreement" as contained in the ABS Rules.



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Tier: 2 - PDA Issued

Product: Structural Fire Insulation
Model: Between stiffeners : U SeaProtect 36, U SeaProtect 46, U SeaProtect 56, U SeaProtect 86
Around stiffeners : U SeaProtect 36, U SeaProtect 46, U SeaProtect 56, U SeaProtect 76

Intended Service:

A-60 fire class steel bulkhead insulation.

Description:

Stiffened bulkhead insulated underneath with one layer of mineral wool type U SeaProtect between the stiffeners and with one layer of U SeaProtect around the stiffeners. Insulation U SeaProtect is fitted inside the stiffeners recess when necessary. The whole insulation is affixed with use of welded $\varnothing 3$ mm steel pins and $\varnothing 38$ mm washers spaced 300mm apart both, along and across stiffeners.

Application method 1

Between stiffeners : one layer of U SeaProtect with minimum density 56 kg/m³ and minimum thickness 70 mm;
Around stiffeners : one layer of U SeaProtect with minimum density 56 kg/m³ and minimum thickness 30 mm;

Application method 2

Between stiffeners : one layer of U SeaProtect with minimum density 56 kg/m³ and minimum thickness 70 mm;
Around stiffeners : one layer of U SeaProtect with minimum density 76 kg/m³ and minimum thickness 20 mm;

Application method 3

Between stiffeners : one layer of U SeaProtect with minimum density 86 kg/m³ and minimum thickness 50 mm;
Around stiffeners : one layer of U SeaProtect with minimum density 76 kg/m³ and minimum thickness 25 mm;

Application method 4

Between stiffeners : one layer of U SeaProtect with minimum density 46 kg/m³ and minimum thickness 30 mm;
Around stiffeners : one layer of U SeaProtect with minimum density 46 kg/m³ and minimum thickness 30 mm;
Additionally flush side of bulkhead is insulated with one layer of U SeaProtect with minimum density 46 kg/m³ and minimum thickness 30 mm;

Application method 5

Between stiffeners : one layer of U SeaProtect with minimum density 36 kg/m³ and minimum thickness 70;
Around stiffeners : one layer of U SeaProtect with minimum density 76 kg/m³ and minimum thickness 25 mm;

Application method 6

Between stiffeners : one layer of U SeaProtect with minimum density 36 kg/m³ and minimum thickness 70;
Around stiffeners : one layer of U SeaProtect with minimum density 36 kg/m³ and minimum thickness 70 mm;

Rating:

A-60 fire class steel bulkhead insulation.

Service Restriction:

Unit Certification is not required for this product. If the manufacturer or purchaser requests an ABS Certificate for



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compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Steel bulkhead plate is to be at least 4.5mm thick. Minimum size of stiffeners L65 x 65 x 6 mm.

This certificate may not be used for EU and US flagged vessels, MED and/or USCG have their own specific/requirements.

Application methods 5 and 6 are assessed only for insulated side of bulkhead exposed to fire (restricted use).

Comments:

- 1.) The Manufacturer has provided a declaration about the lack of Asbestos in this product.
- 2.) This approval is not to be misconstrued as an approval on behalf of any Maritime Administration. Validity is limited to countries where ships/facilities will be registered and which government has authorized ABS to review drawings on behalf of its Administration.
- 3.) Test method: APPENDIX 1 of IMO 2010 FTPC Part 3 - Test for "A", "B" and "F" class divisions - Fire resistance test procedures for "A", "B" and "F" class divisions.
- 4.) Each product is to be supplied with its manual for installation and maintenance.
- 5.) Smoke and/or flame penetration test was carried out according to the requirements of IMO Res. MSC.307(88), International Code For Application of Fire Test Procedures (FTP Code) 2010, Annex 1, Part 2.

Notes/Drawing/Documentation:

The tests were conducted and reports issued by Danish Institute of Fire and Security Technology (DANAK), Jernholmen 12, DK-2650 Hvidovre, Denmark.

For application method 1: Test report no. PGA10223 of 25 February 2013 and drawing No. AK2252 Rev. - "Class A-60 steel bulkhead/General Application" (1 sheet)

For application method 2: Assessment no. PHA10498b of 15 January 2015 based on test reports no. PGA10384 of 17 January 2014 & PGA10223 of 23 July 2013

For application method 3: Test report no. PGA10454 of 21 July 2014 and drawing No. AK2297 Rev. - "Class A-60 steel bulkhead/General Application" (1 sheet)

For application method 4: Test report no. PGA10226 of 07 March 2013 and drawing No. AK2253 Rev. - "Class A-60 steel bulkhead/general / double sided application" (3 sheets)

For application method 5: Test report no. PGA10457 of 24 July 2014 and drawing No. AK2295 Rev. - "Class A-60 steel bulkhead/restricted application" (1 sheet)

For application method 6: Assessment no. PHA10498b of 15 January 2015 based on test reports no. PGA10457 of 24 July 2014

Document -Renaming of ISOVER ULTIMATE marine products,

Terms of Validity:

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STANDARDS



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Tier: 2 - PDA Issued

ABS Rules:

- ABS Rules for Conditions of Classification (January 2016): 1-1-4/7.7, 1-1-Appendix 3 & 4,
- ABS Rules for Conditions of Classification (January 2016): Offshore Units and Structures 1-1-4/9.7, 1-1-App. 2 & 3,
- ABS Rules for Building and Classing Steel Vessels (January 2016): 4-1-1/3.3,
- ABS Rules for Building and Classing Steel Vessels Under 90 Meters (295 Feet) in Length (January 2016): 1-1-1 & 4-1-1/3.3
- ABS Rules for Building and Classing Offshore Support Vessels (January 2016): 1-1-1 & 4-1-1/3.3
- ABS Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways (January 2016): 1-1-1 & 4-1-1/3.3
- ABS Rules for Building and Classing Steel Barges (January 2016): 1-1-1
- ABS Rules for Building and Classing Facilities on Offshore Installations (January 2016): 1-1
- ABS Rules for Building and Classing Mobile Offshore Drilling Units (January 2016): 1-1-1

National:

NA

International:

International Convention for the Safety of Life at Sea (Consolidated Edition 2014) Chapter II-2, Reg. 3.2.
IMO Res. MSC.307(88) adopted on 3 December 2010, International Code For Application of Fire Test Procedures (FTP Code) 2010, Edition 2012, Annex 1, Part 3

Government:

NA

EUMED:

NA

OTHERS:

NA