



Marine &amp; Offshore

Certificate number: 42537/A1 BV

File number: AC11000/499/039

Product code: 5000H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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## TYPE APPROVAL CERTIFICATE

This certificate is issued to

**SAINT-GOBAIN ISOVER G+H AG**

Ludwigshafen - GERMANY

for the type of product

**A60 CLASS BULKHEADS**

A-60 Class bulkheads type

U SeaProtect 46-30 mm(46-30 mm)

U SeaProtect 56-70 mm(56-30 mm or 76-20 mm)

U SeaProtect 86-50 mm(76-25 mm or 36-70 mm)

U SeaProtect 36-70 mm(76-25 mm or 36-70 mm) \*\*RESTRICTED APPLICATION : fire against insulated side\*\*

### Requirements:

Bureau Veritas Rules for Classification of Ships, Part C, Chapter 4

SOLAS 74 Convention, as amended, Regulation II-2

IMO resolution MSC.307(88) -FTP Code 2010-

IMO MSC.1/Circ.1434

IMO MSC.1/Circ.1435

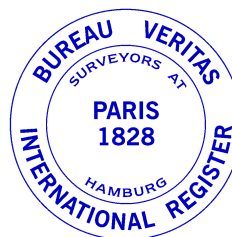
This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

**This certificate will expire on: 11 Nov 2021**

**For Bureau Veritas Marine & Offshore,**

At BV HAMBURG, on 10 Dec 2018,

Jens Bauermeister



This certificate is recognized by Transport Canada

This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION :

#### **A-60 Class Bulkheads type**

##### **U SeaProtect 46 - 30 mm both sides (U SeaProtect 46 - 30 mm)**

Composed of structural steel bulkhead insulated underneath with glass wool :

- 30 mm of U SeaProtect 46, density 46 kg/m<sup>3</sup> in between stiffeners
- 30 mm of U SeaProtect 46, density 46 kg/m<sup>3</sup> around stiffeners using box shape (joints leading to the steel plate)
- 30 mm of U SeaProtect 46, density 46 kg/m<sup>3</sup> on the opposite side of steel plate

##### **U SeaProtect 56 - 70 mm (U SeaProtect 56 - 30 mm or 76 - 20 mm)**

Composed of structural steel bulkhead insulated underneath with glass wool :

- 70 mm of U SeaProtect 56, density 56 kg/m<sup>3</sup> in between stiffeners
- 30 mm of U SeaProtect 56, density 56 kg/m<sup>3</sup> around stiffeners using box shape (joints leading to the steel plate)
- or
- 20 mm of U SeaProtect 76, density 76 kg/m<sup>3</sup> around stiffeners

##### **U SeaProtect 86 - 50 mm (U SeaProtect 76 - 25 mm or 36 - 70 mm)**

Composed of structural steel bulkhead insulated underneath with glass wool :

- 50 mm of U SeaProtect 86, density 86 kg/m<sup>3</sup> in between stiffeners
- 25 mm of U SeaProtect 76, density 76 kg/m<sup>3</sup> around stiffeners using box shape (joints leading to the steel plate)
- or
- 70 mm of U SeaProtect 36, density 36 kg/m<sup>3</sup> around stiffeners

##### **U SeaProtect 36 - 70 mm (U SeaProtect 76 - 25 mm or 36 - 70 mm)**

Composed of structural steel bulkhead insulated underneath with glass wool :

- 70 mm of U SeaProtect 36, density 36 kg/m<sup>3</sup> in between stiffeners
- 25 mm of U SeaProtect 76, density 76 kg/m<sup>3</sup> around stiffeners using box shape (joints leading to the steel plate)
- or
- 70 mm of U SeaProtect 36, density 36 kg/m<sup>3</sup> around stiffeners

**\*\*Tested with fire against insulation side\*\*** (see §4.5)

The cavities inside stiffeners if any, are also to be filled.

Insulation is fastened with Ø30 or 38 mm steel washers and Ø3 mm steel pins with max. spacing of 300 mm on plate between stiffeners and on stiffeners and max. spacing of 150 mm around stiffeners.

### 2. DOCUMENTS AND DRAWINGS :

As per Manufacturer drawings N° AK2252 dated 31/01/2013, N° AK2253 dated 01/02/2013, N° AK2295 dated 27/03/2014 and N° AK22297 dated 26/03/2014.

### 3. TEST REPORTS :

3.1 - For U SeaProtect 46/30 both sides + 46/30 :

Test report N° PGA10226, dated 07/03/2013, as per IMO 2010 FTP Code Annex 1 Part 3, from DBI, Denmark.

3.2 - For U SeaProtect 56/70 + 56/30 or 76/20 :

Test report N° PGA10223, dated 23/07/2013, as per IMO 2010 FTP Code Annex 1 Part 3, from DBI, Denmark.

3.3 - For U SeaProtect 86/50 + 76/25 or 36/70 :

Test report N° PGA10454, dated 21/07/2014, as per IMO 2010 FTP Code Annex 1 Part 3, from DBI, Denmark.

3.4 - For U SeaProtect 36/70 + 76/25 or 36/70 :

Test report N° PGA10457, 21/07/2014, as per IMO 2010 FTP Code Annex 1 Part 3, from DBI, Denmark.

3.5 - Technical Assessment "Mounting methods for insulation on stiffeners" N° PHA10498e, dated 21/06/2016, from DBI, Denmark (L1 mounting in both test reports).

3.6 - Technical Assessment "Insulation on stiffeners" N° PHA10498b, dated 15/01/2015, from DBI, Denmark.

3.7 - Technical Assessment "Minimum thickness and density" N° PHA10498c, dated 13/10/2014, from DBI, Denmark.

3.8 - Technical Assessment "Position of joints" N° PHA10498d, dated 16/12/2014, from DBI, Denmark.

3.9 - Technical Assessment "Pin Pattern" N° PHA10498g, dated 28/11/2014, from DBI, Denmark.

#### **4. APPLICATION / LIMITATION :**

4.1 - The following component(s) shall comply with the requirements of the relevant Bureau Veritas rules and be type approved:

- the insulation materials "U SeaProtect 36", "U SeaProtect 46", "U SeaProtect 56", "U SeaProtect 76" and "U SeaProtect 86"
- any added finish surface material(s).

4.2 - The thickness of insulation can be increased and the density can be increased up to 86 kg/m<sup>2</sup> (technical assessment N° PHA10498c).

4.3 - For alternative pins spacing : technical assessments N° PHA10498d and N° PHA10498g (minimum of six pins and washers used per slab).

4.4 - For alternative mounting methods for stiffeners insulation : technical assessment N° PHA10498e.

4.5 - For U SeaProtect 36/70 + 76/25 or 36/70 : the use is restricted to applications where fire is identified as being from the insulated side.

4.6 - The fitting aboard to be the same as used for the test.

#### **5. PRODUCTION SURVEY REQUIREMENTS :**

5.1 - The **A-60 class bulkheads** are to be supplied by **Saint-Gobain ISOVER G+H AG** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **Saint-Gobain ISOVER G+H AG** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

5.4 - For information concerning the production phase modules, **Saint-Gobain ISOVER G+H AG** has declared the following manufacturing site(s):

**Saint-Gobain ISOVER G+H AG**  
**Industriestrasse 11**  
**DEU-19386 LÜBZ**

#### **6. MARKING OF PRODUCT :**

The product or packing is to be marked with manufacturer name, type, designation and fire-technical rating.

#### **7. OTHERS :**

7.1 - It is **Saint-Gobain ISOVER G+H AG's** responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This Certificate supersedes the Type Approval Certificate n° 42537/A0 BV issued on 11/11/2016 by the Society.

\*\*\* END OF CERTIFICATE \*\*\*