



**TYPE APPROVAL CERTIFICATE**  
**No. FPE351419XG/004**

**This is to certify that the product identified below satisfies the requirements of the standard quoted under "Reference standard"**

<i>Description</i>	<b>Fire resisting bulkheads</b>
<i>Type</i>	<b>ISOVER Steel bulkhead A-60- general application</b>
<i>Applicant</i>	<b>SAINT-GOBAIN ISOVER G+H AG - SAINT - GOBAIN ISOVER G+H AG BURGERMEISTER-GRUNZWEIG-STRASSE 1 67059 Ludwigshafen GERMANY</b>
<i>Manufacturer</i>	<b>SAINT-GOBAIN ISOVER G+H AG - SAINT - GOBAIN ISOVER G+H AG</b>
<i>Reference standards</i>	<b>Chap. II-2 of SOLAS 74 Convention, as amended; IMO Res. MSC.307(88)-(2010 FTP Code)</b>
<i>Reference documents</i>	<b>Rules for Testing and Certification of Marine Materials and Equipment</b>

*Issued in* **Hamburg** on **December 5, 2019**. *This Certificate is valid until* **December 4, 2024**



*RINA Services S.p.A.*  
**Giuseppe Russo**

This certificate consists of this page and 1 enclosure



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### ISOVER Steel bulkhead A-60- general application

#### Product description

#### "Steel Bulkhead A-60"

##### Construction 1: "U SeaProtect 56/70 + 56/30"

Composed of a stiffened steel bulkhead insulated on stiffened side with min. 70 mm mineral wool of type U SeaProtect 56 (density 56 kg/m<sup>3</sup>) from SAINT-GOBAIN ISOVER G+H AG. Min. 30 mm U SeaProtect 56 is fitted around the stiffeners. Insulation (U SeaProtect 56) is fitted inside the void of the stiffeners. The insulation is fastened with 3 mm steel pins and 30 or 38 mm steel washers. Distance between pins is maximum 300 mm. See appendix for further details.

##### Construction 2: "U SeaProtect 56/70 + 76/20"

Composed of a stiffened steel bulkhead insulated on stiffened side with min. 70 mm mineral wool of type U SeaProtect 56 (density 56 kg/m<sup>3</sup>) from SAINT-GOBAIN ISOVER G+H AG. Min. 20 mm U SeaProtect 76 is fitted around the stiffeners. Insulation (U SeaProtect 56) is fitted inside the void of the stiffeners. The insulation is fastened with 3 mm steel pins and 30 or 38 mm steel washers. Distance between pins is maximum 300 mm. See appendix for further details.

##### Construction 3: "U SeaProtect 86/50 + 76/25"

Composed of a stiffened steel bulkhead insulated on stiffened side with min. 50 mm mineral wool of type U SeaProtect 86 (density 86 kg/m<sup>3</sup>) from SAINT-GOBAIN ISOVER G+H AG. Min. 25 mm U SeaProtect 76 (density 76 kg/m<sup>3</sup>) is fitted around the stiffeners. Insulation (U SeaProtect 76) is fitted inside the void of the stiffeners. The insulation is fastened with 3 mm steel pins and 30 or 38 mm steel washers. Distance between pins is maximum 300 mm. See appendix for further details.

##### Construction 4: "U SeaProtect 46/30 both sides + 46/30"

Composed of a stiffened bulkhead deck insulated on stiffened side with min. 30 mm mineral wool of type U SeaProtect 46 (density 46 kg/m<sup>3</sup>) from SAINT-GOBAIN ISOVER G+H AG. Min. 30 mm U SeaProtect 46 is fitted around the stiffeners. Insulation (U SeaProtect 46) is fitted inside the void of the stiffeners. In addition the bulkhead is insulated with min. 30 mm U SeaProtect 46 on non-stiffened side. The insulation is fastened with 3 mm steel pins and 30 or 38 mm steel washers. Distance between pins is maximum 300 mm. See appendix for further details.



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**Construction 5: "U SeaProtect 56/60 + 76/20"**

Composed of a stiffened steel bulkhead insulated on stiffened side with min. 60 mm mineral wool of type U SeaProtect 56 (density 56 kg/m<sup>3</sup>).  
Min. 20 mm U SeaProtect 76 (min. density 76 kg/m<sup>3</sup>) is fitted around the stiffeners.  
The insulation is fasten with 3 mm steel pins and 30 or 38 mm steel washers.  
Distance between pins is maximum 300 mm.  
See appendix for further details.

**Construction 6: "U SeaProtect 50/60 + 76/20"**

Composed of a stiffened steel bulkhead insulated on stiffened side with min. 60 mm mineral wool of type U SeaProtect 50 (min. density 50 kg/m<sup>3</sup>).  
Min. 20 mm U SeaProtect 76 (min. density 76 kg/m<sup>3</sup>) is fitted around the stiffeners.  
The insulation is fasten with 3 mm steel pins and 30 or 38 mm steel washers.  
Distance between pins is maximum 300 mm.  
See appendix for further details.

**Field of application**

Approved for use as vertical fire retarding division of class A-60 with "general application" it means that fire can come from either side of the construction (insulation can be fitted either on stiffened or non stiffened side of the division).

The insulation thickness may be increased and Insulation density may be increased up to 86kg/m<sup>3</sup> as stated in PHA10498c dated 27 November 2019,

The insulation materials and adhesives used have to be approved according to the Marine Equipment Directive and bear the Mark of Conformity. This requirement may also be applicable for surface materials used, if required by relevant rules and regulations.  
Each product is to be supplied with its manual for installation and maintenance.



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**Reference documents**

Test report no. PGA11203A dated 19 March 2018, PGA11096A dated 12 October 2017, PGA10226 dated 7 March 2013, PGA10223 dated 23 July 2013 and PGA10454 dated 21 July 2014, all from Danish Institute of Fire and Security Technology (DBI), Hvidovre, Danmark.

PHA10498a, Revision no.1 (use of mats or rolls instead of slabs) dated 2 November 2018,

PHA10498b (alternative insulation on stiffeners) dated 15 January 2015

PHA10498c (minimum thickness and density) dated 27 November 2019,

PHA10498d (position of joints) dated 16 December 2014,

PHA10498e (mounting methods for insulation an stiffeners) dated 24 November 2014,

PHA10498g (pin pattern) dated 28 November 2014.

PHA11121A dated 8 October 2018. With assessment no. PHA 11221A the validity of technical assessments nos. PHA10498c, PHA10498d, PHA10498e, PHA10498f and PHA10498g is prolonged and extended to cover test report no. PGA11203A.

all issue by Danish Institute of Fire and Security Technology (DBI), Hvidovre, Danmark.

Drawing no. AK2304 (4 pages) dated 11 December 2014 and no. AK2400 dated 27

February 2018 all from SAINT-GOBAIN ISOVER G+H AG.

Documentation filed by RINA with n° HMFP/5829-5832.

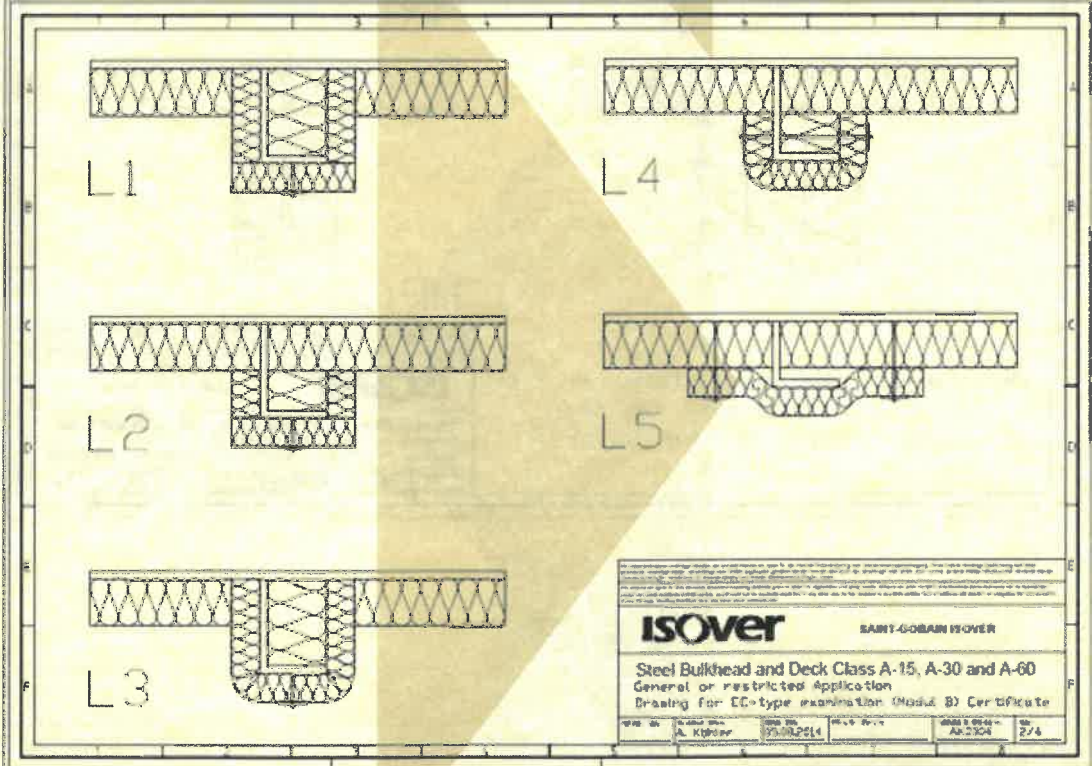
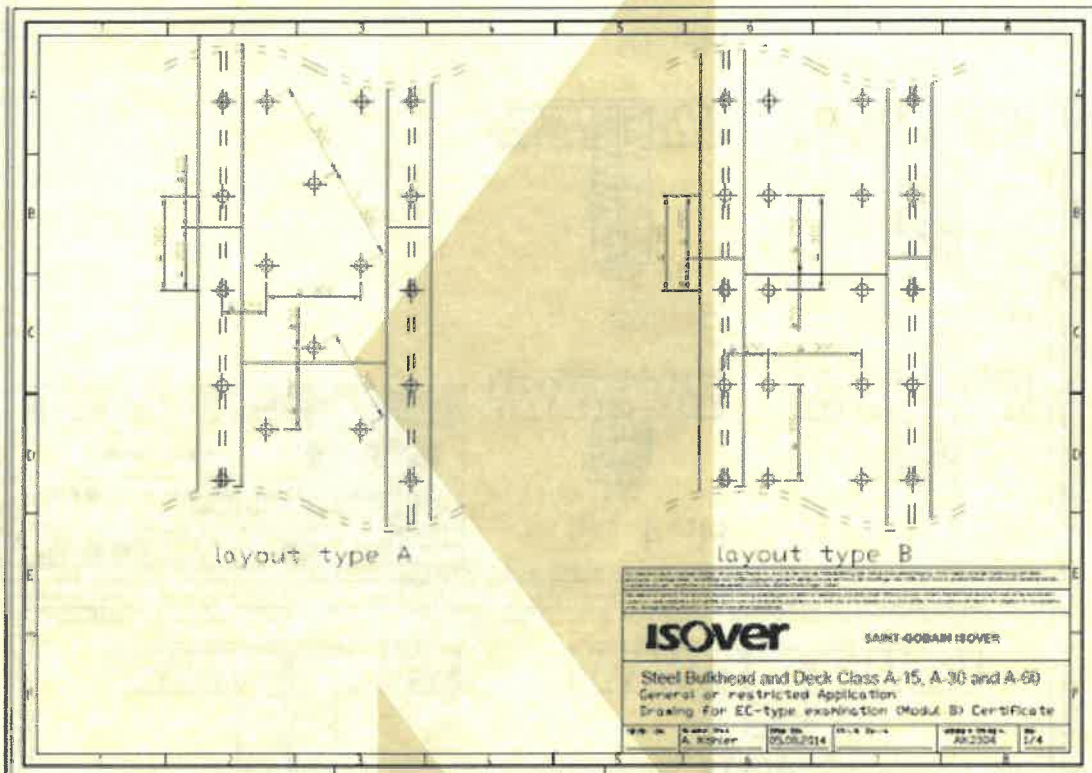
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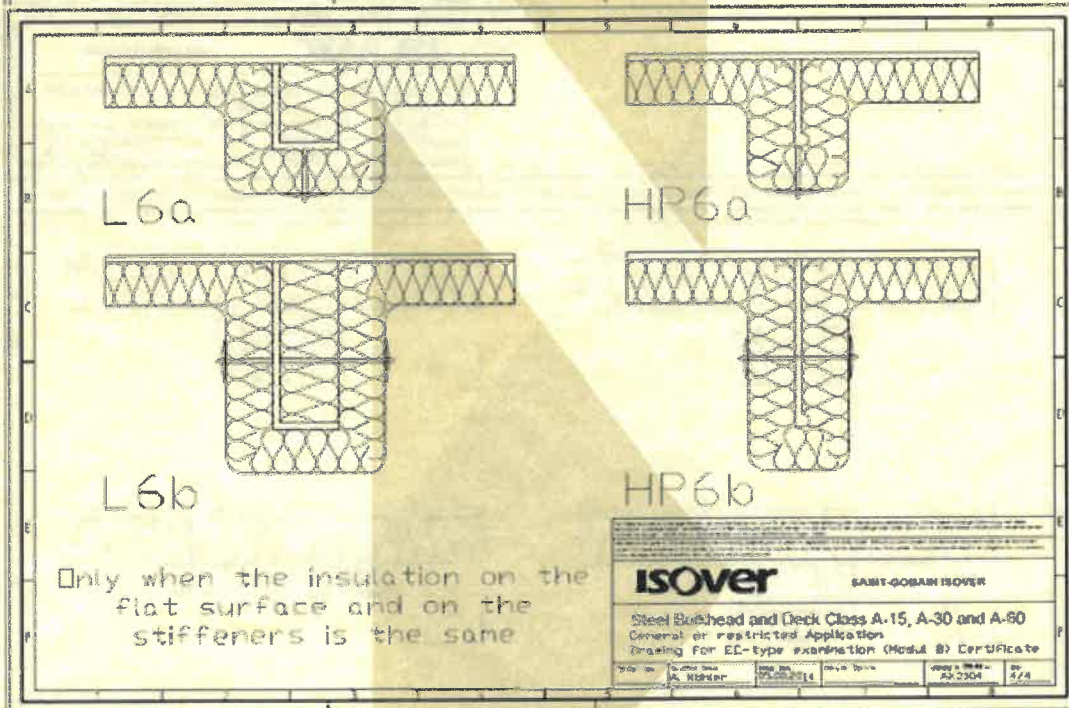
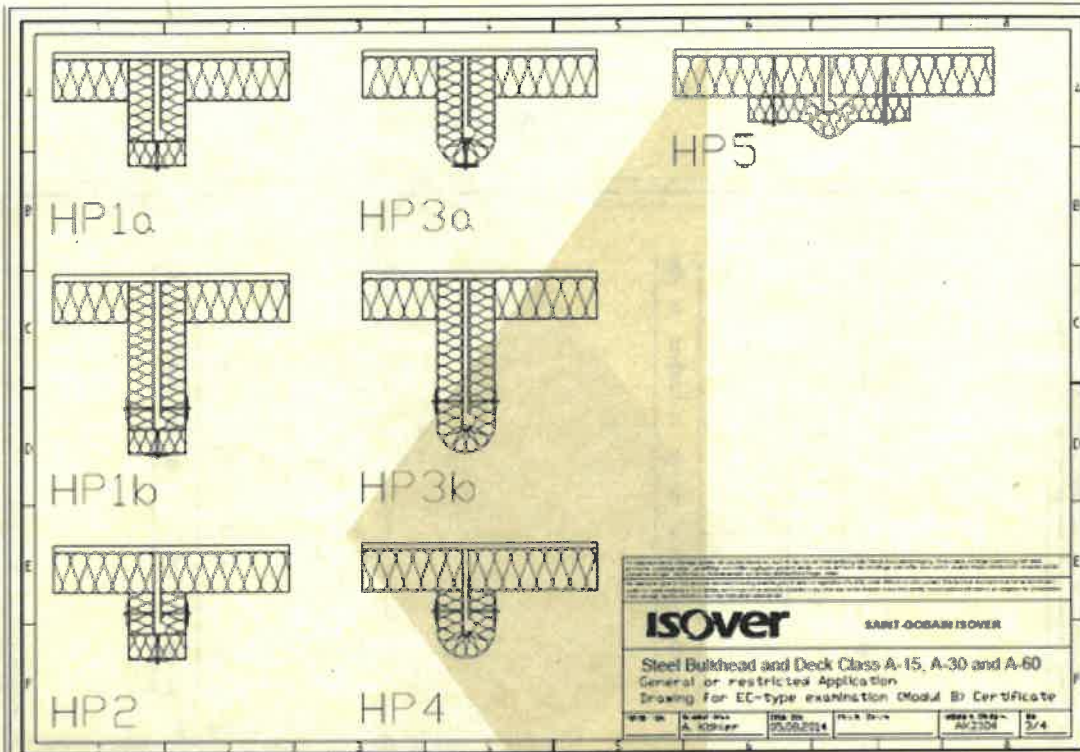
**Tests carried out**

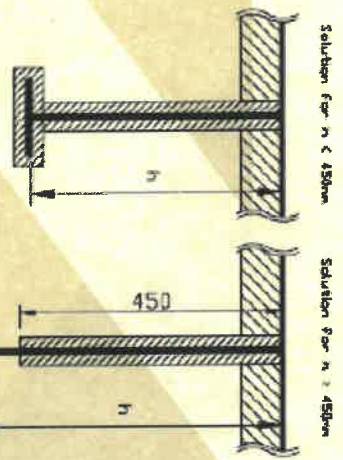
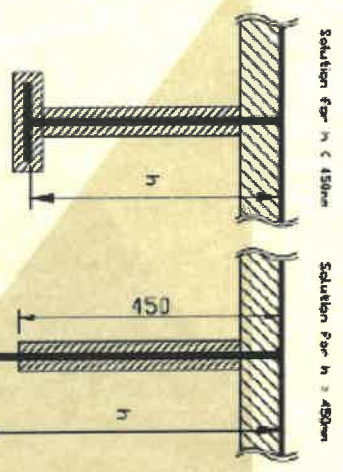
Tested according to IMO 2010 FTP Code part 3.





## Appendix







-  Product for insulation between the stiffeners (level)
-  Product for insulation around the stiffeners

<p><b>ISOVER</b> SAKIT-OCEAN ISOVER</p> <p>Insulation of T Beams A-Class steel Deck &amp; Bulbhead</p>			
<p>General Form V P31780*</p>	<p>Year of Issue 2007/2019</p>	<p>Version / Rev. 0</p>	<p>Document Number 416/171</p>

Hamburg December 5, 2019

