

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Class C Division**with type designation(s)
ALUCORE® and ALUCORE® base

Issued to

**3A Composites GmbH
Singen, Germany**is found to comply with
**DNV GL rules for classification – Ships
DNV GL offshore standards
DNV GL statutory interpretations DNVGL-SI-0364 – SOLAS interpretations****Application :****Approved for use as a class C division and a non-combustible bulkhead.****This certificate is recognized by Transport Canada****Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.**Issued at **Hamburg** on **2017-02-07**for **DNV GL**This Certificate is valid until **2022-02-06**.DNV GL local station: **Augsburg**Approval Engineer: **Marius Mørner**

**Antje Fleischhauer
Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Job Id: **262.1-023541-1**
Certificate No: **TAF00000K8**

Product description

"ALUCORE® and ALUCORE® base"

Is a panel composed of an aluminium honeycomb core covered on both sides with aluminium sheets (0.5 to 1.0mm) attached with polyethylene adhesive (A 2920M). The aluminium sheets are covered with white coil coating (L0072 and L1650).

Principle components (honeycomb):

- foil thickness: 50 µm, cell size 1/4", total thickness 4.5 to 23mm
- foil thickness: 70 µm, cell size 3/8", total thickness 4.5 to 23mm
- foil thickness: 70 µm, cell size 1/2", total thickness 4.5 to 23mm

For further details see the test reports listed under "Type approval documentation" below.

Application/Limitation

Approved for use as a class C division and a non-combustible bulkhead.

The panel is approved as a low flame spread material, not generating excessive quantities of smoke nor toxic products in fire.

Any adhesive used other than the one used during testing, has to be tested for low flame spread characteristics according to IMO 2010 FTP Code part 5.

Each product is to be supplied with its manual for installation, use and maintenance.

Type Approval documentation

Certification in accordance with Class Program DNVGL-CP-0338, October 2015.

Test reports (Part 1), all issued by TÜV Nord, Hamburg, Germany:

- NN03/3211.1 dated 2003-04-01
- NN03/3211.2 dated 2003-04-01
- NN05/4550.1 dated 2005-11-30

Test report no 20151650 (Part 5) dated 2016-02-09, issued by MPA Dresden, Freiberg, Germany.

Tests carried out

Tested according to IMO FTFC Annex 1 Part 1, and in compliance with IMO 2010 FTP Code Ch. 8.

Tested according to IMO 2010 FTP Code Annex 1 Part 5, and in compliance with Annex 2, § 2.2.

Marking of product

The product or packing shall be marked with the name of the manufacturer, type designation and fire technical rating, as applicable.

Transport Canada Approval

Based on the procedures laid down in the Transport Canada Publication entitled "Approval Procedures for, Life Saving Equipment and Structural Fire Protection Products (TP 14612)", DNV GL confirms that the product/s listed in this certificate is/are in accordance with Transport Canada's requirements.

Periodical assessment

DNV GL's surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in Class Program DNVGL-CP-0338, Section 4.