

# Statement of Approval



## ANNEX

Approval No.: WP 1410006 HHH

Date: 2014-03-06  
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Reference Documents Technical specifications deposited at Germanischer Lloyd Head Office

Assessed Documentation - Technical Data Sheets  
- Test Report for static tests No. B681/12.2 issued by IMA Dresden and dated on 2014-02-24.  
- Test Report for fatigue testing No. C 2012-XX issued by KTH Stockholm and dated on 2012-12-03.

Fields of Application Construction of FRP sandwich laminates of components, at the condition that the resins comply with the applicable requirements of the Germanischer Lloyd and are compatible to the core material.

Approved Variants **SAERfoam® O PU (35/yy) 25/35**  
O: ±45° glass fibre reinforcement bridges in 2 directions  
PU (35/yy): Polyurethane foam core with a density of 35 kg/m<sup>3</sup> and a thickness between 15 and 30 mm.  
25/35: 2.5 glass bridges/cm<sup>2</sup> and Saertex ID-code related to the mass of dry bridges

Confirmed Values For the material the following average values (minimum values within brackets) have been verified by testing:

Variant	Compr. Strength (1)	Compr. Modulus (1)	Tensile Strength (2)	Shear Strength (3)	Shear Modulus (3)	Shear Strength (4)	Shear Modulus (4)
SAERfoam O PU (35/20) 25/35	4,77 (4,39)	185,2 (156,6)	2,2 (2,0)	2,3 (2,1)	168,1 (154,9)	2,2 (2,0)	171,3 (166,5)
SAERfoam O PU (35/30) 25/35	2,85 (2,55)	139,46 (133,4)	1,4 (1,3)	1,4 (1,2)	126,4 (120,3)	1,2 (0,9)	118,5 (109,3)

- (1) Compressive properties according to ISO 844 in MPa, tested perpendicular to the plane at 23°C.
- (2) Tensile strength according to ASTM C 297 in MPa.
- (3) Shear properties according to ISO 1922 in MPa, tested parallel to the plane in 0° direction.
- (4) Shear properties according to ISO 1922 in MPa, tested parallel to the plane in 90° direction.

Limitations Any significant changes in design and/or quality of the material may render the approval invalid.

Remarks None

End of Annex

**Germanischer Lloyd**



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The material described below complies with the applicable requirements as given in the Rules and Regulations of Germanischer Lloyd. On this basis the material is

approved as **Sandwich Core Material**

for the construction of components provided that the recommendations for use as specified by the producer are observed.

Type	<b>SAERfoam® O</b>
Description	<b>Lightweight Structural Core Material</b>
Producer	<b>SAERTEX France SAS 2 parc lot ZA Arandon, 38510 Arandon France</b>
Normative Reference	<b>Rules for Classification and Construction, II - Material and Welding Technology Part 2 Non-Metallic Materials</b>

This document consists of this page and a one-page annex which is integral part of the approval.

This Statement of Approval is valid until 2018-03-05.

Hamburg, 2014-03-06

## Germanischer Lloyd

A blue ink signature of Guido Michalek, written in a cursive style.

Guido Michalek

A blue ink signature of Joachim Renbein, written in a cursive style.

Joachim Renbein