Certificate no.:
TAK00002RM

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Sandwich Core Materials

with type designation(s)
AIREX® R64

issued to
Airex AG
Sins, AG, **Switzerland**

is found to comply with
DNV class programme DNV-CP-0084 – Type approval – Sandwich core materials

Application:

Manufacturing of sandwich-structured composites.

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Issued at **Hamburg** on **2026-04-10**
This Certificate is valid until **2031-04-09**.
DNV local unit: **Augsburg**

for **DNV**

Approval Engineer: **Gisle Hersvik**

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

AIREX® R64 Series: A cross-linked, closed-cell PVC (Polyvinyl Chloride)-foam core material for sandwich construction.

Approved variants

- AIREX® R64.80
- AIREX® R64.100
- AIREX® R64.130

Material Properties

Variant	Nominal Density (1)	Density Range (1)	Compressive Strength (2)	Compressive Modulus (2)	Shear Strength (3)	Shear Modulus (3)	Shear Elongation (4)	Tensile Strength (5)	Tensile Modulus (5)	HRT (6)
R64.80	80	72 - 92	1.31 (0.84)	91 (59)	1.06 (0.96)	25 (16)	51	1.83 (1.50)	69 (50)	-
R64.100	100	95 - 120	1.70 (1.00)	103 (70)	1.60 (1.26)	39 (24)	49	2.00 (1.70)	87 (70)	-
R64.130	140	130 - 155	3.08 (2.10)	211 (120)	2.18 (1.75)	55 (40)	48	3.96 (2.70)	208 (100)	47

(1) Density according to ISO 845 in kg/m³
(2) Compressive properties according to ISO 844:2014, procedure B in MPa.
(3) Shear properties according to ISO 1922 in MPa.
(4) Shear elongation at break according to ISO 1922 in %.
(5) Tensile properties according to ASTM D1623 in MPa.
(6) Heat Resistance Temperature (HRT) in °C where the shear strength is >80% of the shear at RT. HRT = 47°C.

All values are average values and verified by testing. The values within brackets are minimum values.

Remarks:
- ASTM D1621-73 procedure B and ISO 844:2014 procedure B work on the same technical principle and provide comparable test results.
- ASTM C273 and ISO 1922 work on the same technical principle and provide comparable test results.

Application/Limitations

The approval covers the density variants as listed above.

The foam complies with the applicable requirements of DNV and is compatible to the laminating resin and/or adhesive.

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

Type Approval documentation

Tests carried out

Type Testing carried out in accordance with **Type Approval documentation**.

Marking of product

Product shall be marked with *manufacturer's name*: **Airex AG - 3A Composites**, *type designation:* **AIREX® R64**, *density* and *batch number*.

The marking is to be carried out in such a way that it is visible, legible and indelible. The marking of product is to enable traceability to the DNV Type Approval Certificate.

Periodical assessment

The scope of the Periodical Assessment is to verify that the conditions stipulated for the Type Approval is complied with and that no alterations are made to the product design or choice of materials.

Periodical assessments (for Certificate Retention / Certificate Renewal) shall be performed according to DNV-CP-0338.

This certificate is only valid if required Periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in https://approvalfinder.dnv.com

END OF CERTIFICATE