



TYPE APPROVAL

Certificate No.:
TA-DNV-CP-0084-08210-0

Issued:
2022-07-07

Valid until:
2026-12-05

Issued for:

Sandwich Core Material

with type designation(s)

Balsasud Core Standard Grade (SG)

As specified in Annex 1

Issued to:

CoreLite

KM 24 via Daule, Guayaquil, Ecuador

According to:

DNV-SE-0436:2021-09 Shop approval in renewable energy

and

DNV-CP-0084:2021-09 Type approval – Sandwich core materials

Applying:

DNV-SE-0441:2021-10 Type and component certification of wind turbines

Based on the documents listed in Annex 1.

This Type Approval supersedes the Type Approval TAK00000JS.

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

Hellerup, 2022-07-07
For DNV Renewables Certification

Hamburg, 2022-07-07
For DNV Renewables Certification

Bente Vestergaard
Service Line Leader

Bernhard Krüger
Project Manager

TYPE APPROVAL – ANNEX 1

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Product description and application

A balsa core material for sandwich construction for applications in wind turbines and maritime applications.

Approved variants

BALSASUD Core Standard Grade SG with nominal density 152 kg/m³
Approved range: 132 – 169 kg/m³

Type Approval documentation

Technical data sheet(s)	BALSASUD – Product Data Sheet, Submitted on 2021-12-06
Safety data sheet(s)	BALSASUD – Safety Data Sheet, Submitted on 2021-11-10
Test report(s)	Test Report – Balsa Wood Mechanical Properties Characterization, R-L2021073a.Rev02.EN, 2021-12-16
Inspection report(s)	DNV workshop inspection report, WIR-8210-001-000-Rev.0, dated 2022-06-30
Quality control documentation	ISO 9001:2015 Certificate, EC228755 No. 1, 2020-08-28 Certificate of Analysis, 6211077, 2021-08-12 Certificate of Analysis, 6211037, 2021-04-27 Certificate of Analysis, 6211034, 2021-11-16

Material properties

Variant	Nominal Density (1)	Compr. strength (2)	Compr. Modulus (2)	Compr. Strength (3)	Compr. modulus (3)	Shear strength (4)	Shear modulus (4)	Tensile Strength (5)	Tensile Modulus (5)
BALSASUD Core SG	152	10.7 (9.6)	3630 (3630)	0.82 (0.65)	59.0 (36.4)	2.18 (2.12)	187.0 (180.0)	7.46 (5.47)	2380 (2120)

- (1) Density according to ISO 845:2006 in kg/m³
 (2) Compressive properties parallel to the grain (0°) according to ISO 844:2014 in MPa
 (3) Compressive properties perpendicular (90°) to the grain according to ISO 844:2014 in MPa.
 (4) Shear properties according to ASTM C-273 in MPa.
 (5) Tensile properties parallel to the grain according to ASTM C 297 in MPa.

Values without brackets: Average values verified by testing.

Values in brackets: msmv = manufacturers specified minimum values.

Approved production sites

CoreLite
KM 24 via Daule
Guayaquil
Ecuador

Last workshop inspection: 2021-08-31

Periodic assessment

2.5 years after this type approval is issued, the client shall inform DNV about any modifications in production. An intermediate inspection might be needed based on the implemented changes.