Certificate no.:
TAK00002HR

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Wood Products

with type designation(s)
Composite laminated wood

issued to
Luoyang Sunrui Rubber & Plastic Science and Technology Co., Ltd.
Luoyang, Henan Province, **China**

is found to comply with
DNV class programme DNV-CP-0099 – Type approval – Hardwood for tank supports

Application:

Supporting material between cargo and fuel tanks for liquified gas and support in hull structure, for minimum temperature of cargo of -163°C.

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

Issued at **Hamburg** on **2025-07-04**
This Certificate is valid until **2030-07-03**.
DNV local unit: **Wuhan NB & CMC**

for **DNV**

Approval Engineer: **Joachim Rehbein**

Product description

Composite laminated wood: Glass fibre reinforced epoxy resin.

Material properties

The following values have been confirmed by type testing:

Properties	Test Method	Result	Unit	Value
Density, +20°C	ISO 1183-1	1.57 – 1.63	g/cm^3	msv
Compressive strength ⊥	ASTM D695-23	325	MPa	mean
Compressive strength ||	ASTM D695-23	261	MPa	mean

Notes:
All testing at 23°C with regular, not submerged material.
⊥ = Perpendicular to laminate
|| = Parallel to laminate
msv: manufacturer's specified value
mean: arithmetic mean value

Application/Limitation

For use as supporting material between fuel or cargo tanks for liquified gas and the support in hull structure,

Drawings showing arrangement of the supports together with calculation of the compressive stresses shall be submitted for approval for each ship application.

The material shall be delivered with a certificate according to EN 10204/3.1 or equivalent.

Storage, handling and installation to be in accordance with manufacturer's recommendations. Any repairs of installed blocks to be in accordance with manufacturer's recommendations and be informed to the Society.

This approval is solely connected to the physical and strength properties of the material. The approval does not include any evaluation of toxicity, contamination, pollution, or fire technical properties.

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 according to **Type Approval documentation**.

Marking of product

Product/package shall be marked with *manufacturer's name* or *manufacturer's symbol* and *type designation.*

Assessed production site

Luoyang Sunrui Rubber & Plastic Science and Technology Co., Ltd.,
No. 40 Binhe Road, high-tech Development Zone,
Luoyang 471003,
Henan Province,
China

Periodical assessments

A condition for retention of the TA certificate in its validity period is that periodical assessments are successfully carried out. The objective of the periodical assessment is to verify that the conditions for the TA have not been altered.

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