

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Wood Products

with type designation(s)
WISA® STANDARD PLYWOOD

Issued to

UPM-Kymmene Chudovo LLC
CHUDOVO NOVGOROD, Russian Federation

is found to comply with

DNV GL class programme DNVGL-CP-0098 – Type approval – Plywood

Application :

For use areas without special fire technical requirements.
Also for use in LNG insulation elements (min. -163°C).

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

This Certificate is valid until **2021-05-18**.

Issued at **Høvik** on **2016-05-19**

DNV GL local station: **St. Petersburg**

Approval Engineer: **Helene Bjerke**

for **DNV GL**

Arnstein Gloppen
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.

Product description

WISA® STANDARD PLYWOOD, including **WISA-Birch, WISA-Spruce and WISA-LNG**:
Plywood made from birch or combination birch conifer bonded with weather resistant phenolic resin glue.

Application/Limitation

For use in areas without special fire technical requirements.
For use in some of the application areas listed there may be requirements to fire technical properties.
The material may be subject to approval w.r.t. fire technical properties and this will be evaluated in each individual case.

Plywood for use in LNG carriers insulation elements (boxes), for minimum temperature of cargo of -163°C. The product has been tested according to Gaztransport & Technigaz External Document 1002, rev. D.

Remarks:

- The shear strength of glue joint is tested according to EN 314: 72 h boiling water test.
- Strength values: As per the Handbook of Finnish Plywood and GTT's Specification GT 96.
- Bonding: According to EN 314-1 (1993) Plywood. Bonding Quality. Part 2, Requirements, Class 3 (Exerior).
- Quality Control contract with Technical Research Centre of Finland to be maintained.

Type Approval documentation

Tests carried out

Type testing carried out in accordance with **Type Approval documentation**, as per UPM-Kymmene Corporation Quality Manual GT No. 96, Version 2, 2006-09-25, including GTT External Document No. 149, rev. Q, August 2000.

Test results are documented for:

- Bending strength
- Stability of glueline
- Modulus of elasticity
- Dimension measurements

Marking of product

Package shall be marked with *manufacturer's name*; **UPM-Kymmene Chudovo LLC, Chudovo – Novgorod Region, Russian Federation**, and *type designation*; **WISA® STANDARD PLYWOOD**.

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 GL 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.

Assessment to be performed after two (2) years (Certificate Retention) and at renewal after five (5) years (Certificate Renewal).

The main elements of the Periodical Assessment are:

- Ensure that **Type Approval documentation** is available.



Job Id: **262.1-022730-1**
Certificate No: **TAK00000CC**

- Review design, materials, production process, and performance with respect to possible changes, in order to ensure compliance with **Type Approval documentation** and/or referenced material specifications.
- Ensure traceability between manufacturer's product marking and the DNV GL Type Approval Certificate.

END OF CERTIFICATE