

Nordic wood preservation classes and product requirements for preservative-treated wood

Part 2: Spruce (*Picea* spp)

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1 Background

The Nordic wood preserving industry has requested to extend the NWPC classification of the well-known and established classes for preservative-treated pine and other permeable wood species, M, A, AB and B to also comprise preservative-treated spruce (*Picea* spp). The Nordic Wood Preservation Council (NWPC) has therefore decided to prepare this Document that defines Nordic wood preservation classes for spruce within the framework of existing European standards. This Document supersedes NWPC Recommendations No 7/90 and No 8/91.

2 Scope

This Document defines two wood preservation classes, GRAN and GW and corresponding product requirements for preservative-treated spruce (*Picea* spp), see EN 350-2.

These wood preservation classes refer only to the protection against biological deterioration. Any other requirements on the treated wood, such as wood quality grading, machining before treatment and moisture content on delivery must be specified separately.

3 References

For undated references, the latest edition of the referenced document applies.

EN 335-1	Durability of wood and wood-based products. Definition of use classes Part 1. General
EN 350-2	Durability of wood and wood-based products – Natural durability of solid wood. Guide to natural durability and treatability of selected wood species of importance in Europe
EN 351	Durability of wood and wood-based products. Preservative-treated solid wood Part 1. Classification of preservative penetration and retention Part 2. Guidance on sampling for the analysis of preservative-treated wood
EN 599-1	Durability of wood and wood-based products – Efficacy of preventive wood preservatives as determined by biological tests. Specification according to use class
ISO 2859-1	Sampling procedures for inspection by attributes. Sampling schemes indexed by acceptable quality level (AQL) for lot-by-lot inspection.

NTR Document No 2	Conditions for approval of wood preservatives for industrial wood preservation in the Nordic countries Part 1: Pine and other permeable softwoods
NWPC Document No 3	Nordic requirements for quality control of preservative-treated wood Part 2: Spruce (<i>Picea</i> spp)

4 Wood preservation classes

Preservative-treated spruce according to this Document is classified into the following two wood preservation classes: GRAN and GW.

Wood preservation class GRAN is restricted to the following commodities only: exterior cladding, barge boards, weather-boards and battens not exposed to the weather (e.g. for tiles).

Wood preservation class GW is restricted to window components only.

Note Wood preservation class GRAN is not intended for decking boards.

The classification is based on EN 351-1 and is related to the use classes defined in EN 335-1.

Production of preservative-treated wood according to this Document requires, in addition to requirements specified in sections 5-7, that the production plant is approved and affiliated to quality control according to NWPC Document No 3, Part 2.

How all the NWPC wood preservation classes are related to EN 351-1 and EN 335-1 is shown in Annex.

5 Product requirements

5.1 Wood to be treated

The wood must not have any visible attack of wood destroying fungi or other micro-organisms which leads to softening of the wood or reduction of its strength and/or mass, and shall in principle be free from bark and inner bark.

Drying and conditioning of the wood before treatment shall be carried out in such a way that the penetration requirements can be fulfilled and that the properties of the treated wood are not adversely affected with respect to intended end-use.

All machining of class GRAN shall as far as possible be carried out before treatment.

For treatment according to class GW, water-stored timber shall not be used and all machining shall be carried out before treatment.

5.2 Wood preservatives

Wood preservatives shall be approved by the NWPC for wood preservation class AB and B respectively according to NWPC Document No 2.

Note 1 National restrictions, e.g. a maximum retention level set for a wood preservative by a national environmental authority, may restrict the use of NWPC approved wood preservatives fully or partially.

Note 2 A list of approved wood preservatives can be obtained from the NWPC Secretariat. It is also available on the NWPC website www.ntr-nwpc.com.

5.3 Wood preservation classes and preservative treatment requirements

The wood preservative penetration and retention requirements for each wood preservation class are shown in the scheme below.

Wood preservation class	Treatment requirements		
	Penetration class according to EN 351-1	Analytical zone	Retention of wood preservative
GRAN	NP 1 No requirement on penetration	Outer 3 mm	According to the NWPC requirement for class AB in the analytical zone
GW	NP 1 No requirement on penetration	Outer 3 mm	According to the NWPC requirement for class B in the analytical zone

The retention for a batch shall on average be at least as specified in the NWPC approval certificate for the wood preservative used.



5.4 Machining after preservative treatment

If cutting, drilling of holes and other minor machining cannot be avoided for wood preservation class GRAN before delivery from the treatment site, the machined surfaces must be treated with a suitable preservative. If other wood working, such as rip sawing and planing is carried out and if the wood is profiled after treatment, the classification will be lost.

If class GW treated wood is machined before delivery the classification will be lost.

6 Marking

Producers of preservative-treated wood and affiliated to a quality control according to this Document have the right and obligation to mark their products with the NWPC quality marks, see below.

Wood preservation class	NWPC quality mark	Colour codes
GRAN		Orange
GW		Brown

Design and proportions shall comply with the images above and the size shall be adapted to the product to be branded.

Note National requirements may exist, and marking requirements are presented in NWPC Document No 3, Part 2

7 Delivery

On delivery the treated wood according to this Document must comply with the following requirements:

- For wood treated with water-borne wood preservatives, the manufacturer's recommendations concerning after-treatment, e.g. fixation, must be applied before delivery
- Most of highly volatile, organic solvents should have evaporated

The preservative-treated wood shall also comply with any customer, delivery (e.g. use of stickers, moisture content) or national requirements concerning environment and occupational safety.

Annex (informative)

NWPC wood preservation classes in relation to EN 351-1 and EN 335-1

Penetration class according to EN 351-1		Use classes UC1-UC5 according to EN 335-1 and their relation to the wood preservation classes M, A, AB, B, GRAN and GW				
Class	Penetration requirement	UC 1	UC 2	UC 3	UC 4	UC 5
NP 1	None			GRAN GW		
NP 2	Min 3 mm lateral into sapwood					
NP 3	Min 6 mm lateral into sapwood			B**		
NP 4*	Min 25 mm					
NP 5	Full sapwood			AB**	A**	M**
NP 6	Full sapwood + 6 mm into heartwood					

* Applies to round wood of resistant species only, i.e. treatability classified 3-4 according to EN 350-2.

** See NWPC Document No 1, Part 1, applicable to preservative-treated pine and other permeable softwoods.

