

# **Conditions for approval of industrially protected wood in the Nordic Countries**

## **Part 3: Heartwood of Scots pine and other durable woods**

**NTR Document no. 2 Part 3:2017**

---

**Nordic Wood Preservation Council 2017**

### Part 3: Heartwood of scots pine and other durable woods

Document valid from 1<sup>st</sup> January 2017.

The original language of this Document is English.

## Contents

1	Introduction .....	3
2	Scope .....	3
3	References.....	3
4	Definitions.....	4
5	Symbols and abbreviations.....	5
6	Requirements and application .....	5
	6.1 General .....	5
	6.2 Applicant.....	5
	6.3 Trade name of the product .....	5
	6.4 Wood preservation classes .....	5
	6.5 Characterization of the preservative system.....	5
	6.6 Biological tests .....	6
	6.6.1 General .....	6
	6.6.2 Wood preservation classes HC and HW .....	7
	6.7 Methods for chemical analysis and for checking compliance of the treated wood .....	7
	6.8 Treatability properties and stability .....	8
	6.8.1 For class HC and HW.....	8
	6.9 Technical data sheets.....	8
7	Procedure .....	8
	7.1 Application (both new and renewal) .....	8
	7.2 Confidentiality.....	8
	7.3 Approval .....	9
	7.4 Certificate of approval.....	9
	7.5 List of approved preservatives .....	9
	7.6 Communication.....	9
8	Evaluation .....	9
9	Approval certificate .....	9
10	Marking .....	10
11	Control.....	10
12	Renewal .....	10
13	Changing of the preservative formulation .....	10
14	Withdrawal of the approval .....	10
15	Revision and withdrawal of this document .....	10

## 1 Introduction

NWPC Document No. 2 part 3 introduces conditions for approval of superficial treatments of heartwood for industrial use". The requirements are based on the European standards EN 351 and EN 599.

The official language of this Document is English.

## 2 Scope

This document comprises the Nordic Wood Preservation Council's (NWPC) conditions for approval of superficial treatments of wood for the production of quality certified treated wood according to NWPC Document No. 1:2017 - part 3. The conditions are based on EN 599 and applicable to industrial treatment of Scots pine heartwood and other durable heartwoods. The standard is also applicable for durable hardwoods.

The approval of wood preservatives according to this document is restricted (see EN 599) to:

- Wood protecting products (wood preservatives) supplied for superficial application in liquid form by e.g. brushing, dipping, flow coating or spray application of a preservative with or without subsequent application of a top coat.
- The preventive treatment of heartwood against biological deterioration as described in NWPC Documents no. 1 Part 3.

The approval schemes are operated by the NWPC and a certificate, cf. Annex 1, confirms the approval of a wood protecting system. The approval is valid in Denmark, Finland, Iceland, Norway and Sweden.

## 3 References

EN 599-1	Durability of wood and wood-based products – Efficacy of preventive wood preservatives as determined by biological tests – Part 1: Specification according to use class
EN 73	Wood preservatives – Accelerated aging tests of treated wood prior to biological testing – Evaporative ageing procedure
EN 84	Wood preservatives - Accelerated ageing of treated wood prior to biological testing - Leaching procedure
EN 113	Wood preservatives - Test method for determining the protective effectiveness against wood destroying basidiomycetes - Determination of the toxic values
EN 152	Wood preservatives - Determination of the protective effectiveness of a preservative treatment against blue stain in wood in service - Laboratory method
EN 330	Wood preservatives - Field test method for determining the relative protective effectiveness of a wood preservative for use under a coating and exposed out of ground contact: L-joint method
EN 335	Durability of wood and wood-based products - Definition of use classes - Part 1: General
EN 351-1	Durability of wood and wood based products – Preservative-treated solid wood Part 1: Classification of preservative penetration and retention.
EN 839	Wood preservatives - Determination of the protective effectiveness against wood destroying basidiomycetes - Application by surface treatment

NWPC Document No. 1	Nordic Wood Preservation Classes. Part 3. Heartwood of Scots pine and other durable softwoods
NWPC Document No. 3	Conditions for quality control of industrially protected wood in the Nordic countries. Part 3. Heartwood of Scots pine and other durable softwoods

## 4 Definitions

**active substance(s)** (*a.s.*): The individual chemical compound or compounds included in the wood preservative product to give it specific activity against the particular biological agents of deterioration.

**analytical zone** (*a.z.*): The part of the treated wood which is analysed for assessing the 'retention requirement' (*r.r.*).

NOTE: The analytical zone is taken from the lateral surfaces of the treated wood. The depth to which sampling is required will depend upon the species of wood being analysed and the treatment level concerned.

**biological reference value** (*b.r.v.*): Amount in grams per square metre or kilograms per cubic metre of the wood preservative product equal to or derived from the retention found to be effective in test in preventing attack by the particular biological agent being tested.

**critical value** (*c.v.*): Value equivalent to the highest b.r.v. (in grams per square metre or kilograms per cubic metre) obtained from all the biological tests carried out in accordance with this Part of EN 599 for any given use class.

**co-formulant**: Any ingredient (other than an active ingredient) in a formulated wood preservative product.

**penetrating treatment process**: Process which includes features or procedures intended to overcome the natural resistance of wood to penetration by a wood preservative product in its ready for use form.

NOTE: Such processes include for example currently practised technologies of diffusion treatments, double-vacuum and vacuum-pressure methods.

**performance**: Behaviour of the wood preservative product in terms of its effectiveness in test.

NOTE: The term 'performance' applies also to its behaviour in terms of its effectiveness in practice against the individual or collective effects of particular biological agents of deterioration.

**product**: Formulated wood preservative product in the form as supplied for sale by the manufacturer.

**retention requirement** (*r.r.*): Amount (loading) of the wood preservative product that is required in the analytical zone.

NOTE: r.r. is expressed in grams of product per square metre for superficial application processes and kilograms of product per cubic metre for penetrating treatment processes. It is derived from the critical value in accordance with EN 351-1.

**superficial application process**: Process which does not include particular features or procedures intended to overcome the natural resistance of wood to penetration by a wood preservative product in its ready for use form.

NOTE: Such processes include for example brush and spray techniques and short-term immersion (dipping) processes in which wood normally has only a few minutes contact time with the preservative.

**wood preservative:** Active substance(s) or preparations containing active substance(s) in the form in which they are placed on the market, and which are, on the basis of the properties of their active substance(s), intended to prevent wood-destroying and/or wood-disfiguring organisms (fungi and blue stain) from attacking wood and wood-based products.

## 5 Symbols and abbreviations

*CAS number:* Chemical Abstracts Service registry number.

*EINECS number:* European Inventory of Existing Chemical Substances number.

*ELINCS number:* European List of Notified Chemical Substances number.

## 6 Requirements and application

### 6.1 General

The approval is applicable to the wood preservative treatment only. The application for approval of a wood preservative for superficial application for the production of quality controlled treated wood must be completed on a special form and submitted to the NWPC Technical Expert Group's Secretariat, see Annex 2.

### 6.2 Applicant

The applicant shall be the producer of the wood preservative or shall have all rights needed to seek approval. Where the applicant is not the data holder for the dossier associated with the required documentation, a letter of access will be required for each document in the dossier.

### 6.3 Trade name of the product

The trade name of the product must be unambiguous. The NWPC can accept that a particular product is marketed with different trade names in the Nordic countries, provided all trade names are stated in the application and thus can be stated in the NWPC Certificate of approval and list of approved preservatives.

### 6.4 Wood preservation classes

The application for approval can refer to NTR Class HC and HW see NWPC Document no. 1 - part 3. The approval is only valid for Use Classes 3.1 (windows) and 3.2 (cladding) according to EN 335-1.

### 6.5 Characterization of the preservative system

The application method (dipping, flowcoat, spraying, brushing, spray tunnel etc.) and state of delivery, e.g. paste, granulate, liquid etc. and the complete formulation of the preservative product shall be given. The active substance(s) shall be stated by empirical formula, CAS and EINECS number, if applicable and percentage m/m. If co-formulants are used, these shall be stated by type, e.g. binders of alkyd type and percentage m/m. Furthermore, the wood specie, durability class according to EN 350 and if an additional topcoat is required must be stated.

The various components shall be grouped, where applicable, into

- active ingredients with CAS and EINECS No. or other identification,
- binders,
- solvents,
- co-solvents,
- pH stabilizers,
- anti-foaming agents,
- etc.

Active substance(s) and other components (without mentioning individual components) will be stated in the certificate of approval. The product's contents of the various components shall be stated with the following tolerances:

Nominal content of modifying agent				Tolerance, percentage of nominal content
0 %	< active ingredient	≤	1,0 % m/m	± 20,0 %
1,0 %	< active ingredient	≤	2,5 % m/m	± 15,0 %
2,5 %	< active ingredient	≤	10,0 % m/m	± 10,0 %
10,0 %	< active ingredient	≤	25,0 % m/m	± 6,0 %
25,0 %	< active ingredient	≤	50,0 % m/m	± 5,0 %
50,0 %	< active ingredient	≤	100,0 % m/m	± 2,5 %

For organic solvents, the following physical properties shall be stated:

- density (g/cm<sup>3</sup> at 20 °C),
- kinematic viscosity (mm<sup>2</sup>/s at 20 °C),
- flashpoint (°C, minimum),
- water content (% v/v, maximum),
- distillation range (°C); when 90 % has been distilled off.

For water soluble products the following physical properties shall be stated:

- density (g/cm<sup>3</sup> at 20 °C),
- kinematic viscosity (mm<sup>2</sup>/s at 20 °C) or dynamic viscosity (Pa.s or cP)
- water content (% v/v, maximum),
- Co-solvent content (% v/v, maximum).

## 6.6 Biological tests

### 6.6.1 General

Mandatory tests for NTR class HC and HW are stated in Annex 3. The following tests are required: EN113 or EN 839 after ageing by EN 73 and EN 84 separately or/and field test according to EN 330. If the product claims to have efficacy against blue stain EN 152 is required.

Back to back approval (analogical approval/parallel approval) will only be granted for identical formulations and requires a letter of access from the original approval holder at the time of renewal.

Reports from biological testing must contain information and confirmation of the tested product's chemical composition, e.g. by a report from chemical analysis of the active substance(s) of the product. Independent institutes accredited for the method shall carry out the biological durability tests. Independent institutes shall carry out chemical analyses.

### 6.6.2 Wood preservation classes HC and HW

Commodities, such as wooden components for windows (HW) or cladding (HC), intended for use in conjunction with or without topcoat or with some other form of protective covering applied prior to exposure in use which protects the preservative from leaching. The preservative contains a fungicide (a.s.), usually applied by dipping, flow-coat or similar. The preservative to be used for NWPC wood preservation class HC and HW shall be tested according to EN 599-1, paragraph 6.3, Use class 3 (for superficial processes).

The minimum biological testing requirements are:

- Either wood destroying basidiomycete fungi in accordance with EN 839 or EN 113 after EN 73 and EN 84 separately, but excluding *Coriolus versicolor*. As specified in EN 599-1.
- Or/and field test in accordance with EN 330 (L-joint) of the formulation or the active substance(s). The test shall be carried out until the untreated control samples of Scots pine sapwood have reached the median rating 3 (severe decay).
- A combined wood preservative and topcoat occurs if b.r.v. has been determined by EN 330.
- Changing of formulation may require new tests, see EN 599 Annex A “Guidance on re-testing after making variations in product formulation”. The test shall be continued and reported when applying for renewal.
- If the product has efficacy against blue stain EN 152:  
  
type A: fungicidal preparations with or without pigment, used in conjunction with unspecified varnishes or paint coatings;  
  
or  
  
type C: fungicidal preparations with or without pigment, used without any subsequent paint, varnish or other coating.

### 6.7 Methods for chemical analysis and for checking compliance of the treated wood

The applicant shall advise methods for:

- Quantitative analysis (% m/m) of all active ingredients in the solution of the preservative and in the treated wood.
- Determination of the concentration of preservative in the treating solution if the treating solution is mixed at the treating plant.

There must be at least one official (published) method for each of the three requirements.

NOTE: If two preservatives from the same producer has identical a.s. and the retentions give different amount of a.s. in the treated wood, the preservatives must be separated by some analytical method on one other non-identical component in the formulations.

## 6.8 **Treatability properties and stability**

The application shall contain documented results of the treatability properties and stability in use and storage of the preservative.

### 6.8.1 **For class HC and HW**

The stability of the preservative during treatment and during storage must be documented. The applicant shall demonstrate that the preservative solution contains the same amount and relative proportions of active ingredients after storage for three months as well as after 10 successive treatments with Scots pine wood samples as in the fresh solution. Additional stability testing according to CIPAC MT 46 “*Accelerated Storage Procedure*” must be performed.

If certain additives are recommended, e.g. for certain periods of the year, such as:

- Agents to prevent mould on the treated wood
- pH stabilisers
- Colour stabilisers
- Water-repellents

the stability must be demonstrated with relevant amounts of these additives.

## 6.9 **Technical data sheets**

The application must contain draft technical data sheets for:

- The wood preservative
- Additives, if applicable
- The treated wood

See Annex 4 for guidance to prepare the technical data sheets.

# 7 **Procedure**

## 7.1 **Application (both new and renewal)**

The application form, see Annex 2, properly filled out and relevant annexes, such as test reports, methods of analysis and draft technical data sheets must be submitted to

**The NWPC Technical Expert Group’s (NWPC TEG) Secretariat**  
For address see [www.ntr-nwpc.com](http://www.ntr-nwpc.com)

at least one month before the NWPC TEG meeting.

The NWPC TEG secretariat will acknowledge the receipt of the application and arrange for an invoice of the application’s general or renewal fee from the NWPC secretariat. The class fee per year will be invoiced after the approval.

Information about current fees can be obtained from the NWPC TEG Secretariat or the NWPC secretariat.

The NWPC TEG will not process the application before it is complete according to this document and the general or renewal fee is paid.

## 7.2 **Confidentiality**

The NWPC TEG and the NWPC TEG secretariat will process all applications with confidentiality.



### 7.3 Approval

Normally the NWPC TEG has two annual meetings. Approval or refusal of the preservative is reported to the applicant within two months after the meeting.

NWPC TEG decisions are final. Only reasons for refusal are explained.

### 7.4 Certificate of approval

The approval is reported in the form of a certificate, which is signed by the Chairman of the NWPC TEG, see Annex 1. The certificate of approval only refers to protection against the relevant biological agents and does not consider physical, chemical or environmental properties of the preservative. The approval is valid in Denmark, Finland, Iceland, Norway and Sweden.

### 7.5 List of approved preservatives

The NWPC will issue, normally twice per year, an updated list of approved preservative. The list will include current retention figures per wood preservation class for each preservative. The list of approved preservatives can be seen at [www.ntr-nwpc.com](http://www.ntr-nwpc.com).

### 7.6 Communication

All communication with the NWPC TEG has to be through the NWPC TEG Secretariat. The address for NWPC TEG Secretariat, see [www.ntr-nwpc.com](http://www.ntr-nwpc.com).

## 8 Evaluation

The NWPC TEG will evaluate the application and in this process pay particular attention to “biological reference values” (*b.r.v.*), the “critical value” (*c.v.*) as well as all other relevant information about the performance of the preservative in addition to the NWPC TEG-members experience, before the retention is approved. The EPA (Approval and Assessment report) must be submitted along with the application for the approval to NTR-T.

The retention requirements are expressed in  $\text{g/m}^2$  with the following precision:

<b>Retention requirements in kg approved formulation per <math>\text{m}^3</math> sapwood.</b>	<b>Precision</b>
$0 < \text{approved retention} \leq 100 \text{ g/m}^2$	$5 \text{ g/m}^2$
$\text{approved retention} > 100 \text{ g/m}^2$	$10 \text{ g/m}^2$

## 9 Approval certificate

A NWPC-approval is reported in the form of a certificate, which normally is valid for 5 years. Only one certificate is issued for each preservative. This is submitted to the applicant. The NWPC TEG Secretariat and members of the NWPC TEG hold confidential copies.

The national Nordic quality control bodies, see NWPC Document No. 1, may request copies of the certificates from the certificate holders.

## 10 **Marking**

Wood preservatives approved by the NWPC TEG, and marketed to wood preserving plants affiliated to a national Nordic quality control bodies shall be marked, see NWPC Document No. 1:

- in accordance with EN 599-2, paragraph 6, "Marking", and
- with NWPC approved retention according to the Nordic wood preservation class.

NOTE: The NWPC marking can, for example, be expressed as  
*"This preservative is approved by the Nordic Wood Preservation Council for use in the Nordic wood preservation class HC or HW with retention of XX g/m<sup>2</sup> heartwood"*.

## 11 **Control**

The compliance of an approved preservative with the nominal formulation will be checked in connection with third party inspections within the framework of the Nordic quality control and certification scheme, see NWPC Document No. 3.

## 12 **Renewal**

An approval is normally valid for five years. It can be renewed following a written application, payment of a renewal fee and consideration by the NWPC TEG. The NWPC TEG Secretariat will remind certificate holders at least two months before the expiry date.

Application for renewal shall contain updated field test results.

## 13 **Changing of the preservative formulation**

The approval certificate holder is responsible to inform NWPC TEG if the formulation of the preservative is changed. NWPC TEG will then consider according to EN 599-1, Annex A, if the changes will require a re-testing of the preservative.


## 14 **Withdrawal of the approval**

The NWPC TEG can withdraw an approval immediately, after consulting the producer, if the preservative's biological efficacy fails in practical use.

## 15 **Revision and withdrawal of this document**

This document can be revised by the NWPC. It can be withdrawn with one year's notice.

## Annex 1 (normative) NWPC Certificate

NORDISKA TRASKYDDSRÅDET - NTR NORDIC WOOD PRESERVATION COUNCIL - NWPC																				
<b>Certificate No. XXX for approval of wood preservatives</b>																				
<b>Preservative</b>	Superficial <del>nn</del>	<b>Date</b>	2016-01-01																	
<b>Requested by</b>	NN	<b>Ref. No.</b>	X/X																	
<b>Conditions of approval</b>	<b>Chemical name</b>	<b>% w/w</b>	<b>CAS No.</b>	<b>Ad</b>	<b>% w/W</b>															
		100																		
<p>The preservative is approved for use in the following Nordic Wood Preservation Classes according to NWPC Document No. 1 which is the Nordic interpretation document of EN 351 and EN 599.</p> <table border="1"> <thead> <tr> <th>Nordic Wood Preservation Class</th> <th>M</th> <th>A</th> <th>AB</th> <th>HW</th> </tr> </thead> <tbody> <tr> <td><i>European Hazard/Use Class</i></td> <td>5</td> <td>4</td> <td>3</td> <td>3 (coated)</td> </tr> <tr> <td><b>Retention, g/m<sup>2</sup> sapwood</b></td> <td>-</td> <td>-</td> <td>-</td> <td><b>100</b></td> </tr> </tbody> </table> <p>The retention figures refer to the total formulation (A) specified above.</p> <p>This approval is valid for heartwood of Scots pine (<i>Pinus spp.</i>) and other softwood species which are classified as durable according to EN 350-1 and which have been approved by the NWPC.</p>						Nordic Wood Preservation Class	M	A	AB	HW	<i>European Hazard/Use Class</i>	5	4	3	3 (coated)	<b>Retention, g/m<sup>2</sup> sapwood</b>	-	-	-	<b>100</b>
Nordic Wood Preservation Class	M	A	AB	HW																
<i>European Hazard/Use Class</i>	5	4	3	3 (coated)																
<b>Retention, g/m<sup>2</sup> sapwood</b>	-	-	-	<b>100</b>																
<b>Remarks and reservations</b>	<p>This approval only refers to protection against biological agencies and does not consider physical or chemical properties.</p> <p>This approval only refers to the preservative product and does not include preservative-treated wood. Wood treated according to the classes HW is exclusively supplied by treatment plants affiliated to the Nordic Quality Control Scheme for Preservative-treated Wood according to NWPC Document No. 3.</p> <p>This certificate must only be reproduced in its complete form.</p>																			
<b>Validity</b>	<p>This approval is valid until <b>31 December XXXX</b>. However, it can be withdrawn earlier if it is considered necessary following new test results etc. For validity, see the latest issue of the NWPC list of approved preservatives.</p>																			
<b>Signature</b>	<p>Chairman of NWPC Technical Expert Group</p>																			

## Annex 2 (normative) Application for Approval of Wood Preservatives

New preservative       Renewal of preservative with certificate no. \_\_\_\_\_

### 1 Applicant

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_      Telefax: \_\_\_\_\_

E-mail: \_\_\_\_\_      Internet: \_\_\_\_\_

### 2 Name of product:

\_\_\_\_\_

### 3 Wood preservation class HC or HW Application information

Approval is applied for the following Nordic wood preservation class HC or HW according to NWPC Document No. 1 Expected retentions are expressed as g/m<sup>2</sup> heartwood.

Retention min. and max.: \_\_\_\_\_

Application method: \_\_\_\_\_

Additional topcoat required       No additional topcoat required

### 4 Data of the preservative

State when delivered (paste, powder, granulate liquid etc)  
and packaging:      Appendix No. \_\_\_\_\_

Chemical composition <sup>1)</sup> incl. possible additives:      Appendix No. \_\_\_\_\_

Physical data <sup>2)</sup>:      Appendix No. \_\_\_\_\_

Documentation re chemical analysis of active ingredient(s):      Appendix No. \_\_\_\_\_

<sup>1)</sup> Complete composition must be presented. For organic solvent preservatives, in addition to the percentage of active ingredients the type and percentage of binding agents and water repellents (e.g. "binder of alkyd type", 2 %) , colour additives, driers and other additives (e.g. colour of aniline type, 0,5 %) and solvent must also be stated.

<sup>2)</sup> For wood preservatives, it is important to know certain physical properties. For the preservatives, the following must be stated:  
For organic solvents the following physical properties shall be stated:

- density (20 °C, g/m<sup>3</sup>)
- flash point (°C, minimum)
- distillation range (°C), alternatively temperature when 90 % of the solvent (preservative) has been distilled off.
- kinematic viscosity, (20 °C, mm<sup>2</sup>/s)
- water content (% v/v maximum)

For water soluble products the following physical properties shall be stated:

- density (20 °C, g/m<sup>3</sup>)
- water content (% v/v maximum)
- kinematic viscosity, (20 °C, mm<sup>2</sup>/s) or dynamic viscosity (Pa.s or cP)
- co-solvent content (% v/v maximum)

### 5 Biological test results

See also Annex 3

Laboratory tests:

- Basidiomycetes:  
EN 73 + EN 113 - *Coriolus versicolor*: Appendix No. \_\_\_\_\_  
EN 84 + EN 113 - *Coriolus versicolor*: Appendix No. \_\_\_\_\_
- Basidiomycetes:  
EN 73 + EN 839 - *Coriolus versicolor*: Appendix No. \_\_\_\_\_  
EN 84 + EN 839 - *Coriolus versicolor*: Appendix No. \_\_\_\_\_
- Blue stain: EN 152: Appendix No. \_\_\_\_\_

Field-tests above ground:

- EN 330 L-joint: Appendix No. \_\_\_\_\_

Chemical analysis of tested product for  
each test above: Appendix No. \_\_\_\_\_

## 6 Stability

Tested according to paragraph 6.8: Appendix No. \_\_\_\_\_

## 7 Methods of analysis and quality control

Method(s) of analysis for determination of all active  
ingredient(s) of the preservative and at least the  
main active ingredient in the treated wood: Appendix No. \_\_\_\_\_

Method(s) of analysis for determination of the re-  
tention of the preservative (active ingredient(s)) in  
the treated wood: Appendix No. \_\_\_\_\_

Method(s) for determination of the concentration  
of the preservative solution at the treating plant in  
those instances where the solution is prepared by  
diluting a concentrate or prepared from a powder  
etc: Appendix No. \_\_\_\_\_

## 8 Other information

Records of the durability of the treated wood under service conditions: Appendix No. \_\_\_\_\_

Draft technical data sheet for the preservative: Appendix No. \_\_\_\_\_

Draft technical data sheet for the treated wood: Appendix No. \_\_\_\_\_

The undersigned understands that:

- the application will be treated confidentially
- The application will be evaluated as soon as the application fee has been paid to the NWPC
- only the efficacy of the preservative against biological degradation is considered by the NWPC
- any approval that may result will be communicated in the form of a certificate with a validity of five years but the approval can be withdrawn immediately if considered necessary on account of new evidence
- copy of the approval will be distributed to the national bodies responsible for the quality control and certification of preservative-treated wood
- NWPC issues a list of approved preservatives.

\_\_\_\_\_  
*Place and date Name in capital letters*

\_\_\_\_\_  
*Signature*

### Annex 3 (informative):

#### Minimum requirements for fungal tests

<b>Test Methods:</b> Test on Scots pine ( <i>Pinus sylvestris L</i> ) sapwood only
EN 73 + EN 113 without <i>Coriolus versicolor</i> OR EN 73 + EN 839 without <i>Coriolus versicolor</i>
EN 84 + EN 113 without <i>Coriolus versicolor</i> OR EN 84 + EN 839 without <i>Coriolus versicolor</i>
OR EN 330 (the untreated reference samples of Scots pine sapwood shall have reached the median rating 3 of severe decay. When applying for renewal data from field test must be submitted for the full test period until the approved retention have reached character 4)

#### Optional requirements for fungal tests

<b>Test Methods:</b> Test on Scots pine ( <i>Pinus sylvestris L</i> ) sapwood only
EN 152

## **Annex 4 (informative): Guidelines for Technical Data Sheets**

### **1 Introduction**

A technical data sheet for the preservative and the treated wood must be enclosed with the application as complete as possible.

During the impregnation one or more properties of the wood are changed. Primarily the resistance to biological degradation is increased. However, the treatment can cause other important changes. The aim of the data sheet is to supply as much information as possible about the products to ensure that the preservative and treated wood will be correctly used.

This appendix is intended to help the applicant to prepare good technical data sheets. The list below includes properties and facts of importance - in certain instances of decisive importance - for an appropriate use of the preservative and the treated wood. Evidently, information on parts of Section 3 below is required only when relevant to the applications envisaged. Information presented in the data sheets can preferably be used in instructions etc.

Properties not investigated should be marked as "not investigated" or "investigation in hand". If possible, references should be given for all information.

*The approval will not include the contents of the technical data sheet. If obviously incorrect or misleading information is given, the NWPC TEG reserves the right to comment on it. The approval procedure may be delayed until corrections have been done and accepted by the NWPC TEG.*

### **2 Technical data sheet for the preservative**

#### **General description**

- Condition on delivery (liquid, powder, paste etc)
- Colour
- Odour
- Type of container.

#### **Physical and chemical data**

- Complete chemical composition and information on suitable methods for analysis of active ingredients.
- Physical data important for the user to know; for water-borne preservatives, this can be, for instance, solubility at different temperatures, pH and corrosivity for organic solvent preservatives: density, viscosity, flash point, contents of aromatic hydrocarbons and distillation range ought to be mentioned.

#### **Instructions for the use of the preservative**

- Information about which wood preservation classes the preservative is approved for and retention requirements (these data will be obtained from the NWPC when the preservative is approved).
- Recommended impregnation methods.
- Preparation of solution; recommended concentration with regard to the impregnation method and preservation class
- Additives; recommended concentration.

#### **Environmental and occupational safety**

- Toxicity (LD<sub>50</sub>-value, toxic limit etc.)
- Safety regulations
- Disposal of spillage, sludge
- Registration with products control authorities.



### **3 Technical data sheet for the treated wood**

#### **General**

- Colour, colour fastness
- Other information on appearance, e.g. if the wood may become sticky after the impregnation
- Odour.

#### **Conditioning, fixation of the preservative, solvent evaporation**

- Conditioning and fixation properties regarding temperature, atmospheric humidity etc.
- Information about the suitability of kiln drying and recommended procedure (for wood treated with water-borne preservatives).
- Information about the suitability of forced evaporation of solvent and recommended procedure (for wood treated with organic solvent type preservatives).

#### **Influence of water**

- Water repellent properties
- Dimensional stability, split formation, fibre swelling
- Equilibrium moisture content
- Leachability of active ingredients.

#### **Strength properties**

- Impact, bending, compression, cleavage and shearing strength
- Nail and screw-holding properties.

#### **Electrical properties**

- Conductivity.

#### **Fire-resistant properties**

- Inflammability
- Glowing properties.

#### **Machining properties**

- Notify if treated wood has any blunting effect on tools such as saws and planes.

#### **Compatibility with other materials**

- Paints and other products for surface treatment
- Adhesives
- Metals (corrosion)
- Plastics and rubbers
- Stone, bricks, concrete
- Bituminous materials
- Putty and other sealing compounds.

#### **Treatment after impregnation, maintenance**

- Need for surface treatment after impregnation
- Treatment after wood-working
- Recommended ways of maintenance, e.g. for external cladding, garden furniture etc.

Examples of suitable paints, stains etc. should to be mentioned.

#### **Environmental and occupational safety**

- Toxicity to humans and animals
- Phytotoxicity
- Disposal of waste (waste wood, discarded wood).

**Restrictions concerning handling and use**

- Influence on food, potable water and fodder
- Indoor use.

**Quality control**

- Methods for checking retention of the preservatives in the wood.

**Other**