

Conditions for approval of wood preservatives for industrial wood preservation in the Nordic countries

Part 1: Scots pine and other permeable softwoods

NWPC Document No. 2/2010



Nordic Wood Preservation Council

2010

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wood preservation in the Nordic countries**

Part 1: Scots pine and other permeable softwoods

Adopted by the Nordic Wood Preservation Council on 19 November 1999.
Revised November 2002, April 2006 and April 2010.

Approved by NWPC board 29 April 2010.

The time of implementation 1 July 2010.

The requirement for a third test field according to EN 252 in chapter 6.6.3 will be implemented 1 July 2015. For all preservatives approved in class A between 1 July 2010 and 1 July 2015 the producer has to put out the third test in ground contact as soon as possible after the approval.

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1 Introduction

NWPC Document No. 2 supersedes NWPC Document 1.2.1./89 "Conditions for approval of wood preservatives for industrial use", which has been withdrawn owing to the withdrawal of the Nordic Standard INSTA 140:1989 and the implementation of EN 351 and EN 599 in Denmark, Finland, Iceland, Norway and Sweden.

The official language of this Document is English.

2 Scope

This document comprises the Nordic Wood Preservation Council's (NWPC) conditions for approval of wood preservatives for the production of quality certified treated wood according to NWPC Document No. 1:2010. The conditions are based on EN 599 and applicable to industrial treatment of Scots pine and other permeable softwoods.

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

- Wood preservative products supplied for application in liquid form.
- The preventive treatment of softwoods against biological deterioration as described in NWPC Documents no. 1 Part 1 and Part 2.

The approval scheme is operated by the NWPC and a certificate, see Annex 1, confirms the approval of a wood preservative. 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 252	Field test method for determining the relative protective effectiveness of a wood preservative in ground contact
EN 275	Wood preservatives - Determination of the protective effectiveness against marine borers
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.
ENV 807	Wood preservatives – Determination of effectiveness against soft rotting micro-fungi and other soil inhabiting micro-organisms
NWPC Document No. 1	Nordic Wood Preservation Classes. Part 1. Scots pine and other permeable softwoods
NWPC Document No. 1	Nordic Wood Preservation Classes. Part 2. Norwegian spruce and other resistant softwoods
NWPC Document No. 3	Conditions for quality control and marking of preservative-treated wood in the Nordic countries. Part 1. Scots pine and other permeable softwoods
NWPC Document No. 3	Conditions for quality control and marking of preservative-treated wood in the Nordic countries. Part 2. Norwegian spruce and other resistant softwoods
CEN/TS 12037	Field test method for determining the relative protective effectiveness of a wood preservative exposed out of ground contact - Horizontal lap-joint method

4 Definitions

active ingredient(s) (*a.i.*): 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.*): That 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.

manufacturer's proposed recommended loading (*m.r.l.*): Amount of wood preservative in the test specimen corresponding to the mean loading which the manufacturer recommends as necessary and achievable in practice in the analytical zone(s).

maximum application limit (*m.a.l.*): Maximum amount in grams per square metre or kilograms per cubic metre of the wood preservative product permitted for application to the wood specimens in the particular biological test.

mid-toxic value (*m.t.v.*): Arithmetic mean of the upper and lower toxic values as defined in the relevant European standard biological test.

nominal effective retention (*n.e.r.*): Retention of test product calculated to give the effectiveness specified in ENV 807 test I and test II equivalent to the relevant target retention of the reference preservative.

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.

target retention (*t.r.*): Retention of reference preservative deemed to provide an adequate level of protection against attack by soft rot organisms in ENV 807.

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

5 Symbols and abbreviations

u.t.v.: The upper toxic value as defined in the relevant European standard biological test.

Vⁿ: Nominal mean rating of replicates for non-destructive assessment in EN 330.

V_e : Nominal mean rating for external surfaces and those visible within the joint of replicates for destructive assessment in EN 330.

V_i : Nominal mean rating for surfaces created by sawing of replicates for destructive assessment in EN 330.

$R2^{TP}$: Number of replicates treated with the wood preservative product with a rating of 2 or above in EN 330.

$R2^R$: Number of replicates treated with the reference preservative with a rating of 2 or above in EN 330.

spp : Species.

nrP : Nominal retention of the wood preservative product.

nrR : Nominal retention of the reference preservative.

$unrP$: Upper nominal retention of the wood preservative product.

$lnrP$: Lower nominal retention of the wood preservative product.

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 wood preservative products only. It is not applicable to single active ingredients. The application for approval of a wood preservative for the production of quality controlled preservative-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 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 one or more wood preservation classes, see NWPC Document no. 1.

6.5 Characterization of the preservative

The state of delivery, e.g. paste, granulate, liquid etc and the complete formulation of the preservative shall be given. The active ingredients shall be stated by empirical formula, CAS and EINECS number if applicable and percentage m/m. If additives are used, these shall be stated by type, e.g. binders of alkyd type and percentage m/m.

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 ingredients and other components (without mentioning individual substances) 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 active ingredient	Tolerance, percentage of nominal content
active ingredient \leq 2,5 % m/m	\pm 15,0 %
2,5 % < active ingredient \leq 10,0 % m/m	\pm 10,0 %
10,0 % < active ingredient \leq 25,0 % m/m	\pm 6,0 %
25,0 % < active ingredient \leq 50,0 % m/m	\pm 5,0 %
50,0 % < active ingredient \leq 100,0 % m/m	\pm 2,5 %

For organic solvents the following physical properties shall be stated:

- density (g/cm³ at 20 °C),
- kinematic viscosity (mm²/s at 20 °C),
- flashpoint (°C, minimum),
- water content (% v/v, maximum),
- distillation range (°C); when 90 % has been distilled off.

6.6 Biological tests

6.6.1 General

Mandatory tests for each wood preservation class are stated in Annex 3. All classes require testing according to EN 113 after EN 73 and EN 84 separately. In addition the preservative shall be tested in field tests depending on the Nordic preservation class M, A, AB or B (use class 5, 4 or 3 according to EN 335-1).

Back to back approval (analogical approval/parallel approval) will only be granted for identical formulations and require a letter of access from the original approval holder also 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 ingredients of the product. Independent institutes accredited for the method shall carry out tests. Independent institutes shall carry out chemical analyses.

6.6.2 Wood preservation classes B and AB

Wood preservatives to be used for NWPC wood preservation classes B and AB shall be tested according to EN 599-1, paragraph 6.3, Use class 3 (for penetrating processes).

The minimum biological testing requirements are:

(a) Wood preservation class B

Commodities, such as external joinery, intended for use in conjunction with paint or other coating or with some other form of protective covering applied prior to exposure in use which protects the preservative from leaching:

- Wood destroying basidiomycete fungi in accordance with EN 113 after EN 73 and after EN 84 separately, but excluding *Coriolus versicolor*.
- Field test in accordance with EN 330 (L-joint) of the formulation or the active ingredients. The test shall be carried out until the untreated control samples of Scots pine sapwood have reached the median rating 3 (severe decay). Changing of formulation may require new tests, see EN 599 appendix A "Guidance on re-testing...". The test shall be continued and reported when applying for renewal.

(b) Wood preservation class AB

Commodities above ground other than in (a).

- Wood destroying basidiomycete fungi in accordance with EN 113 after EN 73 and after EN 84 separately, but excluding *Coriolus versicolor*.
- A field test according to L-joint (EN 330) (optionally full sapwood penetration) for surface coated treatments, Lap-joint (CEN/TS 12037:2003) or field test above ground described in CEN/TC 38. The test shall be carried out until the untreated control samples of Scots pine sapwood have reached the median rating 3 (severe decay). The test shall be continued and reported when applying for renewal.
- If the preservative is tested and approved according to class A, a field test above ground is not required.

NOTE: If surface coating before exposure is recommended by the producer, the test samples will be surface coated with the recommended product before field testing.

6.6.3 Wood preservation class A

Wood preservatives to be used for NWPC wood preservation class A shall be tested according to EN 599-1, paragraph 6.4, Use class 4.

The minimum biological testing requirements are:

- Wood destroying basidiomycete fungi in accordance with EN 113 after EN 73 and after EN 84 separately and including *Coriolus versicolor*.
- Soft rot fungi in accordance with ENV 807, optional.
- Field test in accordance with EN 252 after a minimum period of five years at three test sites - at least two of them in the Nordic area.

6.6.4 Wood preservation class M

Wood preservatives to be used for NWPC wood preservation class M shall be tested according to EN 599-1, paragraph 6.5, Use class 5.

The minimum biological testing requirements are:

- Wood destroying basidiomycete fungi in accordance with EN 113 after EN 73 and after EN 84 separately and including *Coriolus versicolor*.
- Soft rot fungi in accordance with ENV 807 (optional if EN 252).
- Marine organisms in accordance with EN 275 after a minimum period of five years at one test site in the Nordic area.

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.
- Determination of the penetration of preservative in the treated wood, visualised by colour pictures.

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 active ingredients (a.i.) and the retentions give different amount of a.i 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.

The ability of uptake and penetration into Scots pine sapwood (*Pinus sylvestris*, Nordic origin) for the wood preservation class in question shall for new preservatives be demonstrated according to the following procedure at an independent institute:

6.8.1 Classes AB, A and M

20 cladding boards, (thickness 19-25 mm and minimum width 95 mm) and 20 planks (planed, minimum thickness 45 mm and minimum width 95 mm) of Scots pine shall be treated with the preservative in a pilot or commercial plant according to a typical process to be used in practice. Minimum 50 % of the cross sections of the test samples must consist of sapwood. Test samples less than 1 m length must be end-sealed. After treatment the samples are cut in the middle and the following requirements apply:

- Maximum 5 samples of each type may have untreated sapwood zones.
- All other samples must have full sapwood penetration of all active ingredients.
- If the active ingredients are not coloured or can be shown by reagents, the penetration must be documented by chemical analysis.
- The solution used shall have a concentration equal to the class with the lowest applied retention.

6.8.2 Class B

20 profiled components of Scots pine, minimum 750 mm long and with a sapwood depth of minimum 6 mm on one side shall be treated with the preservative in a pilot or commercial plant according to a typical process to be used in practice. After treatment the samples are cut in the middle and the following requirements apply:

- Maximum 5 samples may have untreated sapwood in the 6 mm zone.
- All other samples must have full penetration of all active ingredients in the 6 mm sapwood zone.
- The solution used shall have a concentration equal to the applied retention.

6.8.3 For all classes

The stability of the preservative during treatment and in the storage tank shall 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.

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 treatability properties and 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 shall be submitted (4 copies) to

The NWPC Technical Expert Group's (NWPC TEG) Secretariat

For address see 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.

Normally 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 decisions are final. Only the 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 agencies 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 preservatives. 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.

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.

8 Evaluation

The NWPC TEG will evaluate the application and in this process particular pay attention to “biological reference values” (*brv*), the “critical value” (*cv*) 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 determined. This will normally lead to multiplying the critical value with an adjustment factor as described in EN 351:2007, chapter 5.3:

*The retention requirement for a wood preservative is derived from its appropriate critical value for each use class as derived from EN 599-1. That retention requirement is calculated by multiplying the appropriate critical value by an **adjustment factor**. This adjustment factor will normally be stated in the relevant product standard or national interpretative document*, or be applied by national standards bodies or those** nominated by them. The adjustment factor is applied to take account of regional variations in building practices and climate as well as the variations in exposure conditions and service life requirements for different treated components within a use class.*

* NWPC document no. 2

** NWPC TEG

The retention requirements are expressed with the following precision:

Retention requirements in kg approved formulation per m ³ sapwood.	Precision
0 < approved retention ≤ 5,0 kg/m ³	0,1 kg/m ³
5 < approved retention ≤ 10,0 kg/m ³	0,5 kg/m ³
10 < approved retention ≤ 50,0 kg/m ³	1,0 kg/m ³
approved retention > 50,0 kg/m ³	5,0 kg/m ³

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 X with retention of XX kg/m³ sapwood".

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 owner of the approval certificate 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 TRÄSKYDDSRÅDET - NTR
NORDIC WOOD PRESERVATION COUNCIL - NWPC**



Certificate No. 999 for approval of wood preservatives

Preservative	Presswood S24	Date	200X-XX-XX
		Ref: No.	NTR- YY
Requested by	Wood Pres Ltd 0000 Town Country		
Description of preservative	The preservative has the following formulation:		
	A. Total	B. Active ingredients	
	Chemical	CAS no.	EINECS no
	CuXXX	yyyyyy	zzzzz
	Triazole	xxxxxxx	www
			Cu X.Y % m/m
			Tri V.W % m/m

Conditions of approval

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.

Nordic Wood Preservation Class	M	A	AB	B
<i>European Hazard/Use Class</i>	5	4	3	3 (coated)

Retention, kg/m³ sapwood Z.Y

The retention figures refer to the total formulation (A) specified above.

This approval is valid for all pine species (*Pinus spp*) and other softwood species which are classified as permeable according to EN 350-2 and which have been approved by the NWPC.

Remarks and reservations

This approval only refers to protection against biological agencies and does not consider physical or chemical properties.

This approval only refers to the preservatives product and does not include preservatives-treated wood. Wood treated according to the classes M, A, AB and B is exclusively supplied by treatment plants affiliated to the Nordic Quality Control Scheme for Preservative-treated Wood according to NWPC Document No. 3.

This certificate must only be reproduced in its complete form.

Validity

This approval is valid until **31 December 20XY**. 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.

Signature

Name
Chairman of NWPC Technical Expert Group

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

Approval is applied for the following Nordic wood preservation class(es) according to NWPC Document No. 1 Expected retentions are expressed as kg/m³ sapwood.

Wood species		Classes applied for; please tick in appropriate box(es)			
Trade name	Botanical name	M	A	AB	B
European redwood	<i>Pinus sylvestris</i>				

4 Data of the preservative

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

Chemical composition ¹⁾ incl. possible additives: Appendix No. _____

Physical data ²⁾: Appendix No. _____

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

¹⁾ 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.

²⁾ For organic solvent wood preservatives in particular, it is important to know certain physical properties. For the solvent, or alternatively for the preservatives, the following must be stated:

- density (20 °C, g/m³) - kinematic viscosity, (20 °C, mm²/s)
- flash point (°C, minimum) - water content (% v/v maximum)
- distillation range (°C), alternatively temperature when 90 % of the solvent (preservative) has been distilled off.

5 Biological test results

See also Annex 3

Laboratory tests:

- Basidiomycetes:
EN 73 + EN 113 + or - *Coriolus versicolor*: Appendix No. _____
EN 84 + EN 113 + or - *Coriolus versicolor*: Appendix No. _____
- Soft rot: ENV 807, Part 2: Appendix No. _____

Field-tests above ground:

- EN 330 L-joint: Appendix No. _____
- CEN/TS 12037 Lap-joint or other: Appendix No. _____

Field tests in ground contact: EN 252: Appendix No. _____

Marine test in seawater: EN 275: Appendix No. _____

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

6 Treating properties and 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 retention 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. _____

Method(s) for qualitative determination of the penetration of the preservative in the wood (visualized by colour pictures): 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 as soon as the application fee, after invoicing, 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

Test Methods: Test on Scots pine (<i>Pinus sylvestris</i> L) sapwood only	NWPC Wood Preservation class			
	B	AB	A	M
EN 73 + EN 113 without <i>Coriolus versicolor</i>	+	+		
EN 73 + EN 113 with <i>Coriolus versicolor</i>			+	+
EN 84 + EN 113 without <i>Coriolus versicolor</i>	+	+		
EN 84 + EN 113 with <i>Coriolus versicolor</i>			+	+
EN 330 (the untreated reference samples of Scots pine sapwood shall have reached the median rating 3 of severe decay)	+	(+)**		
CEN/TS 12037:2003 (the untreated reference samples of Scots pine sapwood shall have reached the median rating 3 of severe decay)		+		
ENV 807, Part 2 (optional)			+	+
EN 252 (≥ 5 years)*		(+)***	+	
EN 275 (≥ 5 years)				+

* At least three relevant test sites including two in Nordic countries.

** Full penetration for surface coated treatment, see 6.6.2 class AB, page 12.

*** If approved in class A, see 6.6.2 class AB, page 12.

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 (LD₅₀-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 ought 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, cf. 3.10

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

Quality control

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

Other