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BSI Standards Publication

Durability of wood and wood-based products — Assessment of the effectiveness of a masonry fungicide to prevent growth into wood of Dry Rot Serpula lacrymans (Schumacher ex Fries) S.F. Gray — Laboratory method

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National foreword

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A list of organizations represented on this committee can be obtained on request to its secretary.

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Durability of wood and wood-based products - Assessment of the effectiveness of a masonry fungicide to prevent growth into wood of Dry Rot Serpula lacrymans (Schumacher ex Fries) S.F. Gray - Laboratory method

Durabilité du bois et des matériaux dérivés du bois - Évaluation de l'efficacité d'un fongicide de maçonnerie pour empêcher le développement dans le bois de la mérule Serpula lacrymans (Schumacher ex Fries) S.F. Gray - Méthode de laboratoire

Dauerhaftigkeit von Holz und Holzprodukten - Bestimmung der Wirksamkeit eines Schutzmittels gegen das Überwachsen von Echtem Hausschwamm Serpula lacrymans (Schumacher ex Fries) S.F. Gray vom Mauerwerk auf das Holz - Laboratoriumsverfahren

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Contents

Page

Foreword

This document (CEN/TS 12404:2015) has been prepared by Technical Committee CEN/TC 38 “Durability of wood and wood-based products”, the secretariat of which is held by AFNOR.

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Introduction

This Technical Specification describes a laboratory method of test for the assessment of the effectiveness of a masonry fungicide applied to masonry for the prevention of the growth of dry rot, *Serpula lacrymans* (Schumacher ex Fries) S.F. Gray into wood.

This laboratory method enables the determination of the concentration of a preservative within mortar which could prevent the dry rot fungus from growing through a given mortar layer treated with this preservative.

1 Scope

This Technical Specification specifies a method for determining the performance of a preservative, applied to the upper surface of the mortar test specimens, in preventing the growth of dry rot through the treated mortar when exposed to the test fungus.

This method is only applicable to masonry fungicides applied as a true solution of the preservative in water or dilute oil in water emulsion. It is not applicable to rods, pastes and other similar preservative types. This method is applicable to preservatives applied to masonry by brushing, spraying and/or injection techniques or mixed into rendering and plastering mortar for masonry.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 113:1996, *Wood preservatives - Test method for determining the protective effectiveness against wood destroying basidiomycetes - Determination of the toxic values*

EN 413-1, *Masonry cement - Part 1: Composition, specifications and conformity criteria*

EN 459-1, *Building lime - Part 1: Definitions, specifications and conformity criteria*

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 ISO 3696, *Water for analytical laboratory use - Specification and test methods (ISO 3696)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
masonry fungicide
fungicidal/fungistatic product applied to masonry and other mineral construction materials to prevent the growth of dry rot through or over the treated material

3.2
performance
behaviour of the preservative product in terms of its effectiveness in test

3.3
preservative
formulated masonry fungicide in the form received from the supplier for the test

3.4
supplier
sponsor of the test

4 Principle

The preservative to be tested is applied by pipette (or in accordance with the sponsor's instruction) to the upper surface of mortar test specimens. The mortar test specimens are contained in rigid tubes and an untreated wooden sample is placed on top of these mortar test specimens. The bases of the mortar specimens are exposed to dry rot attack for a given time. The assessment of the performance of the test

preservative consists of checking the growth of the fungus through the mortar and the evaluation of any attack of the wooden sample contained in the rigid tube.

5 Test materials

5.1 Test fungus

5.1.1 Obligatory test fungus

— *Serpula lacrymans* (Schumacher ex Fries) S.F. Gray, strain BAM Ebw.315.

5.1.2 Optional test fungi

For specific regional uses or conditions, it is also possible to use other strains of dry rot (e.g.*Serpula lacrymans* FPRL 12 C) known to be capable of growing through masonry.

NOTE Other fungal species can grow through masonry. This method of test could be used to assess the ability of these fungi to grow through mortar specimens.

5.1.3 Maintenance of strains

The strains shall be maintained and treated in accordance with the instructions from their laboratory of origin (see annex A). If a strain shows signs of degeneration, it shall no longer be used and the testing laboratory shall obtain a new standard culture of the strain.

5.2 Products and reagents

5.2.1 Water, distilled or deionized, conform to grade 3 of EN ISO 3696.

5.2.2 Malt – mineral salt – agar culture medium; consisting:

— malt extract	in concentrated form	12,50 g
	or in powder form	10,00 g
— agar causing no inhibition of growth of fungi		15,00 g
— potassium dihydrogen phosphate (KH2PO4)		2,72 g
— calcium sulfate dihydrate (CaSO4.2H2O)		0,38 g
— magnesium sulfate heptahydrate (MgSO4.7H2O)		0,62 g
— water (5.2.1) to make up to 1 000 ml.		

Place all the ingredients in a 1 000 ml beaker measure and gently heat, stirring occasionally, until completely dissolved.

Pour 150 ml of the culture medium into each culture vessel (5.3.1).

Close the vessels with screw cap without a hole a quarter of a turn less than full closure and sterilise the closed vessels in the autoclave (5.3.8) at (121 ± 2) °C for 30 min. Let them cool standing upright.

5.2.3 Nutrient solution, a mass fraction for 5 % aqueous solution of malt extract.

5.2.4 Equipment for chemical gas or for steam sterilisation or access to a radiation source (see Annex B).

5.2.5 Carbon dioxide, compressed gas in cylinders.

5.2.6 Sodium chloride, saturated solution in water.

5.2.7 Portland cement, conforming to EN 413-1.

5.2.8 Hydrated building lime, conforming to EN 459-1.

5.2.9 Bricklaying mortar sand, quartz sand with a particle size equal to or less than 1 mm, washed under running tap water until the water is no longer turbid.

5.3 Apparatus

5.3.1 Culture vessels

Straight sided flat bottom glass culture vessels with an aperture of 50 mm to 60 mm (see Figure 3), provided with both screw caps without a hole, used for culturing the test fungus (9.1), and screw caps with a central hole equal in size to the outer diameter of the tube (5.3.2.) plus the thickness of the tubing (5.3.3.) in diameter.

NOTE The alternative type C.2 of test vessels described in EN 113, have been found to be suitable.

5.3.2 Rigid tubes, which can be sterilized using an autoclave (for example glass, or polyvinylidene fluoride) with an inner diameter of 35 mm to 46 mm and a length of at least 150 mm.

5.3.3 Tubing, with a diameter corresponding to the outer diameter of the rigid tubes (5.3.2.) with a wall thickness of (1,0 ± 0,5) mm and cut into lengths of (40,0 ± 1,0) mm capable of being sterilized using an autoclave.

NOTE Tubing made of rubber has been found to be suitable.

5.3.4 Inert supports of maximum thickness 3 mm and when in use, do not obscure more than 10 % of the mortar surface.

NOTE Stainless steel washers of overall diameter 25 mm have been found to be suitable. Two supports are required for each test assembly.

5.3.5 Conditioning chamber, well ventilated and controlled at (20 ± 2) °C and (65 ± 5) % relative humidity.

5.3.6 Culture chamber, dark and controlled at (22 ± 1) °C and (70 ± 5) % relative humidity.

5.3.7 Drying oven, capable of being controlled at (45 ± 1) °C.

5.3.8 Autoclave, adjustable to (121 ± 2) °C.

5.3.9 Containers, to prepare the mortar and the preservative solutions, made of a material that does not react with their contents.

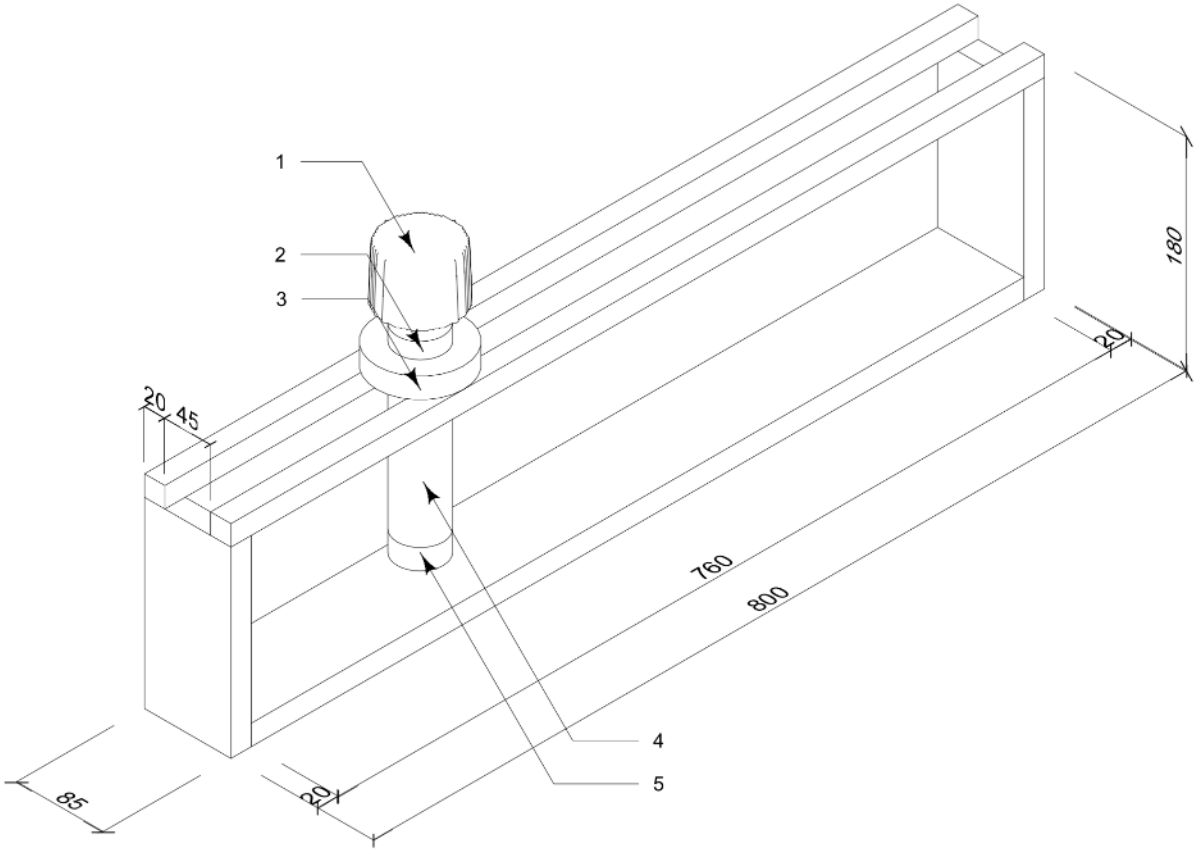
5.3.10 Mortar mould apparatus, consisting of a plastic frame for example polyvinyl chloride (PVC) with a height of (10 ± 0,5) mm, a porous support (for example clay house building bricks, ceramic plates) to absorb the excess water in the fresh mortar and a cloth (for example muslin cloth, cheese cloth) with the same dimensions as the frame to aid demoulding the mortar specimens (see Figure 2).

5.3.11 Plastic lath, used to smooth the surface of the mortar after casting in the plastic frame.

5.3.12 Circular tamper with a flat base, a diameter of 3 mm to 5 mm to less than the internal diameter of the rigid tube (5.3.2), and at least 50 mm longer than the rigid tube.

5.3.13 Racks on which to place the treated mortar test specimens an example is shown in Figure 1.

Dimensions in millimetres



Key

1 wad of cotton wool
2 tubing
3 culture vessel screw cap
4 rigid tube
5 mortar specimen

Figure 1 — Example of a rack

5.3.14 Sterile single-use pipettes of (1,0 ± 0,1) ml content.

5.3.15 Ordinary laboratory equipment, including for example balances accurate to 0,01 g, sealable containers, forceps.

5.3.16 Microbiological safety cabinet, providing protection to the operator and to the work.

6 Sample of the preservative

The sample shall be representative of the product to be tested. It shall be identified as specified in EN 599-1.

7 Mortar test specimen

7.1 Preparation of mortar

Dry a quantity of the quartz sand (5.2.9) in the drying oven (5.3.7) at (45 ± 1) °C. Measure out nine parts by volume of the dried quartz sand and weigh, then place into a container (5.3.9). Add two parts by volume hydrated building lime (5.2.8) and one part by volume Portland cement (5.2.7) and mix thoroughly. Add 16 ml water (5.2.1) per 100 g quartz sand and mix until a homogeneous mortar is obtained.

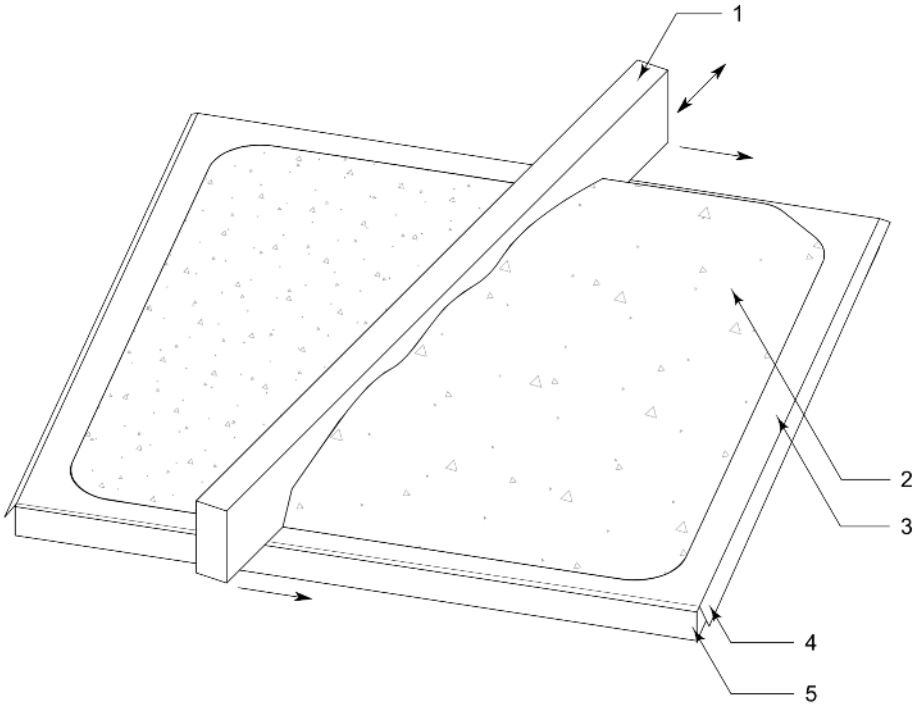
7.2 Preparation of mortar test specimen

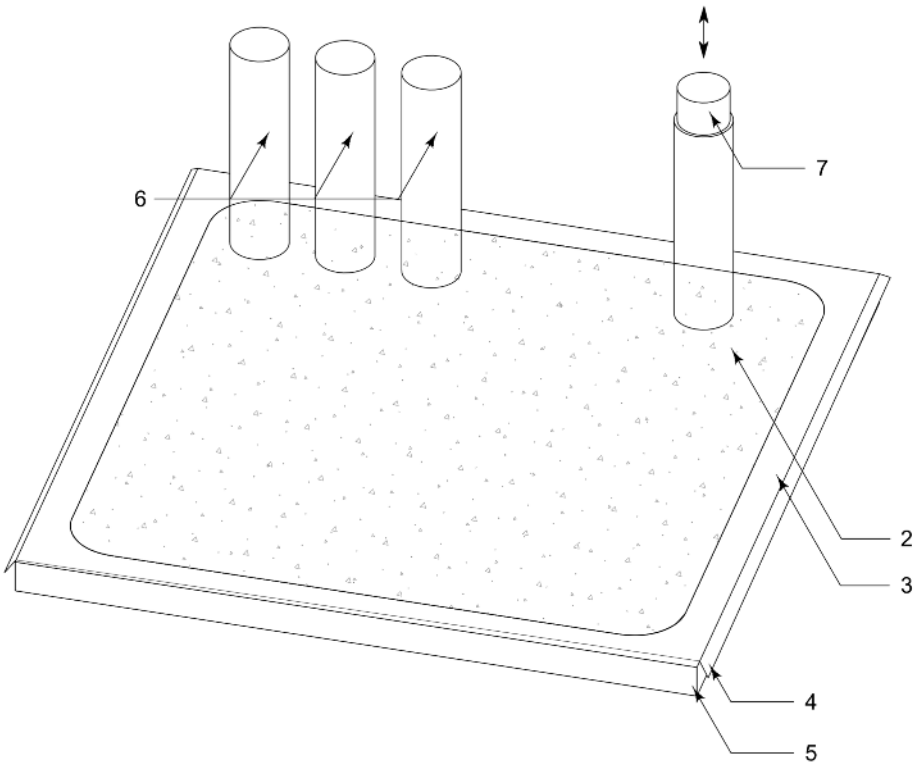
Before casting the fresh mortar in the mortar mould apparatus (5.3.10), soak the porous support in water for 30 min. Place the cloth and plastic frame on the porous support. Cast the fresh mortar in the frame and smooth the surface with the plastic lath (5.3.11). Push the rigid tubes gently in the fresh mortar until the bottom of the tube touches the support. Smooth the surface of the mortar inside the tube using the circular tamper (5.3.12) (see Figure 2).

Remove the mortar from around the outside of the tubes and cover the tops of the tubes with a moistened cloth. Store the tubes vertically, with the mortar test specimens at the bottom, in the conditioning chamber (5.3.5) for five weeks.

NOTE The moistened cloth prevents the mortar from drying out too quickly but can be removed after the first week of conditioning.

Dimensions in millimetres





Key

1 plastic lath
2 mortar
3 plastic frame
4 muslin cloth
5 porous support
6 rigid tubes
7 smoothing of specimens surfaces with a circular tamper

Figure 2 — Preparation of mortar test specimen

7.3 Curing of mortar test specimen

Transfer the dried mortar test specimens to sealable containers containing the saturated sodium chloride solution (5.2.6) in the conditioning chamber (5.3.5). Every working day for four weeks, pass carbon dioxide gas (5.2.5) though each sealable container for 10 min.

The carbon dioxide reduces the alkalinity of the mortar. The alkalinity of the mortar test specimens can be checked with a phenolphthalein colouring method. Prepare a mass fraction of 1 % solution of phenolphthalein in ethanol. Remove two dried mortar test specimens from the tubes and split them in half. Spray the phenolphthalein solution on the cut surfaces. If a red colour develops the mortar test specimens need further curing. When the colour of the cross sections remains unchanged the mortar test specimens are ready for further preparation.

7.4 Leaching of mortar test specimen

Immerse the cured mortar test specimens (7.3) in deionized water for two weeks. Use 300 ml water per mortar test specimen and change the water twice per working day.

After this leaching period, fill each tube with a 100 mm high water column and record the time taken for the water to pass through the mortar test specimen. Reject specimens with a time of greater than 90 s.

Store the acceptable mortar test specimens for at least two weeks in the conditioning chamber (5.3.5) before continuing with the testing.

7.5 Number and distribution of mortar test specimens

Distribute the mortar test specimens (7.4) as follows:

— treated mortar test specimens :

use at least 10 mortar test specimens for each combination of concentration and application rate.

— untreated control mortar test specimens:

use at least 10 control mortar test specimens.

For the testing, on each of the acceptable mortar test specimens slide a length of tubing (5.3.3.) over the end of the rigid tube remote from the mortar so that one end of the tubing coincides with the end of the rigid tube remote from the mortar. Insert the tubing covered tube through the hole in a screw cap from a culture vessel (5.3.1.).

Place the mortar test specimens in the rack (5.3.13) (see Figure 1).

8 Wood test specimens

8.1 Species of wood

The following wood species shall be used for the test.

Scots pine (*Pinus sylvestris* Linnaeus).

8.2 Quality of wood

The Scots pine shall be exclusively sapwood containing little resin.

The wood shall be free from knots, cracks, stain, decay, insect damage or other defects.

The wood shall not have been water- stored, floated, chemically treated or steamed.

Wood that has been kiln dried at temperatures below 60 °C can be used.

8.3 Provision of wood test specimens

Cut the wood test specimen from planed strips having a cross section of (25 ± 0,5) mm x (15 ± 0,5) mm, in which the growth rings may run in any direction.

8.4 Dimensions of wood test specimens

The dimensions, measured at a mass fraction of (12 ± 1) % moisture content, shall be (20 ± 0,5) mm (length) x (25 ± 0,5) mm x (15 ± 0,5) mm.

9 Procedure

9.1 Culturing the test fungus

Inoculate the culture medium in each culture vessel (5.3.1) not more than one week after sterilisation of the culture medium (5.2.2) and using stock cultures of the test fungus which are not more than four weeks old. Store the inoculated culture vessels in the culture chamber (5.3.6) until the test fungus has covered the surface of the culture medium; use within one week of this stage being reached. The test fungus shall not be visibly contaminated by other organisms.

9.2 Treatment of mortar test specimens

Use the test preservative (see Clause 6) as delivered by the supplier or diluted into a container (5.3.9) according to the sponsor's instructions. The application rate(s) shall be as recommended by the supplier but shall not exceed 500 g/m². Calculate the amount of preservative solution to be applied to each mortar test specimen. Using a pipette spread the treatment solution evenly over the mortar surface within the tube; determine the exact amount applied by weighing before and after application. Return the treated mortar test specimens to the rack (5.3.13) and store in the conditioning chamber (5.3.5) for one week.

9.3 Preparation of wood test specimens

Not more than one week before the fungus testing (see 9.5) impregnate the wood test specimens with the nutrient solution (5.2.3.), according to 8.8.2 of EN 113:1996.

NOTE The impregnation of the wood test specimens with a nutrient solution encourages fungal infestation.

9.4 Sterilization procedures

Put a wad of non-absorbent cotton wool in the top of the tube of each treated mortar test specimen and each untreated mortar test specimen. Screw the lids of each specimen into empty culture vessels (5.3.1.) and close the lids to one quarter of a turn less than full closure.

Sterilize all the assemblies using an appropriate procedure for each preservative under test (see annex B).

NOTE In case of doubt on the heat sensitivity of the preservative contact the supplier.

Sterilize the water, the supports (5.3.4), the nutrient treated wood test specimens (see 9.3) and the forceps in the autoclave (5.3.8) for 30 min at (121 ± 2) °C.

9.5 Exposure to fungus

Under sterile conditions, remove the wad of cotton wool from the top of the tube of each sterile test assembly. Apply (1,0 ± 0,1) ml sterile water using a pipette (5.3.14.) to the upper surface of the mortar. Using the forceps place a sterile support (5.3.4) centrally on top of the mortar and place a sterile wood test specimen on the support (5.3.4) with one end grain face in contact with the support. Replace the wad of cotton wool. Remove the lid from one of the culture vessels containing the test fungus (see 9.1). Place a sterile support (5.3.4) centrally on the test fungus. Transfer one of the sterile test assemblies from an empty vessel to the inoculated culture vessel and close the lid to one quarter turn less than full closure. Gently push the tube through the lid until the mortar touches the support on the test fungus. Repeat this procedure for all the mortar test specimens. Place the charged culture vessels in the culture chamber (5.3.6) for 12 weeks.

9.6 Examination of the mortar test specimens

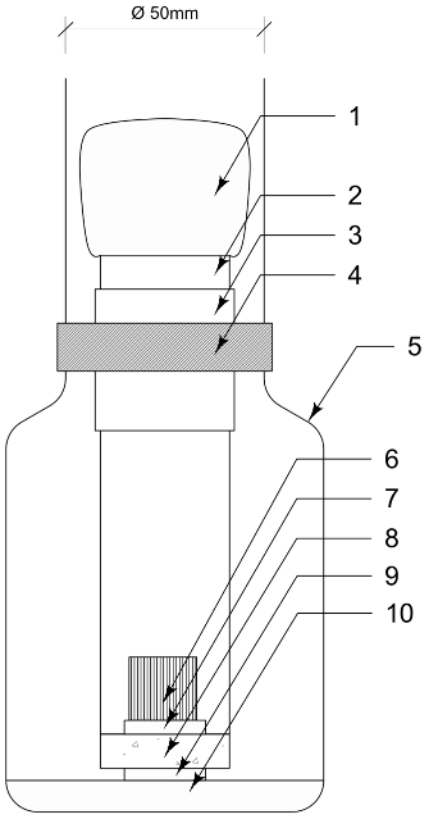
Remove the culture vessels from the culture chamber after 12 weeks exposure. Reject the vessels which are visibly contaminated by other organisms. Remove the tubes from the culture vessels and evaluate the condition of the mortar test specimen and wood test specimen using the following ratings.

1) no growth on the mortar test specimen;

2) only growth on the underside of the mortar test specimen and no growth on the wood test specimen;

3) growth through the mortar test specimen and infestation of the wood test specimen.

Dimensions in millimetres



Key

1	wad of cotton wool	6	wood specimen
2	rigid tube	7	support
3	tubing	8	mortar specimen
4	screw cap	9	support
5	culture vessel	10	culture medium

Figure 3 — Arrangement of the mortar test specimen and wood test specimen in the culture vessel

9.7 Validity of test

The test is valid provided at least six replicate untreated mortar test specimens have not been rejected due to contamination, and not more than one of the remaining replicates has been given a rating of < 2. The test with

each combination of concentration of the test product or application rate is valid provided that at least six treated test mortar specimens have not been rejected due to contamination.

10 Statement of the results

The test preservative or a dilution of the test preservative is considered to be effective at the application rate used in the test provided that none of the replicates has a rating exceeding 1.

11 Test report

The test report shall include at least the following information (see also annex C for an example):

a) the number and date of this Technical Specification;

b) the name of the supplier of the preservative under test;

c) the type of the preservative tested together with its unique name or code and with an indication of whether or not the composition has been declared;

d) the name and concentration of active ingredient;

e) the solvent or diluent used;

f) the species and strain number of the fungus used;

g) the concentrations of the preservative tested expressed as percentages by mass;

h) the applications rate in g/m² of the preservative under test;

i) the means of sterilization used for the mortar test specimens;

j) the date of the exposure of the mortar test specimens to fungus;

k) the date of final examination of the mortar test specimens;

l) for each treated and untreated mortar test specimen the individual score after visual examination;

m) the concentration and application rate in g/m^2 of the masonry fungicide found to be effective;

n) any deviation from the standard method and any factors that may have influenced the results;

o) the name of the organization responsible for the test report and the date of issue;

p) the name and signature of the officer(s) in charge of testing;

q) the following note:

— the interpretation and practical conclusions that can be drawn from this test report demand a specialized knowledge of curing dry rot infestation and, for this reason, this test report cannot of itself constitute an approval certificate.

Annex A
(informative)

Test fungi

A.1 General information on maintenance and acquisition of test strains

Laboratories, which run tests regularly, may maintain the strains themselves, but if the strain shows any sign of weakness, a fresh culture should be obtained from the laboratory of origin. All laboratories maintaining test fungi should test the virulence at least once a year using untreated mortar test specimens, exposed using the method described in 9.5.

If tests are not undertaken regularly or if a strain shows signs of degeneration a new standard culture of the strain should be obtained from the laboratory of its origin for each test (see 5.1).

When sending cultures, special care should be taken to avoid any harmful influence during transport, for example by freezing during air-transport. To avoid the effects of X- rays, the cultures should be packed in aluminium containers or wrapped in aluminium foil.

NOTE International Regulations exist concerning the transport of cultures. Information on these can be obtained from the Information Centre for European Culture Collections, Mascherorder Weg 1b, D-38124 Braunschweig, Germany.

The laboratory sending test cultures should provide all growth features characteristic of the respective fungus.

When new strains are received, the virulence should be tested to ensure that it complies with the requirement given in 9.7.

Laboratories holding the parent strain should re-isolate the strain after growth on untreated wood if it shows any sign of weakness.

A.2 Maintenance and treatment of test fungi

At least every six months, test strains should be re-isolated from untreated wood which is being actively attacked.

NOTE When undertaking tests regularly, the process of re-isolation can be carried out in association with each test to provide cultures for future tests.

Two wood test specimens of Scots pine sapwood, measuring approximately either 5 mm (grain direction) x 30 mm x 30 mm or 50 mm (grain direction) x 25 mm x 15 mm should be sterilized. The specimens, without ageing should be exposed to attack by the test fungus using the exposure system described in EN 113 for a period of six to eight weeks for the larger specimens or four weeks for the smaller specimens. Without oven drying, under sterile conditions, the larger specimens should be split open, small splinters of wood from the centre of the specimens should be removed and partly embedded in a mass fraction of 5 % malt agar medium in test tubes or Petri dishes and the fungus allowed to grow. Alternatively the smaller specimens should be transferred whole to a mass fraction of 5 % malt agar medium and the fungus allowed to grow out from the wood. These cultures should be used for future tests and to provide stock cultures for future use.

The virulence of the test fungi should be checked at least once a year. If tests are done less than once a year, a separate virulence test should be undertaken prior to the test.

A.3 Information regarding obligatory test fungus

Serpula lacrymans (Schumacher ex Fries) S.F. Gray.

Strain: BAM Ebw. 315 (Bundesantstalt für Materialforschung und - prüfung, D-12205 Berlin, Germany).

Maintenance: Store stock cultures at 5 °C to 8 °C.

A.4 Information regarding optional test fungus

Serpula lacrymans (Schumacher ex Fries) S.F. Gray.

Strain: FPRL 12C (Building Research Establishment Garston, Watford, Hertfordshire, WD2 7JR, United Kingdom).

Activity: Fungus causing a brown cuboidal rot of hardwood and softwood and is able to grow through masonry.

Maintenance: Store stock cultures at 5 °C to 20 °C.

Annex B
(informative)

Methods of sterilization

B.1 Ionizing irradiation

This method is suitable for all preservatives and is especially preferred for organic preservatives and those preservatives for which the reactivity with epoxyethane is unknown.

Place the specimens individually or in groups of similarly treated replicates in polyethylene envelopes (at least 90 µm thick) and seal them by hot iron welding.

NOTE 1 Polyethylene sheeting can be used, folding the sheet over the specimen bed and welding along three sides. It is more practical to use polyethylene tubing sold in rolls. The specimens are introduced into this tubing and welded on both sides.

Send the envelopes thus prepared to an irradiation centre. Advice with regard to the packing of the envelopes shall be obtained from the irradiation centre.

Subject the envelopes to radiation to a dose between 25 kGy and 50 kGy when using radioisotopes (for example 60 Co sources) or between 50 kGy and 100 kGy when using electronaccelerators.

NOTE 2 There does not appear to be any difference between sterilization obtained with a high intensity for a short time or a low intensity applied over a prolonged period. After irradiation, the envelopes can be stored for several weeks without detrimental effect.

Do not open the envelopes until the precise moment when the contents are to be used.

B.2 Epoxyethane-based sterilant

This method is not recommended for organic preservatives and is unsuitable for products containing boron compounds or chlorinated or phenolic substances.

The toxic and explosive nature of this product require special safety measures. Reference should be made to any national regulations governing its use.

Place the specimens individually in low density polyethylene envelopes (between 30 µm and 90 µm thick), and seal by hot iron welding.

Place the specimens for 60 min in an appropriate apparatus where the epoxyethane is at a concentration of 1,2 g/l at a pressure of 550 kPa, the temperature being 55 °C and the relative humidity being 70 % to 80 %.

Ventilate the specimens for five days by exposing them to a current of air.

Do not open the envelopes until the precise moment when the contents are to be used.

B.3 Epoxypropane-based sterilant

This method is not recommended for organic preservatives and is unsuitable for any containing boron compounds or chlorinated or phenolic substances.

The chemical nature of this product requires safety measures. Reference should be made to any national regulations governing its use.

Place the specimens individually in low density polyethylene envelopes (between 30 µm and 90 µm thick), and seal by hot iron welding.

Place the specimens for 24 h in a vessel containing 2 ml of epoxypropane per litre volume of the vessel, and then ventilate them for at least five days by exposing them to a current of air.

Do not open the envelopes until the precise moment when the contents are to be used.

B.4 Water steam

This method shall only be used for preparations known to be heat stable and not volatile in steam.

The day before planting them in the culture vessels, place the test specimens, in glass or other suitable dishes, placing only test specimens treated with the same concentration of the test in the same dish.

Cover the dishes, and place them in a steamer. The steam shall circulate round the dishes for 20 min.

Leave the dishes to cool for 24 h in a room at ambient temperature, and then repeat the sterilization procedure for 10 min.

Do not open the dishes until the precise moment when the test specimens are to be placed in the culture vessels.

Annex C
(informative)

Example of a test report

Number and date of Technical Specification	CEN/TS 12404:2015
Name of the supplier	Company S
Name and type of the product	Z emulsion concentrate water dilutable
Name and concentration of active ingredient	W a mass fraction fo 0,25 %
Solvent or diluent used	Deionized water
Species of fungus used	Serpula lacrymans BAM Ebw.315
Concentrations of the product tested	A mass fraction of 2 % to 4 %
Application amount	See Table C.1
Ageing tests carried out	None
Method of sterilization used	Ionizing irradiation
Date of exposure to the test fungus	2014-07-18
Date of final inspection	2014-10-10
Visual inspection	See Table C.1
Effective concentration	Preservative Z at concentration of a mass fraction of 4% in water when applied at 500 g/m^2
This report has been prepared by	Laboratory A
Location and date	B 2014-11-02
Name and signature of the officier(s) in charge	Mr C, Mrs D

NOTE The interpretation and practical conclusions that can be drawn from this test report demand a specialized knowledge of curing dry rot infestation and, for this reason, this test report cannot of itself constitute an approval certificate.

Table C.1 — Results of mortar test specimens

	Mortar test specimens		
	treated		untreated
Treating solution concentration % mass fraction	2	4	
Application amount (g/m^2)	500	500	0
Replicates	Visual grading in accordance with 9.6		
1	2	0	2
2	1	1	2
3	1	0	2
4	2	0	2
5	2	1	2
6	1	1	2
7	2	1	2
8	1	0	2
9	2	1	2
10	2	0	2
Effective concentration: 4 % *(m/m)* in water at 500 g/m^2.			

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