

# Wood preservatives —

## Guidance on choice, use and application

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# Committees responsible for this British Standard

The preparation of this British Standard was entrusted by Technical Committee B/515, Wood preservation, to Subcommittee B/515/3, Application of wood preservation, upon which the following bodies were represented:

- British Telecommunications plc.
- British Wood Preserving and Damp-proofing Association
- Chemical Industries Association
- Creosote Council
- Department of the Environment, Transport and the Regions — Represented by the Building Research Establishment
- Timber Research and Development Association
- Timber Trade Federation
- Wood Panel Industries Federation

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

- Association of Consulting Scientists
- British Railways Board
- British Woodworking Federation
- Forestry Commission

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## Foreword

This British Standard has been prepared by Subcommittee B/515/3. It supersedes BS 1282:1975 which is withdrawn.

This revision takes account of European Standards for wood preservation produced by CEN Technical Committee 38.

Annex A is informative and gives information on gaining mandatory approval for a wood preservative product.

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### Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10, an inside back cover and a back cover.

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## Introduction

Wood is a versatile construction material with a wide range of uses. It exhibits a particularly advantageous combination of mechanical, thermal and aesthetic properties and its production, use, re-use and disposal has much less negative environmental impact than is associated with alternative materials. However, it is the environmentally much-prized biodegradability of wood that can, in the wrong circumstances, become manifest as unwanted “wood rot”. It is to counter wood rot that wood preservatives, amongst other strategies, are used.

Unprotected wood surfaces are affected by photolytic, thermolytic, and hydrolytic deterioration, which together comprise the process commonly termed “weathering”. In exceptional service conditions, limited chemical deterioration can also occur. The term “wood preservation” is not, however, normally used to encompass protection from deterioration of these kinds.

The term “wood preservation” is used in this standard to describe those processes in which wood has biologically-active chemicals introduced onto or into it, for the purpose of preventing or eliminating deterioration by insects, fungi and marine borers.

## 1 Scope

This British Standard provides an overview of wood preservation and the factors for consideration in the selection, and application of appropriate wood preservatives and in the use of preservative-treated timber. It also shows how the many British and European standards relating to specific aspects of wood preservation interrelate, and indicates which standards have further bearing on the topics raised.

## 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of this British Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. For undated references, the latest edition of the publication referred to applies.

BS 4261:1999, *Wood preservation — Vocabulary*.

BS EN 335-1:1992, *Hazard classes of wood and wood-based products against biological attack. Classification of hazard classes*.

BS EN 335-2:1992, *Hazard classes of wood and wood-based products against biological attack. Guide to the application of hazard classes to solid wood*.

## 3 Terms and definitions

For the purposes of this British Standard the terms and definitions given in BS 4261:1999 apply.

## 4 Biological hazards

### 4.1 Hazard classes

The different service situations in which wood can be used are categorized into five hazard classes in BS EN 335-1:1992, based on prevailing moisture conditions. These categories form the structural framework around which a suite of BS ENs dealing with biological durability and preservation of wood is built.

The biological agencies which cause deterioration of wood are summarized in 4.2 of this standard.

### 4.2 Biological agencies

#### 4.2.1 General

The biological deterioration of wood results from attack by certain biological agencies. The principal agencies found in the United Kingdom are described below.

#### 4.2.2 Staining fungi

Staining fungi cause discolouration of wood when the moisture content of wood rises above 20 %. They derive nutrients principally from the contents of wood cells, rather than from the structural components of the cells. These fungi do not cause appreciable alteration of the mechanical properties of wood, but are of significance when it is important to maintain the decorative properties of wood. Nevertheless, the presence of such fungi is indicative of moisture conditions that can result in the growth of wood-rotting fungi.

Staining fungi are differentiated by the permanent colour that they impart to the wood. The most common are blue stain fungi that cause blue to black discoloration of variable intensity and depth in the sapwood of certain wood species. Staining fungi can occur in freshly felled, unseasoned wood (in which case their effect is described as “sapstain”). They can also occur in seasoned wood in use (in which case their effect is described as “blue stain in service”).

#### 4.2.3 Mould fungi

Mould fungi can occur in the form of coloured patches on the wet surface of wood. They can appear at very high relative humidities where only the surface of the wood has a moisture content above 20 %. These fungi do not cause appreciable alteration of the mechanical properties of wood, but are of significance when it is important to maintain the decorative properties of wood. Nevertheless, the presence of such fungi is indicative of moisture conditions that can result in the growth of wood-rotting fungi. They can cause superficial discoloration of wood. However, this can be removed by planing, unlike the discoloration caused by staining fungi which is deeply penetrating.