

ICS 79.040

English version

## Durability of wood and wood-based products - Criteria for hot air processes for curative uses against wood destroying organisms

Durabilité du bois et des matériaux dérivés du bois -  
Critères s'appliquant aux procédés à air chaud à usages  
curatifs contre les organismes lignivores

Dauerhaftigkeit von Holz und Holzprodukten - Kriterien für  
Heißluftverfahren zur Bekämpfung von holzerstörenden  
Organismen

This Technical Specification (CEN/TS) was approved by CEN on 9 November 2004 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

## Contents

	Page
1 Scope .....	5
2 Terms and definitions .....	5
3 Wood destroying organisms .....	5
3.1 Beetles .....	5
3.2 Dry rot fungus .....	6
4 Performance requirements for curative hot air treatment.....	6
4.1 General.....	6
4.2 Health and safety considerations .....	6
4.3 Application against beetles .....	7
4.4 Application against the dry rot fungus ( <i>Serpula lacrymans</i> ) .....	7
5 Monitoring requirements .....	9
6 Process validation .....	10
6.1 General.....	10
6.2 Temperature control.....	10
6.3 Equipment .....	10
6.4 Locations for measuring .....	10
6.5 Time schedule for measuring.....	10
Annex A (informative) Example of a record for monitoring the hot air treatment to eradicate wood attacking beetles .....	12
A.1 General information.....	12
A.2 Installation of the monitoring instruments: .....	12
A.3 Monitoring record .....	12
Annex B (informative) Example of a record for monitoring the hot air treatment to eradicate the dry rot fungus ( <i>Serpula lacrymans</i> ) .....	13
B.1 General information.....	13
B.2 Installation of the monitoring instruments .....	13
B.3 Monitoring record .....	13

## Foreword

This document (CEN/TS 15003:2005) has been prepared by Technical Committee CEN/TC 38 “Durability of wood and derived materials”, the secretariat of which is held by AFNOR.

This Technical Specification gives the criteria for hot air treatment for curative uses against wood destroying organisms. European Standard EN 14128 concerns the criteria for curative wood preservatives as determined by biological tests.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

## Introduction

This document should be used in conjunction with EN 14128 which describes the performance requirements for curative wood preservatives as determined by biological tests.

The need for hot air treatment for curative use against wood destroying organisms depends upon a careful diagnosis by expert, qualified specialists to determine the precise causes of the damage to be rectified. This should include the type of wood attacking organisms involved and in the case of beetles whether they are considered to be active, the environmental circumstances, the type of wood involved, the nature of the building or construction, and the structural and physical significance of the timber which is damaged or at risk of being damaged.

In particular the need for hot air treatment for curative use against the true dry rot fungus (*Serpula lacrymans*) should include the precise identification of the dry rot fungus, the environmental circumstances, especially the source and nature of any wetting, and the nature of the building or construction, including the masonry in which the dry rot fungus is present.

**NOTE** So far, no reliable methods exist to determine whether the true dry rot fungus in a building construction is dead or still alive, including dormant stage.

Hot air treatment for curative use should be used in an integrated way as part of a carefully prescribed strategy involving a series of actions appropriate to the particular circumstances of each case. Associated physical measures involving appropriate building works to remedy ingress of moisture and to dry out any dampness can be an essential prerequisite for the use of any process for curative use. Expert diagnosis should take into account all regional, practical, environmental, economical, safety and any other factors which may be relevant to the prescriptive decisions to be taken.

If properly done hot air treatment does not influence the mechanical properties of the timber involved. However the temperature usually applied can influence materials other than wood,

It is not the purpose of this document to provide a specification, or even guidance in developing specifications for remedial work to eradicate wood destroying organisms. It is intended to guide specifiers, users and others in selecting and specifying hot air treatment on the basis of its effectiveness as demonstrated in accordance with the criteria given.

## 1 Scope

This document specifies the minimum performance requirements for hot air treatment intended for application against specific classes of wood attacking organism. It specifies the minimum performance criteria to be achieved by hot air treatment.

**NOTE** Until now sufficient practical experience and results of scientific tests are available only for heat treatments using hot air as a medium to increase the temperature inside building components up to a threshold lethal to wood destroying organisms. Therefore, this document is restricted to hot air treatments although other measures like, for example, radio waves or electric blankets may be useful means for limited and special applications.

This document is applicable only to hot air treatment, in so far as it is intended to cure attack by wood destroying beetles and the dry rot fungus (*Serpula lacrymans*).

This Technical Specification is not applicable to eradicate an attack by termites or by fungi other than the dry rot fungus (*Serpula lacrymans*).

Hot air treatment as described in this document does not provide subsequent preventive protection against attack by wood-destroying organisms.

This document does not define the equipment, techniques or precise operation procedures required to achieve the parameters given in clause 5 for any set of practical circumstances. Specifications for particular practical circumstances have to be developed on a case by case basis by expert advisers/consultants.

## 2 Terms and definitions

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

### 2.1

#### **eradication**

treatment of infested timber and/or masonry in order to kill the wood destroying insects and the dry rot fungus.

**NOTE** An eradication not necessarily includes an preventive effect against a subsequent attack. This especially concerns hot air treatment as specified in this Technical Specification and which does not include any preventive effect.

### 2.2

#### **lethal dose**

total amount of heat as a combination of a particular temperature for a particular period of time necessary to kill all stages of the wood destroying organisms in question

### 2.3

#### **structural timber**

Definition relevant from CEN/TC 124 in preparation.

## 3 Wood destroying organisms

### 3.1 Beetles

The wood attacking beetles to which hot air treatment can be applied are:

- *Hylotrupes bajulus* (houseslonghorn beetle) in the sapwood of softwoods;
- *Anobium punctatum* (common furniture beetle) in softwoods and hardwoods;
- *Xestobium rufovillosum* (deathwatch beetle) in hardwoods and softwoods, mainly in oak wood;