

ICS 87.040

English Version

**Paints and varnishes - Coating materials and coating systems
for exterior wood - Assessment of tannin staining**

Peintures et vernis - Produits de peinture et systèmes de
peinture pour le bois en extérieur - Évaluation des taches
de tanin

Beschichtungsstoffe - Beschichtungsstoffe und
Beschichtungssysteme für Holz im Außenbereich -
Beurteilung von unerwünschten Verfärbungen aufgrund von
Holzinhaltsstoffen

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (CEN/TS 16498:2013) has been prepared by Technical Committee CEN/TC 139 "Paints and varnishes", the secretariat of which is held by DIN.

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Introduction

Coatings on exterior wood surfaces have both decorative and protective functions. A valued function of the coating system is to protect against discoloration caused by the presence of wood extractives in the coating migrating from the wood material. Bleeding of extractives can occur at different stages, including shortly after coating application and at a later stages in use, when driving forces like fluctuating humidity are present.

1 Scope

This Technical Specification specifies a test method for assessing the discoloration of coatings on wood by tannin staining due to wood extractives. The method uses an extract from Merbau wood as an indicator. Bleeding of wood extractives is assessed at two specified stages firstly after coating application and secondly after cyclic climate exposure. A qualification of colour differences that can be attributed to three different causes, bleeding of extractives, low opacity of the coating film or general yellowing in climate exposure, is included. This document does not specify acceptance values for colour differences that can be tolerated and it is not applicable to staining caused by knots for which there is a different test method (e. g. CEN/TS 16359).

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 927-5, *Paints and varnishes - Coating materials and coating systems for exterior wood - Part 5: Assessment of the liquid water permeability*

ISO 554, *Standard atmospheres for conditioning and/or testing — Specifications*

ISO 3131, *Wood — Determination of density for physical and mechanical tests*

ISO 7724-2, *Paints and varnishes — Colorimetry — Part 2: Colour measurement*

3 Terms and definitions

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

3.1

tannin staining

appearance of discoloration on coated surfaces caused by wood extractives in the substrate

3.2

knot staining

appearance of discoloration on coated surfaces caused by wood extractives in knots

3.3

wood extractives

low-molecular weight wood components soluble in organic solvents or water

4 Apparatus and materials

4.1 1 l measuring cylinder.

4.2 Balance, with an accuracy of 0,01 g.

4.3 CIELAB Spectrophotometer, with d/8 geometry, D65 light source and 10° standard observer.

4.4 Chips of Merbau wood (*Intsia sp.*), produced by drilling.

4.5 1 l round bottom flask with a water cooled condenser.