SLOVENSKI STANDARD
SIST-TS CEN/TS 16359:2012

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Barve in laki - Premazi in premazni sistemi za zaščito lesa v zunanji uporabi - Ocenjevanje odpornosti premazov proti obarvanju zaradi lesnih grč

Paints and varnishes - Coating materials and coating systems for exterior wood - Assessment of knot staining resistance of wood coatings

Beschichtungsstoffe - Beschichtungsstoffe und Beschichtungssysteme für Holz im Außenbereich - Beurteilung der Resistenz der Astausfärbung von Holzbeschichtungen

Peintures et vernis - Produits de peintures et systèmes de peintures pour bois en extérieur - Evaluation de la résistance des revêtements pour bois aux taches provoquées par les nœuds

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ICS:

87.040	Barve in laki	Paints and varnishes

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English Version

Paints and varnishes - Coating materials and coating systems for exterior wood - Assessment of knot staining resistance of wood coatings

Peintures et vernis - Produits de peintures et systèmes de peintures pour bois en extérieur - Évaluation de la résistance des revêtements pour bois aux taches provoquées par les nœuds

Beschichtungsstoffe - Beschichtungsstoffe und Beschichtungssysteme für Holz im Außenbereich - Beurteilung der Beständigkeit von Holzbeschichtungen gegen Astausfärbung

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Foreword

This document (CEN/TS 16359:2012) 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

The treatment of exterior wood surfaces has both aesthetic and protective functions. A vital purpose of a coating system is to protect against discoloration caused by wood extractives. Discoloration can be characterised as tannin staining or as knot staining.

This document provides a method for assessment of discoloration of coatings on wood caused by wood extractives in knots, i.e. it relates to knot staining only.

1 Scope

This Technical Specification specifies a test method for assessing the discoloration of coating systems on wood due to wood extractives from knots. The discoloration is measured by colorimetry and the result is stated as the colour difference between the coated surface on the knot and the coated surface beside the knot.

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 14298, *Sawn timber — Assessment of drying quality*

EN ISO 4892-2:2006, *Plastics — Methods of exposure to laboratory light sources — Part 2: Xenon-arc lamps (ISO 4892-2:2006)*

EN ISO 15528, *Paints, varnishes and raw materials for paints and varnishes — Sampling (ISO 15528)*

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

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

ISO 7724-3, *Paints and varnishes — Colorimetry — Part 3: Calculation of colour differences*

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 wood components soluble in organic solvents or water

3.4
sound knot
knot that, at the relevant surface, is intergrown with the surrounding wood along more than 75 % of its circumference and is free of decay

[SOURCE: EN 844-9:1997, 9.1.14 and EN 844-9:1997, 9.1.18].

4 Test panels

4.1 Wood

The raw material for the test panels shall be panels of pine (*Pinus silvestris*) free from visible cracks, blue stain, bacterial attack and rot damage. The panels shall be dried to target moisture content 18 % in

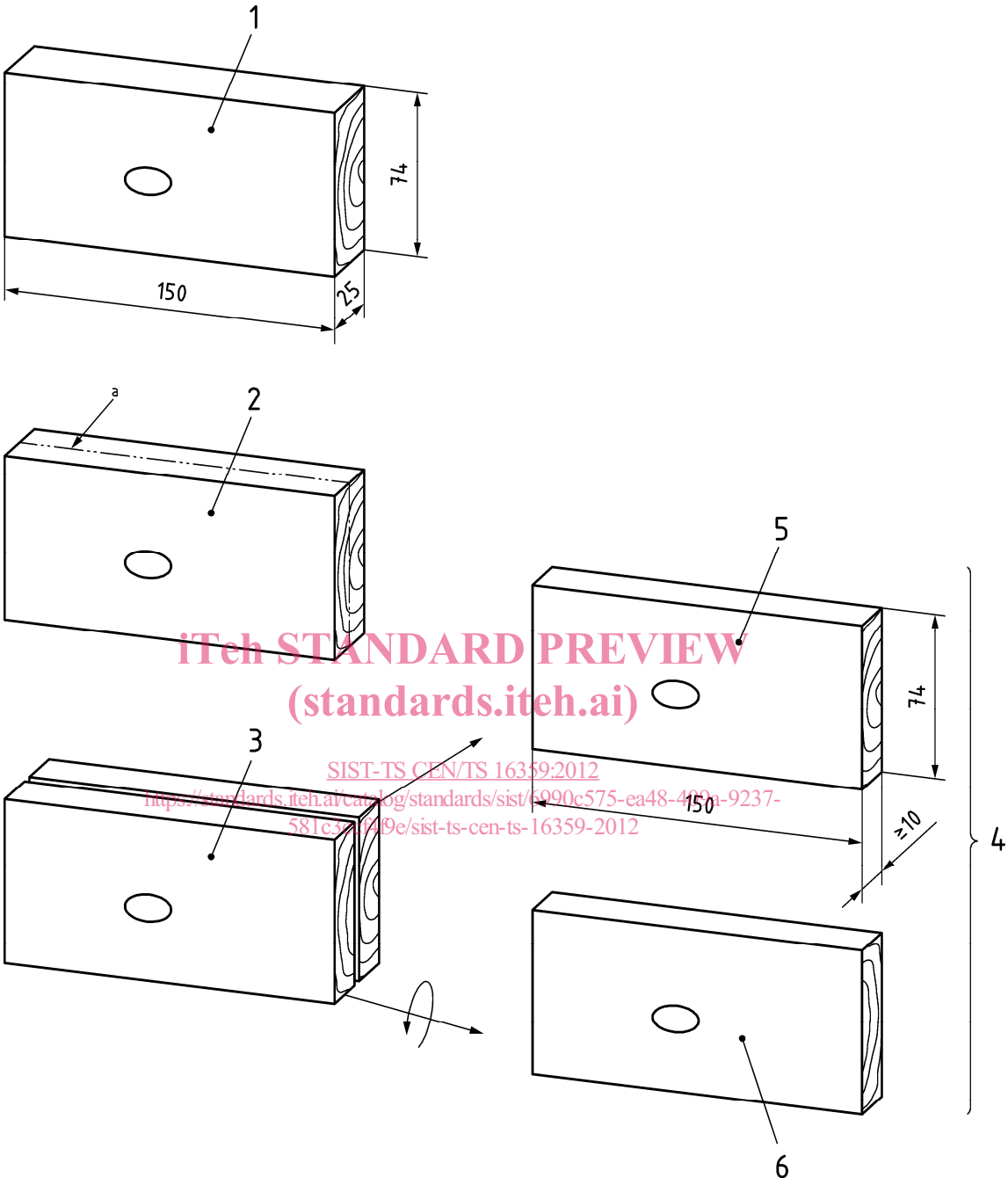
accordance with EN 14298. The drying temperature shall not exceed 70 °C during any part of the drying schedule.

There are no specific demands on wood dimension, specific gravity, growth ring orientation, content of heartwood and surface structure, however sawn panels 25 mm × 100 mm with a considerable amount of knots is a suitable raw material.

After drying, the panels shall be stored in an atmosphere in accordance with ISO 554 at (20 ± 2) °C/(65 ± 5) % RH until equilibrium has been reached, i.e. normally minimum for one month and maximally for 6 months.

From this dried and climatised wood material test panels with a nominal size of 150 mm × 74 mm × min. 10 mm are prepared with at least one sound knot with a diameter at least as large as the measuring aperture of the apparatus for colour measurement. The test panels shall be cut such that no part of the test face contains material originating closer than 10 mm from the surface of the raw material. The test face shall be “fresh”; therefore the original wood material shall be sawn, cut or machined at least 10 mm below its original surface. A practical procedure of panel preparation is shown in Figure 1. The shown procedure is a suggestion, not a specification.

Dimensions in millimetres



Key

1 raw material is a pine panel with a sound knot at least as large as the measuring aperture of the colorimeter. The knot shall look sound and sufficiently large on both sides of the panel
2 the original panel is divided in two equally sized panels, preferably by band sawing. No more panels of this type should be produced than can be further machined within one week after sawing
3 the two panels should be at least 10 mm thick at this stage
4 the test face to be further machined and coated is the freshly sawn surface designated 5 and 6 in Figure 1

Figure 1 — Example of practical procedure for panel production

NOTE 1 Following this procedure two panels each 150 mm × 74 mm × approximately 10 mm are produced from one initially 25 mm thick panel. It has been experienced that such two halves originating from the same initial panel, often but