



SLOVENSKI STANDARD

SIST EN 927-7:2020

01-junij-2020

Nadomešča:

SIST-TS CEN/TS 16359:2012

Barve in laki - Premazi in premazni sistemi za zaščito lesa za zunanjo uporabo - 7. del: Ocenjevanje odpornosti premazov proti obarvanju zaradi grč v lesu

Paints and varnishes - Coating materials and coating systems for exterior wood - Part 7: Assessment of knot staining resistance of wood coatings

Beschichtungsstoffe - Beschichtungsstoffe und Beschichtungssysteme für Holz im Außenbereich - Teil 7: Beurteilung der Beständigkeit von Holzbeschichtungen gegen Astausfärbung

Peintures et vernis - Produits de peinture et systèmes de peinture pour le bois en extérieur - Partie 7 : Evaluation de la résistance des revêtements pour bois aux taches provoquées par les nœuds

Ta slovenski standard je istoveten z: EN 927-7:2020

ICS:

71.100.50	Kemikalije za zaščito lesa	Wood-protecting chemicals
87.040	Barve in laki	Paints and varnishes

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en,fr,de

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 927-7

April 2020

ICS 87.040

Supersedes CEN/TS 16359:2012

English Version

Paints and varnishes - Coating materials and coating systems for exterior wood - Part 7: Assessment of knot staining resistance of wood coatings

Peintures et vernis - Produits de peinture et systèmes de peinture pour le bois en extérieur - Partie 7 : Évaluation de la résistance des revêtements pour bois aux taches provoquées par les nœuds

Beschichtungsstoffe - Beschichtungsstoffe und Beschichtungssysteme für Holz im Außenbereich - Teil 7: Beurteilung der Beständigkeit von Holzbeschichtungen gegen Astausfärbung

This European Standard was approved by CEN on 1 December 2019.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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European foreword

This document (EN 927-7:2020) has been prepared by Technical Committee CEN/TC 139 “Paints and varnishes”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2020, and conflicting national standards shall be withdrawn at the latest by October 2020.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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EN 927-7:2020 (E)**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 characterized 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.

The method can be used for testing exterior and interior coatings for wood.

Previous investigations have shown that xenon arc exposure shows better correlation to natural weathering than the fluorescent UV test method.

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1 Scope

This document specifies a test method for assessing the discoloration of coating systems on wood due to wood extractives from knots. The discoloration is measured by colourimetry 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 are referred to in the text in such a way that some or all of their content constitutes requirements of this document. 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/CIE 11664-4, *Colorimetry — Part 4: CIE 1976 L*a*b* colour space (ISO/CIE 11664-4)*

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

EN ISO 16474-2:2013, *Paints and varnishes — Methods of exposure to laboratory light sources — Part 2: Xenon-arc lamps (ISO 16474-2:2013)*

EN ISO 18314-1, *Analytical colorimetry — Part 1: Practical colour measurement (ISO 18314-1)*

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

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp/ui>

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

EN 927-7:2020 (E)**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 the target moisture content of 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 (thickness × width) 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 $(20 \pm 2) \text{ °C}/(65 \pm 5) \text{ \% RH}$ until equilibrium has been reached, i.e. normally minimum for one month and maximally for 6 months.

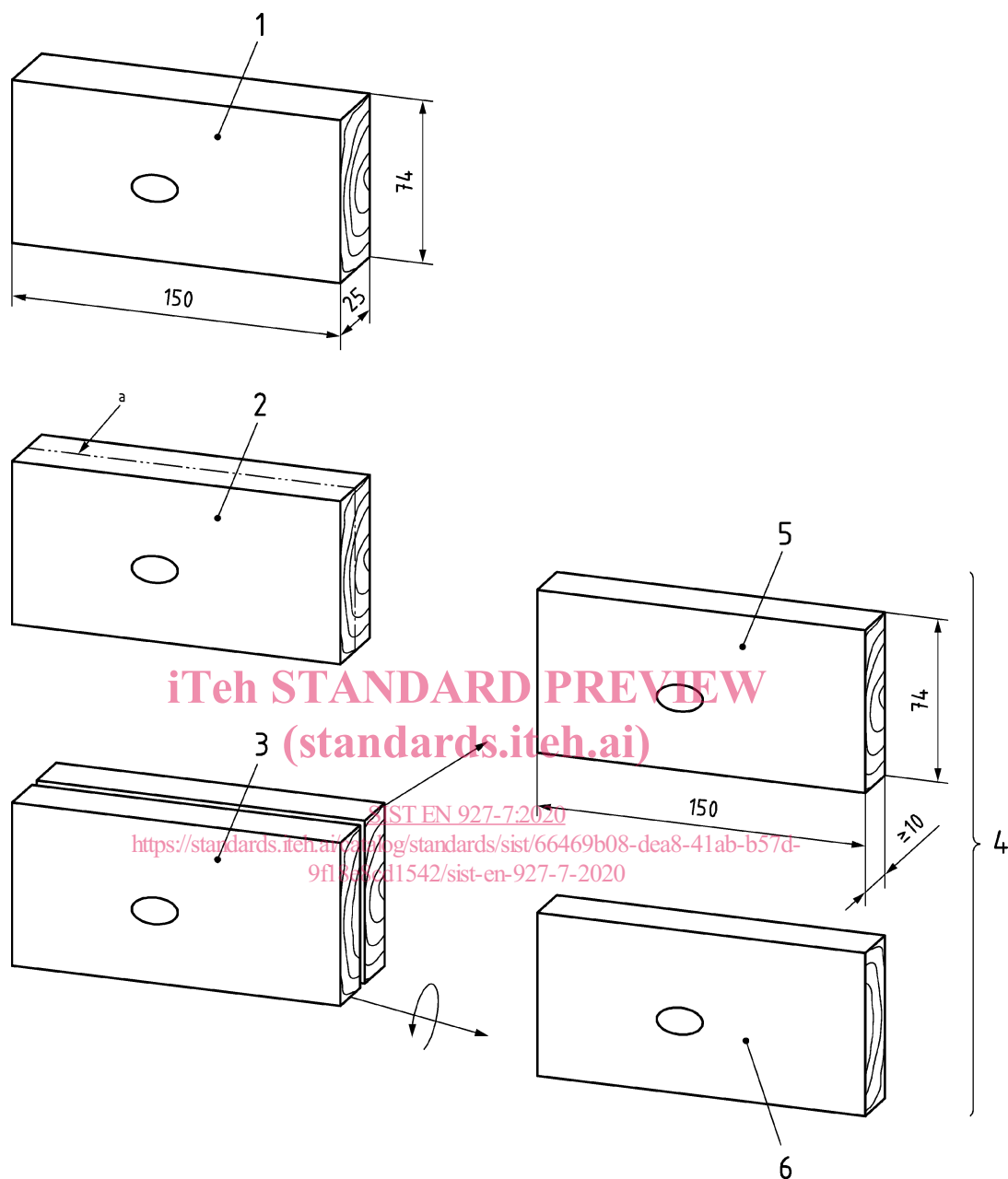
From this, dried and climatized wood material test panels with a nominal size of 150 mm × 74 mm × min. 10 mm are prepared with at least one sound knot with a diameter at least as large as the measuring aperture of the apparatus for colour measurement. The test panels shall be cut such that no part of 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.

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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. Samples shall be planed 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