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Barve in laki - Nanašanje premazov z elektrodepozicijo - 1. del: Slovar (ISO 22553-1:2019)

Paints and varnishes - Electro-deposition coatings - Part 1: Vocabulary (ISO 22553-1:2019)

Beschichtungsstoffe - Elektrottauchlacke - Teil 1: Begriffe (ISO 22553-1:2019)

Peintures et vernis - Peintures d'électrodéposition - Partie 1: Vocabulaire (ISO 22553-1:2019)

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Barve in laki

Paints and varnishes

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**Paints and varnishes —
Electro-deposition coatings —
Part 1:
Vocabulary**

*Peintures et vernis — Peintures d'électrodéposition —
Partie 1: Vocabulaire*

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ISO 22553-1:2019(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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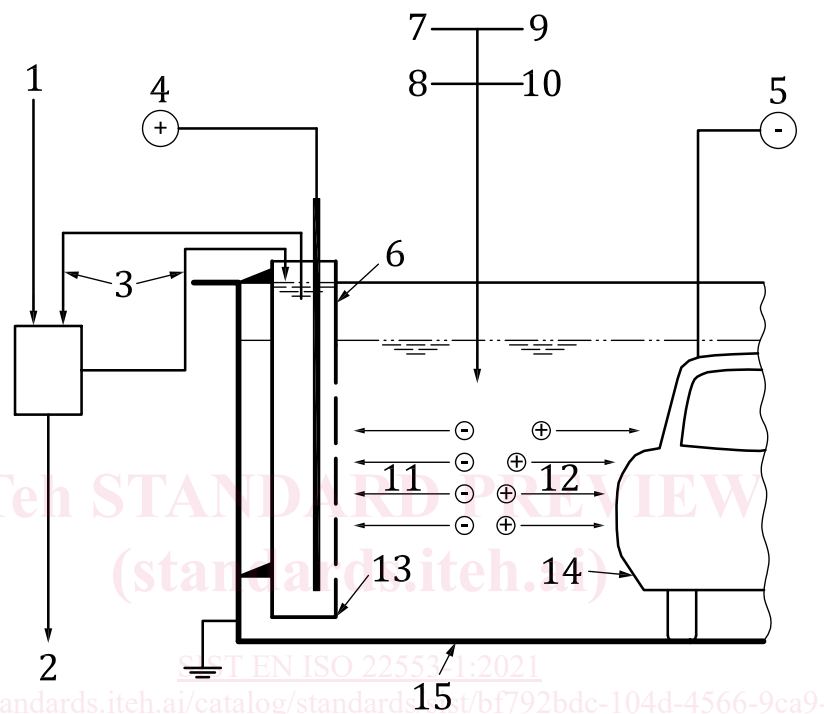
This document was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 9, *General test methods for paints and varnishes*.

A list of all parts in the ISO 22553 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

During the electro-deposition coating process, the non-volatile matter content from water-thinnable electro-deposition coating materials is deposited on the workpiece caused by an electrophoretic process. During that process, the areas on the inside as well as on the outside of the workpiece, including all cavities, are reached. Depending on whether the workpiece is used as cathode or anode, it is distinguished between cathodic or anodic deposition. The cathodic electro-deposition coating process is commonly used (see [Figure 1](#)).



Key

1	demineralized water	9	solvent
2	wastewater treatment	10	demineralized water
3	anolyte circulation	11	acid
4	anode	12	electro-deposition coating material
5	cathode	13	ion-selective membrane
6	anode box	14	vehicle body
7	binder	15	cathodic e-coat tank
8	pigment		

Figure 1 — Example of a deposition processes during cathodic electro-deposition coating

With the combination of binder, pigment and deposition process, a very resistant coating is generated on the workpiece after hardening, which significantly contributes to the corrosion protection in interior and exterior areas.

The electric properties of the material are also significant for the electric power consumption of the process (density of volume charge).

Since the e-coat is jointly responsible for the total appearance of the coating system, a good run of the coating without visible defects is generally emphasized.

Consequently, for extensive corrosion protection and for sealing the workpiece, an additional application of seam-sealing materials, adhesives or foams is recommended.

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Inside the e-coat tanks, there is a possibility of bacterial contamination due to the dragged-in material and the physical conditions (heat, aqueous media, sources of carbon, etc.).

This document specifies terms and definitions for electro-deposition coatings. The subsequent parts of the ISO 22553 series specify methods for the characterization of electro-deposition coatings and test methods. An overview on the test methods is given in [Annex A](#).

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Paints and varnishes — Electro-deposition coatings —

Part 1: Vocabulary

1 Scope

This document defines terms for electro-deposition coatings.

It is applicable to electro-deposition coatings for automotive industries and other general industrial applications, e.g. chiller units, consumer products, radiators, aerospace, agriculture.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

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

3.1

density of volume charge

ρ_A

quotient from an electrical charge, Q , and a volume, V , as shown by the formula:

$$\rho_A = \frac{Q}{V}$$

Note 1 to entry: The density of volume charge is expressed in coulombs per cubic metre (C/m³).

Note 2 to entry: 1 C/m³ = 1 A·s/m³.

3.2

deposition voltage tank voltage

U

voltage adjusted on the respective device, in order to deposit an *electro-deposition coating material* (3.9), by an anodic or cathodic method, with a film thickness specified for that coating material

Note 1 to entry: The deposition voltage is given in volts (V).

3.3

deposition time

time necessary to obtain the required film thickness

3.4

anodic electro-deposition coating process anodic e-coating process

variant of the electro-deposition coating where the coated component is connected as the anode and the counter electrode is connected as the cathode

ISO 22553-1:2019(E)**3.5****pigment content, determined by ashing**

mass fraction of the product under test that is left as a residue after ashing under the specified conditions

Note 1 to entry: It includes inorganic pigments, extenders and other solid constituents of the product that are not volatile under the test conditions but their state can have altered.

3.6**stoving process**

process of final drying and chemical cross-linking of the applied paint film, initiated by the application of heat

3.7**stoving loss**

amount of released volatile matter under standard stoving conditions

Note 1 to entry: The stoving loss includes the reaction loss.

3.8**entry marks**

visible defects that have occurred during the immersion of the panel under voltage, often in the form of streaks produced parallel to the bath surface on the object to be coated

EXAMPLE Hashmarks (see [Figure 5](#)), pinholes (see [Figure 4](#)), mapping (see [Figure 3](#)).

3.9**electro-deposition coating material****e-coat**

aqueous coating material suitable for electro-deposition coating

3.10**deposition time**

time in the course of which the voltage is applied between the anode and cathode during the coating process

3.11**flores**

crater in the shape of a flower, resulting from the assembly of single craters

Note 1 to entry: See [Figure 2](#) for an example.