
**Paints and varnishes — Electro-
deposition coatings —**

**Part 13:
Determination of re-solving behaviour**

Peintures et vernis — Peintures d'électrodéposition —

Partie 13: Détermination du comportement de redissolution

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Contents

	Page
Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	2
5 Apparatus and test equipment	2
6 Test panels	3
7 Number of determinations	3
8 Procedure	3
9 Evaluation	4
10 Precision	5
11 Test report	5
Bibliography	6

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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

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.

Paints and varnishes — Electro-deposition coatings —

Part 13:

Determination of re-solving behaviour

1 Scope

This document specifies a method for determining the re-solving effect of electro-deposition coatings.

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

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.

ISO 1514, *Paints and varnishes — Standard panels for testing*

ISO 2808, *Paints and varnishes — Determination of film thickness*

ISO 4618, *Paints and varnishes — Terms and definitions*

ISO 4628-1:2016, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 1: General introduction and designation system*

ISO 22553-1, *Paints and varnishes — Electro-deposition coatings — Part 1: Vocabulary*

ISO 23321, *Solvents for paints and varnishes — Demineralized water for industrial applications — Specification and test methods*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4618, ISO 22553-1 and the following apply.

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

re-solving

dissolving of a freshly deposited electro-deposition coating in the electro-deposition coating material itself and/or by the subsequent rinsing processes, e.g. ultrafiltrate rinsing

3.2
ultrafiltration
UF

membrane filtration process using membranes with pore sizes of $\leq 0,05 \mu\text{m}$ to retain dissolved, suspended or emulsified higher-molecular components

[SOURCE: DIN 19643-4:2012, 3.12, modified — Note 1 to entry deleted.]

3.3
ultrafiltrate

permeate obtained from the electro-deposition coating material by ultrafiltration

4 Principle

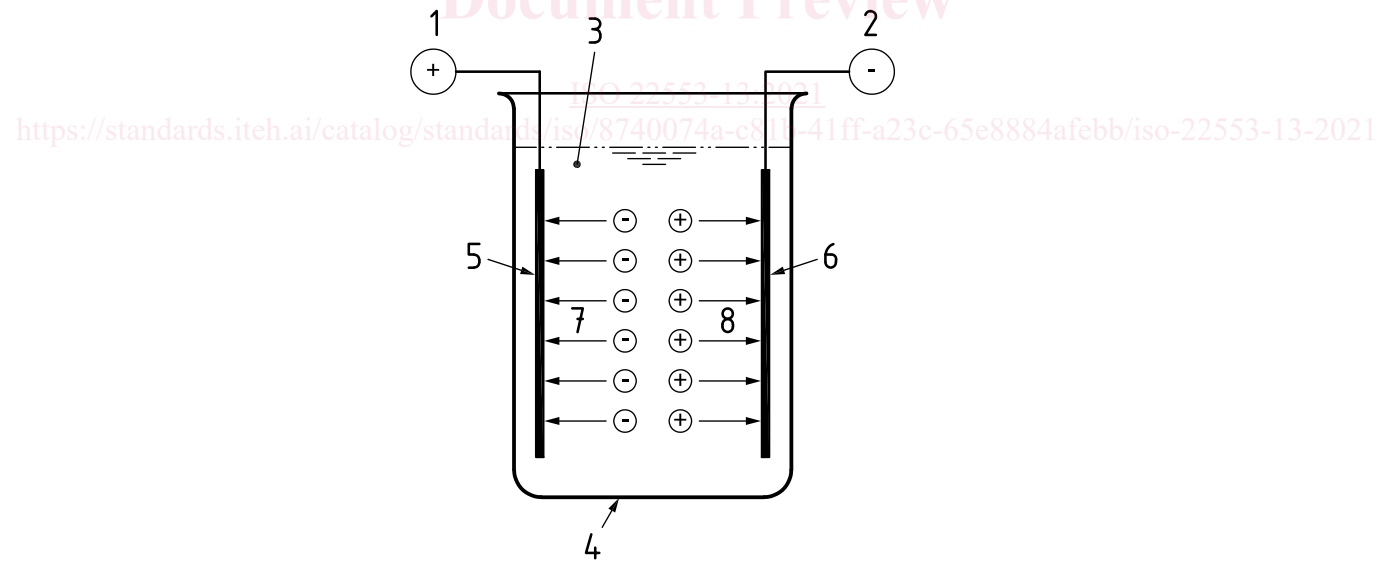
Two test panels (the test panel and another panel as the counter electrode) are put in the electro-deposition coating material and coated in accordance with the product specifications. After coating, the test panels are put in the electro-deposition coating material and the ultrafiltrate of the electro-deposition coating material for a specified period of time.

After stoving, the film thickness is measured and the test panels are visually evaluated for surface defects.

5 Apparatus and test equipment

Ordinary laboratory apparatus, together with the following.

5.1 **Laboratory deposition system.** A laboratory deposition system consists of a deposition tank with tank circulation system and DC voltage equipment. See [Figure 1](#).



Key			
1	anode	5	anode (counter electrode for cathodic e-coat)
2	cathode	6	cathode (test panel for cathodic e-coat)
3 and 8	electro-deposition coating material	7	acid
4	deposition tank		

Figure 1 — Schematic diagram of a laboratory deposition system with cathodic e-coat material as example