
**Non-destructive testing — Penetrant
testing —**

**Part 2:
Testing of penetrant materials**

Essais non destructifs — Examen par ressuage —

Partie 2: Essai des produits de ressuage

**(<https://standards.iteh.ai>)
Document Preview**

[ISO 3452-2:2021](https://standards.iteh.ai/catalog/standards/iso/0ae6ef63-fd2a-40f8-bae7-314fc8d5ad73/iso-3452-2-2021)

<https://standards.iteh.ai/catalog/standards/iso/0ae6ef63-fd2a-40f8-bae7-314fc8d5ad73/iso-3452-2-2021>



iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[ISO 3452-2:2021](https://standards.iteh.ai/catalog/standards/iso/0ae6ef63-fd2a-40f8-bae7-314fc8d5ad73/iso-3452-2-2021)

<https://standards.iteh.ai/catalog/standards/iso/0ae6ef63-fd2a-40f8-bae7-314fc8d5ad73/iso-3452-2-2021>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2021

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

	Page
Foreword	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Classification	2
4.1 Testing products	2
4.2 Sensitivity levels	2
4.2.1 General	2
4.2.2 Penetrant baseline sensitivity	2
4.2.3 Product family sensitivity	2
4.2.4 Fluorescent systems	2
4.2.5 Colour contrast systems	3
4.2.6 Dual-purpose product family	3
5 Testing of penetrant materials	3
5.1 Personnel	3
5.2 Testing facilities	3
5.2.1 Type testing	3
5.2.2 Batch testing	3
5.2.3 Process and control testing	3
5.3 Reporting	3
5.3.1 Type testing	3
5.3.2 Batch testing	4
5.4 Tests	4
5.4.1 Sensitivity test	4
5.4.2 Penetrants	4
5.4.3 Excess penetrant removers (excluding method A)	4
5.4.4 Developers	5
5.4.5 Batch tests for spray cans	5
6 Test methods and requirements	5
6.1 Appearance	5
6.2 Penetrant system sensitivity	6
6.2.1 Fluorescent penetrants (type I)	6
6.2.2 Colour contrast penetrants (type II)	9
6.3 Density	10
6.3.1 Test method	10
6.3.2 Requirements	10
6.4 Viscosity	10
6.4.1 Test method	10
6.4.2 Requirements	10
6.5 Flashpoint	10
6.5.1 Test method	10
6.5.2 Requirements	11
6.6 Washability (method A penetrants)	11
6.7 Fluorescent brightness	11
6.7.1 Test method	11
6.7.2 Requirements	11
6.8 UV stability	11
6.8.1 Test method	11
6.8.2 Requirements	11
6.9 Thermal stability of fluorescent brightness	12
6.9.1 Test method	12
6.9.2 Requirements	12

6.10	Water tolerance	12
6.10.1	Test method	12
6.10.2	Requirements	13
6.11	Corrosive properties	13
6.11.1	General	13
6.11.2	Type testing	13
6.11.3	Batch testing	16
6.12	Content of sulfur and halogens (for products designated low in sulfur and halogens)	16
6.12.1	Test method	16
6.12.2	Requirements	16
6.13	Residue on evaporation/solid content	17
6.13.1	Solvent removers	17
6.13.2	Form d and e developers	17
6.14	Penetrant tolerance	17
6.14.1	Lipophilic emulsifier (method B)	17
6.14.2	Hydrophilic emulsifier (method D)	17
6.15	Developer performance	17
6.16	Re-dispersability	17
6.16.1	Water-suspendable developers	17
6.16.2	Solvent based developers (non-aqueous)	17
6.17	Density of carrier liquid	18
6.17.1	Test method	18
6.17.2	Requirements	18
6.18	Product performance (pressurized containers)	18
6.19	Particle size distribution	18
6.20	Water content	18
6.20.1	Test method	18
6.20.2	Requirements	18
7	Packaging and labelling	18
Annex A	(normative) Comparison of fluorescent brightness	19
Annex B	(normative) Equipment for determination of the visibility of fluorescent indications	21
Annex C	(informative) List of reference materials	22
Bibliography	24

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 135, *Non-destructive testing*, Subcommittee SC 2, *Surface methods*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 138, *Non-destructive testing*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 3452-2:2013), which has been technically revised.

The main changes compared to the previous edition are as follows:

- normative references updated;
- [Tables 1, 4, 8, 9](#) corrected;
- [4.2](#) modified;
- [5.1](#) modified;
- [6.6](#) revised;
- former Annex B deleted;
- editorial changes made.

A list of all parts in the ISO 3452 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.