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## Non-destructive testing — Penetrant testing —

### Part 5: Penetrant testing at temperatures higher than 50 °C

*Essais non destructifs — Examen par ressuage —*

*Partie 5: Examen par ressuage à des températures supérieures à 50 °C*



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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 3452-5 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 138, *Non-destructive testing*, in collaboration with ISO Technical Committee TC 135, *Non-destructive testing*, Subcommittee SC 2, *Surface methods*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

ISO 3452 consists of the following parts, under the general title *Non-destructive testing — Penetrant testing*:

- *Part 1: General principles*
- *Part 2: Testing of penetrant materials*
- *Part 3: Reference test blocks*
- *Part 4: Equipment*
- *Part 5: Penetrant testing at temperatures higher than 50 °C*
- *Part 6: Penetrant testing at temperatures lower than 10 °C*

This corrected version incorporates the following corrections:

- in the Introduction, reference to EN 571-1 has been replaced with reference to ISO 3452-1;
- the normative reference ISO 3452-1 carries a footnote stating its equivalency to EN 571-1;
- the normative reference ISO 3452-2 has been dated;
- the normative reference ISO/TS 18173 has been replaced with references to EN 1330-1 and EN 1330-2;
- in Clause 13, list item c), the requirement relating to qualification time has been changed.

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## Introduction

Temperatures higher than 50 °C can affect the properties of penetrant test materials. The use of penetrant materials and the testing of penetrant materials within the temperature range 10 °C to 50 °C are the subject of ISO 3452-1 and ISO 3452-2. This part of ISO 3452 addresses materials and their use at higher temperatures.

This part of ISO 3452 introduces the concept of process times being linked to working temperatures and accordingly users are recommended to ensure that testing products are correctly associated with process parameters in written instructions (procedures).

Testing products may be specifically developed and qualified for high temperature use but testing products qualified for use at normal temperatures, in some cases, may also be suitable for higher temperature use.

This part of ISO 3452 was prepared with the assistance of ISPEL (Italy), whose laboratory performed research activity to verify the possibility of using penetrant at temperatures higher than 50 °C, up to 200 °C.