
**Steel castings — Liquid penetrant
inspection**

Pièces moulées en acier — Contrôle par ressuage



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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 4987 was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 11, *Steel castings*.

This second edition cancels and replaces the first edition (ISO 4987:1992), which has been technically revised.

Introduction

This International Standard complements the general principles of liquid penetrant inspection described in ISO 3452-1 for the additional requirements of the foundry industry.

Liquid penetrant inspection, as well as any other non-destructive examination, is part of a general or specific assessment of the quality of the casting to be agreed between the purchaser and the manufacturer at the time of acceptance of the order.

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Steel castings — Liquid penetrant inspection

1 Scope

This International Standard specifies a method for the liquid penetrant inspection of steel castings, whatever their grade and the casting procedure used to produce them.

2 Normative references

The following referenced documents are indispensable for the application 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 3059, *Non-destructive testing — Penetrant testing and magnetic particle testing — Viewing conditions*

ISO 3452-1, *Non-destructive testing — Penetrant testing — Part 1: General principles*

ISO 4990, *Steel castings — General technical delivery requirements*

ISO 9712, *Non-destructive testing — Qualification and certification of personnel*

3 Ordering information

Subject to agreement between the manufacturer and the purchaser, enquiries and purchase orders for castings requiring liquid penetrant inspection should include the following information:

- the qualification or certification of the operators who will carry out the inspection;
- the area of the casting to be inspected;
- the required surface finish of the areas to be inspected;
- a mention that inspection is to be carried out in accordance with ISO 3452-1;
- the type of discontinuity;
- the severity level;
- the frequency/number of castings to be inspected;
- the qualification level of the inspector carrying out the inspection.

The sensitivity can differ depending on the method of liquid penetrant inspection selected. Therefore, the severity levels required shall be selected as a function of the liquid penetrants used and the method agreed between the manufacturer and the purchaser.

The type of discontinuity and the severity level can vary depending on the area of the casting inspected (see Tables 1 and 2).