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Non-destructive testing — Penetrant flaw detectors — General technical requirements

*Essais non destructifs — Détecteurs de criques par ressuage —
Prescriptions techniques générales*



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Foreword

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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.

International Standard ISO 9935 was prepared by Technical Committee ISO/TC 135, *Non-destructive testing*, Sub-Committee SC 2, *Surface methods*.

Annex A forms an integral part of this International Standard.

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Non-destructive testing — Penetrant flaw detectors — General technical requirements

1 Scope

This International Standard lays down general requirements on penetrant flaw detectors and their functional units which are designed to reveal invisible, or poorly visible to the eye, surface discontinuities in metals and non-metals of any geometry and at any stage of manufacture.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3452:1984, *Non-destructive testing — Penetrant inspection — General principles*.

ISO 3453:1984, *Non-destructive testing — Liquid penetrant inspection — Means of verification*.

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 penetrant flaw detector: A system of functional units, measuring instruments and auxiliary means used for penetrant inspection.

3.2 functional units for preparation of the surface to be tested: Equipment used for precleaning, degreasing and drying of the surface under examination.

3.3 functional units for application of penetrant inspection materials to the prepared surface: Equipment used for application of a penetrant, excess penetrant removal, application of a developer and development of the penetrant.

3.4 functional units for surface examination: Equipment and measuring instruments used for the inspection of a test surface under ultraviolet radiation or visible light and for the recording of discontinuity indications.

3.5 functional units for quality control of penetrant inspection materials: Measuring instruments and equipment used for control of physical properties of penetrant inspection materials.

3.6 functional units for measurement of ultraviolet radiation and visible light: Instruments and equipment used for measuring ultraviolet irradiation or visible light at the test surface.

3.7 ultraviolet irradiator; UV irradiator: A source of ultraviolet radiation at a wavelength of 315 nm to 400 nm (365 nm desired).

3.8 ultraviolet radiation; UV radiation: Electromagnetic radiation at a wavelength of 315 nm to 400 nm (region A of the UV spectrum). It is used for fluorescent penetrant inspection.

3.9 ultraviolet filter; UV filter: A filter that transmits UV radiation at wavelengths of 315 nm to 400 nm (365 nm desired) and absorbs radiation at other wavelengths.

3.10 reference piece: A physical model of a test component with natural or artificial discontinuities of known geometry. It is used to check the functional units of penetrant flaw detectors, to control the quality of penetrant inspection materials and to check the sensitivity of penetrant inspection.