
**Timekeeping instruments — Conditions for
carrying out checks on radioluminescent
deposits**

*Instruments horaires — Conditions d'exécution des contrôles des dépôts
radioluminescents*

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 4168 was prepared by Technical Committee ISO/TC 114, *Horology*, Subcommittee SC 5, *Luminescence*.

This second edition cancels and replaces the first edition (ISO 4168:1979), which has been technically revised.

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Timekeeping instruments — Conditions for carrying out checks on radioluminescent deposits

1 Scope

This International Standard specifies the conditions in which checks on radioluminescent deposits for timekeeping instruments are to be carried out.

It supplements ISO 3157, in particular clause 4 of that document, "Specifications and test methods for radioluminescent deposits".

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 2859-1:1999, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ISO 3157:1991, *Radioluminescence for time measurement instruments — Specifications*

3 Terms and definitions

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

3.1

user

anyone who handles and applies the radioluminescent substance

NOTE The term "poseur" is widely used in Switzerland.

3.2

new support

any part (hand, dial, bezel) which, owing to the nature of the materials and the treatments of the surface, is outside the previous experience of the user of the radioluminescent substance

3.3

new deposit

any deposit of radioluminescent substance which, owing to its shape or dimensions, is outside the previous experience of the user of the radioluminescent substance

4 Carrying out checks

4.1 General

All radioluminescent deposits shall be capable of successfully withstanding the tests specified in clause 4 of ISO 3157:1991 carried out in the following conditions.

4.2 Checking of the colours, the specific luminous intensity and resistance to ageing

The colours, the specific luminous intensity and the resistance to ageing shall be checked on five standard deposits as defined in 4.1 c) of ISO 3157:1991, for each production batch of radioluminescent substance and each time the nature of the binder is altered.

These checks are the responsibility of the manufacturer of the radioluminescent substance.

If a user applies the radioluminescent substance in conditions which differ from those defined by the manufacturer of this substance (proportion and nature of the binder), the checks are the responsibility of such a user.

4.3 Checking of adhesion

4.3.1 The adhesion shall be checked as follows.

4.3.2 Check each production batch of radioluminescent substance and each production batch of binder, on five standard supports.

These checks are the responsibility of the manufacturer of the radioluminescent substance.

4.3.3 Check each new support or new deposit which has not undergone testing by the user concerned, on at least five pieces.

These checks are the responsibility of the user of the radioluminescent substance.

4.3.4 Check each production batch of dials or hands or any part bearing a radioluminescent deposit, on a representative sample ensuring an acceptable quality level (AQL) of 1 %, in accordance with the standard inspection conditions specified in ISO 2859-1.

These checks are the responsibility of the user of the radioluminescent substance.

4.4 Checking of the insolubility

4.4.1 The insolubility shall be checked as follows.

4.4.2 Check each production batch of radioluminescent substance and each production batch of binder, on the standard supports used for the checking of adhesion as defined in 4.3.2.

These checks are the responsibility of the manufacturer of the radioluminescent substance.

4.4.3 Check on the new supports which were used for the checking of adhesion as defined in 4.3.3 when the new element concerns the support material or the surface treatment of the support.

These supports are the responsibility of the user of the radioluminescent substance.