
**Earth-moving machinery — Safety
requirements for remote operator control
systems**

*Engins de terrassement — Exigences de sécurité relatives aux
systèmes de commande à distance utilisés par l'opérateur*



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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.

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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 15817 was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*, Subcommittee SC 2, *Safety, ergonomics and general requirements*.

This second edition cancels and replaces the first edition (ISO 15817:2005), which has been technically revised.

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IMPORTANT — The electronic file of this document contains colours which are considered to be useful for the correct understanding of the document. Users should therefore consider printing this document using a colour printer.

1 Scope

This International Standard specifies the essential safety requirements for remote operator control systems used on earth-moving machinery as defined in ISO 6165. It is not applicable to autonomous control systems that enable a machine to work without the assistance of an operator, nor does it apply to the remote control of attachments on non-remote controlled machines.

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 6165, *Earth-moving machinery — Basic types – Identification and terms and definitions*

ISO 6405-1, *Earth-moving machinery — Symbols for operator controls and other displays — Part 1: Common symbols*

ISO 6405-2, *Earth-moving machinery — Symbols for operator controls and other displays — Part 2: Specific symbols for machines, equipment and accessories*

ISO 9244, *Earth-moving machinery — Machine safety labels — General principles*

ISO 13766, *Earth-moving machinery — Electromagnetic compatibility*

ISO 13850, *Safety of machinery — Emergency stop — Principles for design*

ISO 15998, *Earth-moving machinery — Machine-control systems (MCS) using electronic components — Performance criteria and tests for functional safety*

IEC 60068-2-31, *Environmental testing — Part 2-31: Tests — Test Ec: Rough handling shocks, primarily for equipment-type specimens*

IEC 60529, *Degrees of protection provided by enclosures (IP code)*