
**Earth-moving machinery and rough-
terrain trucks — Lighting, signalling
and marking lights, and reflex
reflectors**

*Engins de terrassement et chariots tout-terrain — Feux d'éclairage,
de signalisation, de position et d'encombrement, et catadioptres*



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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*, Subcommittee SC 3, *Machine characteristics, electrical and electronic systems, operation and maintenance*.

This third edition cancels and replaces the second edition (ISO 12509:2004), which has been technically revised.

The main changes are as follows:

- in the Scope, it was clarified that rough-terrain trucks are included;
- the term "earth-moving machines" was replaced with "machines" throughout this document;
- the normative references were updated;
- in [Clause 3](#), several definitions were revised and several were removed as they no longer appear in this document;
- in [Clause 4](#), technical changes were made including a re-write of [4.1.6](#) and the addition of [4.1.10](#), with [Table 4-1](#) and addition of clauses moved from the former C.0;
- in [Annex A](#), [Table A-1](#) was revised, including the removal of the footnotes;
- in [Annex B](#), the annex title was clarified and [Figure B-1](#) was revised;
- Annex C from the previous edition was removed;
- Annex D from the previous edition was removed;
- in Annex E (now [Annex C](#)), there were technical changes to most of the clauses, including modifications to the text, the figures and the tables. Configurations text was removed in most clauses as this information is now covered in [4.1.10](#) and [Table 4-1](#). The exception for steel-tracked or steel-pad-foot was moved to [Table A-1](#). The content of Clause C.0 has been moved to other sections in this document and only the index remains;

- in Annex F (now [Annex D](#)), the figures and keys were revised;
- in Annex G from the previous edition was removed.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Earth-moving machines and rough-terrain trucks are designed to function in a wide variety of operations and worksites. Their size, mass, speed, combinations and equipment also greatly vary. Therefore, the combination of lighting, signalling and marking lights, and reflex reflectors will differ.

This document provides information needed for the selection of lighting, signalling and marking lights and reflex reflectors based on machine application and speed.

Earth-moving machinery and rough-terrain trucks — Lighting, signalling and marking lights, and reflex reflectors

1 Scope

This document specifies requirements for installation and performance of lighting, signalling and marking lights, and reflex reflectors. It is applicable to ride-on self-propelled wheeled or crawler earth-moving machines as defined in ISO 6165, and rough-terrain variable-reach trucks as defined in ISO 10896-1 and ISO 10896-2, hereafter known as “machines”. These machines are used off-road and can occasionally be driven on the road.

NOTE 1 Meeting the requirements of this document does not ensure conformance to national or regional on-road regulations.

NOTE 2 Rough-terrain trucks with mast as defined in ISO 3691-1 and rough-terrain lorry-mounted trucks as defined in ISO 20297-1 are not specifically covered by this document, but this document can be used for guidance.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements. 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 vocabulary*

ISO 10896-1, *Rough-terrain trucks — Safety requirements and verification — Part 1: Variable-reach trucks*

ISO 10896-2, *Rough-terrain trucks — Safety requirements and verification — Part 2: Slewing trucks*

3 Terms, definitions and symbols

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 6165, ISO 10896-1, ISO 10896-2 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1.1

zero Y plane

vertical plane which passes through the longitudinal centreline of the machine

[SOURCE: ISO 6746-1:2003, 3.1.1]