SLOVENSKI STANDARD
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Stroji za zemeljska dela - Osnovni tipi - Identifikacija ter pojmi in definicije (ISO/DIS 6165:2021)

Earth-moving machinery - Basic types - Identification and terms and definitions (ISO/DIS 6165:2021)

Erdbaumaschinen - Grundtypen - Identifizierung und Begriffe (ISO/DIS 6165:2021)

Engins de terrassement - Principaux types - Identification et termes et définitions (ISO/DIS 6165:2021)

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01.040.53	Oprema za transport materiala (Slovarji)	Materials handling equipment (Vocabularies)
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Earth-moving machinery — Basic types — Identification and terms and definitions

Engins de terrassement — Principaux types — Identification et termes et définitions

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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).

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For an explanation on 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 the following URL: www .iso .org/ iso/ foreword .html

This document was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*, Subcommittee SC 4, *Terminology, commercial nomenclature, classification and ratings*.

This septh edition cancels and replaces the sixth edition (ISO 6165:2012), which has been technically revised, with the following changes:

— New clauses is added:
  - o 3.13 operator protective structure,
  - o 13.14 canopy,
  - o 3.15 cab,
  - o 4.4.2 minimal tail radius excavator,
  - o 4.13 Vacuum excavator
— Definition about compact tool carrier (4.12) is revised;
— Definition about compactor (4.9) is revised;
— Definition relating to horizontal directional drill is deleted;
— Annex A and B are revised according to the modification text.

Introduction

As stated in the scope, this document establishes the terminology for earth-moving machinery according to the function and configuration. The safety requirements, for most of machine families listed in this document, are provided in series ISO 20474.

Earth-moving machinery — Basic types — Identification and terms and definitions

1 Scope

This document gives terms and definitions and an identification structure for classifying earth-moving machinery designed to perform the following operations:

— excavation;

— loading;

— transportation;

— drilling, spreading, compacting or trenching of earth, rock and other materials, during work, for example, on roads and dams, in quarries and mines and on building sites.

The purpose of this document is to provide a clear means to identify earth-moving machinery according to its function and design configurations and with secondary classifications according to its operating mass and control operator configuration.

Annex A provides a procedure based on the identification structure used by this document to classify the machinery and introduce detailed identifications consistent with the logic implied by the structure.

Annex B provides a hierarchy of the operator control configurations for earth-moving machinery.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

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

— IEC Electropedia: available at https://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

3.1
earth-moving machinery
self-propelled or towed *base machine* (3.9) on wheels (drums or tyres), crawlers or legs, which can have *equipment* (3.11) or *attachment* (3.12), or both, primarily designed to perform excavation, loading, transportation, drilling, spreading, compacting or trenching of earth, rock and other materials

Note 1 to entry: Earth-moving machinery can be of a type either directly controlled by an operator riding or not riding on the machine and indifferently be remote controlled by wired or wireless means with or without direct view on the working area. Moreover, it can operate autonomously or semi-autonomously.

Note 2 to entry: See Annex B for types of operator control configurations.

3.1.1
compact machine
earth-moving machinery (3.1), except for *compact excavators* (4.4.4) and *compact loaders* (4.2.3), having an *operating mass* (3.9) of 4 500 kg or less

3.2
direct control machine
self-propelled *earth-moving machinery* (3.1) where the machine is controlled by an operator in physical contact with the machine

3.2.1
ride-on machine
direct-control machine (3.2) where the control devices are located on the machine and the machine is controlled by a seated or standing operator

3.2.2
non-riding machine
direct-control machine (3.2) where the control devices are located on the machine and the machine is controlled by a pedestrian operator (neither seated nor standing on the machine)

3.3
remote control machine
self-propelled *earth-moving machinery* (3.1) where the machine is controlled by the transmission of signals from a remote control box that is not located on the machine to a receiving unit located on the machine

Note 1 to entry: The remote control can either be wireless or by wire.

Note 2 to entry: Safety requirements for remote operator control systems are given in ISO 15817.

3.3.1
wire control machine
remote control machine (3.3) where the control of the machine is accomplished by signals transmitted through wires from an operator controlled device distant from the machine

Note 1 to entry: Normally, a wire-controlled machine is operated with a direct view on the working area.

3.3.2
wireless control machine
remote control machine (3.3) where the control of the machine is accomplished by signals transmitted through the air from an operator controlled device distant from the machine

Note 1 to entry: A wireless-controlled machine is operated with or without a direct view on the working area.

3.4
autonomous mode
mode of operation in which an *earth-moving machinery* (3.1) performs all machine safety-critical and earth-moving or mining functions related to its defined operations without operator interaction

[SOURCE: ISO 17757:2019, 3.1.3.1, modified. The term “mobile machine” is replaced by ”earth-moving machinery”, and Note 1 to entry is not included here.]

3.4.1
autonomous machine
earth-moving machinery (3.1) intended to operate in *autonomous mode* (3.4) during its normal operating cycle

[SOURCE: ISO 17757:2019, 3.1.3.1, modified. The term “mobile machine” is replaced by ”earth-moving machinery”, and Note 1 to entry is not included here.]

3.4.2
semi-autonomous machine
earth-moving machinery (3.1) intended to operate in *autonomous mode* (3.4) during part of its operating cycle and which requires active control by an operator to complete some of the tasks assigned to the machine

[SOURCE: ISO 17757:2019, 3.1.3.2, modified. The term “mobile machine” is replaced by ”earth-moving machinery”, and Note 1 to entry is not included here.]

3.5
machine family
group of machines designed for the same type of operation

Note 1 to entry: *Earth-moving machinery* (3.1) comprises the following machine families:

— *dozers* (4.1);

— *loaders* (4.2);

— *backhoe loaders* (4.3);

— *excavators* (4.4);

— *trenchers* (4.5);

— *dumpers* (4.6);

— *scrapers* (4.7);

— *graders* (4.8);

— *compactors* (4.9);

— *rollers* (4.10);

— *pipelayers* (4.11);

— *compact tool carriers* (4.12);

— *Vacuum excavator* (4.13).

3.6
machine model
machine type
manufacturer's designation of a *machine family* (3.4)

Note 1 to entry: A machine family can have several models or types which are the manufacturer's type designation of the machine.

3.7
individual machine
machine having a unique identification number for each manufactured machine

Note 1 to entry: The product identification number (PIN) according to ISO 10261 clearly identifies the individual machine.

3.8
operating mass
mass of the *base machine* (3.10), with *equipment* (3.11) and empty *attachment* (3.12) in the most usual configuration as specified by the manufacturer, and with the operator (75 kg), full fuel tank and all fluid systems (i.e. hydraulic oil, transmission oil, engine oil, engine coolant) at the levels specified by the manufacturer and, when applicable, with sprinkler water tank(s) half full

Note 1 to entry: The mass of the operator is not included for non-riding machines.

Note 2 to entry: Ballast mass at delivery can be included if specified by the manufacturer.

[SOURCE: ISO 6016:2008, 3.2.1.]