



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 41100-2021

**Earth-moving machinery and rough-terrain variable-reach
trucks - Design requirements for machines intended to be
driven on road**

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foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules of Standardization Documents"

drafted:

This document is equivalent to ISO 17253:2014 "Design requirements for earth-moving machinery and off-road telehandlers intended for on-road machines":

The Chinese documents that have a consistent correspondence with the international documents normatively cited in this document are as follows:

---GB/T 7593-2008 Symbols for driver control devices and other display devices of motorized industrial vehicles (ISO 3287:

1999, IDT);

---GB/T 8498-2017 Earth-moving machinery basic type identification, terms and definitions (ISO 6165:2012, IDT);

---GB/T 8593:1-2021 Symbols for earth-moving machinery driver operating devices and other display devices Part 1: General symbols

No: (ISO 6405-1:2004, IDT);

---GB/T 8593:2-2021 Symbols for earth-moving machinery driver control devices and other display devices Part 2: Machines, tools

Special symbols for equipment and accessories (ISO 6405-2:2017, IDT);

---GB/T 10913-2005 Determination of the traveling speed of earth-moving machinery (ISO 6014:1986, MOD);

---GB/T 14781-2014 Earth-moving machinery tire-type machinery steering requirements (ISO 5010:2007, IDT);

---GB/T 15706-2012 General Principles of Mechanical Safety Design Risk Assessment and

Risk Reduction (ISO ISO 12100:2010,

IDT);

---GB/T 16937-2020 Earth-moving machinery driver's visual field test method and performance criteria (ISO 5006:2017, IDT);

---GB/T 17921-2010 Earth-moving machinery seat belts and their anchors performance requirements and tests (ISO 6683:2005,

MOD);

---GB/T 18577:1-2008 Definition of dimensions and symbols of earth-moving machinery Part 1: Mainframe (ISO 6746-1:2003,

IDT);

---GB/T 18577:2-2008 Definition of dimensions and symbols of earth-moving machinery Part 2: Working devices and attachments

(ISO 6746-2:2003, IDT);

---GB/T 19929-2014 Performance requirements and test methods for earth-moving machinery crawler-type machine braking systems (ISO 10265:

2008, IDT);

---GB/T 19933:5-2014 Earth-moving machinery cab environment-Part 5: Test method for windshield defrosting system

(ISO 10263-5:2009, IDT);

---GB/T 20418-2011 Earth-moving machinery lighting, signaling and marking lamps and reflectors (ISO 12509:2004, MOD);

---GB/T 21152-2018 Performance requirements and tests for earth-moving machinery wheeled or high-speed rubber crawler braking systems

method(ISO 3450:2011, MOD);

---GB/T 21154-2014 Earth-moving machinery and its working devices and components of the quality measurement method (ISO 6016:2008,

IDT);

---GB/T 21155-2015 Earth-moving machinery driving sound alarm device and front horn test method and performance criteria

(ISO 9533:2010, IDT);

---GB/T 21936-2008 Performance requirements for earth-moving machinery towing devices installed on machines (ISO 10532:1995 and

ISO 10532:1995/Amd:1:2004, IDT);

---GB/T 25399-2010 Agricultural and forestry tractors and mechanical hydraulic joint brake circuits (ISO 5676:1983, MOD);

---GB/T 25607-2010 Definition and requirements for earthmoving machinery protective devices (ISO 3457:2003, IDT);

---GB/T 25617-2010 Visual display device for the operation of earth-moving machinery (ISO 6011:2003, IDT);

---GB/T 25622-2010 Earth-moving machinery driver's manual content and format (ISO 6750:2005, IDT);

---GB/T 25684 (all parts) Earth-moving machinery safety [ISO 20474 (all parts)];

---GB/T 25685:1-2010 Field of view of monitoring mirrors and rear-view mirrors of earth-moving machinery - Part 1: Test methods (ISO 14401-1: 2009, IDT);

---GB/T 25685:2-2010 Field of view of monitoring mirrors and rear-view mirrors of earth-moving machinery - Part 2: Performance criteria (ISO 14401-2: 2009, IDT);

---GB/T 35205:1-2017 Safety requirements and verification of off-road forklifts - Part 1: Telescopic forklifts (ISO 10896-1: 2012, IDT);

Please note that some content of this document may be patented: The issuing agency of this document assumes no responsibility for identifying patents:

Introduction

This document is a Type C standard defined by ISO 12100:

The scope of this document describes the machinery involved and the scope of the hazards, hazardous states or hazardous events involved:

Since the design and manufacture of the machine follow the requirements of Class C standards, when the requirements of Class C standards are different from those of Class A or Class B standards

At the same time, the requirements of Class C standards take precedence over other standards:

Earth-moving machinery and off-road telehandlers occasionally travel around the construction site in and out of the road and in parallel with other vehicles, and their safety

on the construction site

Design and validation are specified in ISO 20474 and ISO 10896-1, but the requirements for driving on the road are not defined, or in the region

and local legislation, rules or codes of practice: Due to the lack of and different requirements in this case, the use of the machine on the road is proposed

time safety requirements:

The purpose of this document is to provide design and verification requirements to ensure a safe level of use on the road for earthmoving machinery and off-road telehandlers:

Earth-moving machinery and off-road telehandlers

Anticipated design requirements for on-highway machines

1 Scope

This document specifies the driver's seated and ride-on earth-moving machinery as defined in ISO 6165 and the off-road telescopic boom as defined in GB/T 35205:1

Requirements for forklift trucks to be expected to travel on the highway:

This document specifies appropriate technical measures to eliminate or reduce significant hazards, hazardous situations and hazards when these machines are driven on the road risk of events:

This document does not apply to the following situations:

- machines on outriggers, for example, walking excavators;
- Hazards associated with the driver's standing operation (riding or non-riding) or remote control of earth-moving machinery/off-road telehandler;
- User requirements, including training, operating license and machine licensing tax;
- local usage restrictions, such as road/bridge capacity;
- Environmental requirements, such as engine emissions, noisy refrigerants or recyclability:

Note: More stringent national standards or other regulations may apply:

2 Normative references

The contents of the following documents constitute indispensable provisions of this document through normative references in the text, among which the dated references are:

documents, only the version corresponding to that date applies to this document; for