



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

GB/T 41101.1-2021

**Earth-moving machinery - Sustainability - Part 1: Terminology,
sustainability factors and reporting**

Issued on: December 31, 2021

Implemented on: July 1, 2022

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

foreword

Introduction

1 Scope

2 Normative references

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 part 1 of GB/T 41101 "Earth-moving Machinery Sustainability": GB/T 41101 has released the following parts:

--- Part 1: Terminology, Sustainability Factors and Reporting;

--- Part 2: Remanufacturing;

--- Part 3: Used machines:

This document is equivalent to ISO 10987:2012 Earthmoving Machinery Sustainability Terminology, Sustainability Factors and Reporting:

The following editorial changes have been made to this document:

--- In order to harmonize with existing standards, the name of the standard has been changed to "Earth-moving Machinery Sustainability Part 1: Terminology, Sustainability Factors and

Report";

--- In order to facilitate the use of the standard, "corresponding words" of additional terms are added in Table C:1 of Appendix C, and "sources" are used in international documents:

Chinese documents with consistency relationship are replaced:

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

Introduction

Sustainability has become a focus of attention for all products worldwide, including

earthmoving machinery: Customers who purchase machines require

information on the sustainability of their work projects: As interest in this issue has grown, many organizations have begun to compile sustainable development

Guide, many earthmoving machinery manufacturers also began to provide relevant information:

Sustainability covers a broad range of social, environmental and economic considerations related to the development, manufacture, service life and end-of-life phases of earthmoving machinery

field:

Areas covered by other standards programs for earthmoving machinery sustainability include test methods, performance guidelines, and means of compliance:

Potential sustainability issues associated with earthmoving machinery include:

- Greenhouse gas/carbon emissions;
- Energy consumption;
- the general process of design, manufacture, machine life, scrap;
- Sustainability communication, training, development management system;
- Machine use training: site managers, operators, maintenance personnel;
- Social aspects: health, safety, comfort, ergonomics;
- Noise and vibration (operator);
- Effects on the environment: noise, dust, ground disturbance, noise and vibration (observers);
- manufacturing and remanufacturing;
- dismantling and recycling;
- Discharge and post-treatment;
- biofuels and petroleum;
- harmful materials:

Other existing earth-moving machinery standards, while not addressing sustainability per se, address many of the areas covered by this document:

- General machine safety: ISO 20474 (all parts) and the safety standards to which it refers;
- Noise: ISO 6393, ISO 6394, ISO 6395 and ISO 6396;

--- Ergonomics: ISO 3411 (driver space), ISO 6682 and ISO 10968 (handling), ISO 11112 (seat) and

other;

---Recyclability: ISO 16714;

---Vibration: ISO 7096 and ISO /T R25398;

--- Electromagnetic compatibility: ISO 13766 (all parts);

--- Training: ISO 7130 and ISO 8152:

GB/T 41101 "Earth-moving Machinery Sustainability" is the basic and universal guide to carry out sustainable activities in the field of earth-moving machinery in my country

The standard is intended to consist of three parts:

--- Part 1: Terminology, sustainability factors and reporting: The purpose is to clarify the general principles of the sustainability of earthmoving machinery, define the possible

Sustainability terms and important sustainability factors for earthmoving machinery, etc:

--- Part 2: Remanufacturing: The purpose is to help remanufacturers establish a consensus on remanufacturing technical specifications, thereby improving remanufactured products:

the quality of:

--- Part 3: Used machines: The purpose is to establish a universal, scientifically reasonable, operable and economical earthmoving machine

Second-hand machinery technical specifications, provide technical guidance for the evaluation of second-hand machinery, and improve the quality of second-hand machinery:

Earthmoving Machinery Sustainability

Part 1: Terminology, Sustainability Factors and Reporting

1 Scope

This document establishes general principles addressing the sustainability of earthmoving machinery as defined by ISO 6165, defines sustainability terms, establishes

Important sustainability factors for earth-moving machinery, with examples of sustainability information reporting formats:

This document applies to the development and manufacturing process, service life and end-of-life of earth-moving machinery:

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, dated citations

documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document:

ISO 5349-2 Mechanical vibration - Measurement and evaluation of human exposure to hand-transmitted vibration - Part 2: Practical guidance for workplace measurements
(Mechanicalvibration-Measurementandevaluationofhumanexposuretohand-transmittedvibration-Part 2:Practicalguidanceformeasurementattheworkplace)

Note: GB/T 14790:2-2014 Mechanical vibration - Measurement and evaluation of human exposure to hand-transmitted vibration - Part 2: Practical guidelines for workplace measurements

(ISO 5349-2:2001, IDT)

ISO 6393 Earth-moving machinery sound power levels Determination of fixed test conditions (Earth-moving machinery-Determinationofsoundpowerlevel-Stationarytestconditions)

Note: GB/T 25612-2010 Determination of Earthmoving Machinery Sound Power Level Fixed Test Conditions (ISO 6393:2008, IDT)

ISO 6394 Earth-moving machinery - Determination of sound pressure levels emitted at the driver's position - Fixed test conditions (Earth-movingmachinery-Determinationofemissionsoundpressurelevelatoperator'sposition-Stationarytestconditions)

Note: GB/T 25613-2010 Test conditions for determination of sound pressure level emitted from the driver's position of earth-moving machinery (ISO 6394:2008, IDT)

ISO 6395 Dynamic test conditions for the determination of sound power levels of earth-moving machinery (Earth-moving machinery-Determinationofsoundpowerlevel-Dynamictestconditions)

Note: GB/T 25614-2010 Dynamic test conditions for determination of sound power level of earthmoving machinery (ISO 6395:2008, IDT)

ISO 6396 Dynamic test conditions for the determination of sound pressure levels emitted at the driver's position of earth-moving machinery (Earth-movingmachinery-Determinationofemissionsoundpressurelevelatoperator'sposition-Dynamictestconditions)