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

GB/T 20448.1-2025

Replacing GB/T 20448.1-2012

**Self-propelled machinery for forestry - Laboratory tests and
performance requirements for roll-over protective structures
(ROPS) - Part 1: General machines**

自行式林业机械 翻滚保护结构 (ROPS) 实验室试验和性能要求 第1部分: 通用
机械

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Section 1 of GB/T 20448 "Laboratory Tests and Performance Requirements for Rollover Protection Structures (ROPS) of Self-Propelled Forestry Machinery".

Parts. GB/T 20448 has published the following parts.

---Part 1: General Machinery;

---Part 2: Machinery with cab and boom mounted on a slewing platform.

This document replaces GB/T 20448.1-2012 "Laboratory Tests and Performance Requirements for Rollover Protective Structures of Self-Propelled Forestry Machinery - Part 1".

Part. General Machinery, compared with GB/T 20448.1-2012, the main technical changes are as follows, except for structural adjustments and editorial modifications.

---Added the requirement for "ROPS labeling" (see Chapter 7).

This document is equivalent to ISO 8082-1:2009 "Laboratory testing and performance requirements for rollover protection structures of self-propelled forestry machinery - Part 1".

Part. General Machinery.

The following minimal editorial changes have been made to this document.

---To harmonize with existing standards, the standard title has been changed to "Laboratory Testing and Protection of Rollover Protection Structures (ROPS) for Self-Propelled Forestry Machinery".

Performance Requirements Part 1: General Machinery;

---Incorporating the content of ISO 8082-1:2009/Amd.1:2021, the relevant clauses are indicated by vertical double margins.

The line (|) is marked.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the National Forestry and Grassland Administration.

This document is under the jurisdiction of the National Forestry Machinery Standardization Technical Committee (SAC/TC61).

Introduction

With the rapid development of my country's forestry industry, self-propelled forestry machinery is being used more and more widely in forestry production. However, due to forestry...

The complexity of the working environment and the structural characteristics of the machinery itself mean that rollover accidents occur frequently. To improve the safety of self-propelled forestry machinery...

Performance, reducing the risk of accidents caused by mechanical rollover during operation, protecting the safety of operators and equipment, and improving the safety performance of forestry machinery.

To reduce the risk of rollover accidents, there is an urgent need to develop "Laboratory Testing and Performance Requirements for Rollover Protection Structures (ROPS) of Self-Propelled Forestry Machinery".

The document, titled "Requirements," aims to standardize the laboratory testing and performance requirements for the tumble protection structure of self-propelled forestry machinery, providing technical support for the design and manufacture of such machinery.

Based on this, we can promote the healthy development of my country's forestry machinery industry.

GB/T 20448, "Laboratory Tests and Performance Requirements for Roll Protection Structures (ROPS) of Self-Propelled Forestry Machinery," is designed to ensure the performance of self-propelled...

Safety performance of forestry machinery during operation, improving the reliability and stability of the machinery, reducing the accident rate, and protecting the safety of workers.

To ensure personal safety and prevent damage to equipment. By establishing laboratory tests and performance requirements for rollover protection structures, guidelines are

developed for the design, manufacture, and application of forestry machinery.

The testing and application provide unified technical specifications, promoting technological progress and product quality improvement in my country's forestry machinery industry.

GB/T 20448 consists of two parts.

---Part 1: General Machinery. This section aims to specify rollover protection structures for general self-propelled forestry machinery under static loads.

Methods for evaluating stress-deformation characteristics.

---Part 2: Machinery with a cab and boom mounted on a slewing platform. This section aims to specify the requirements for machinery with a cab and boom mounted on a slewing platform.

The stress-deformation characteristics of the rollover protection structure (ROPS) of a heavy-lift self-propelled forestry machinery under static loads were evaluated.

method.

Rollover Protection Structure (ROPS) for Self-Propelled Forestry Machinery Laboratory testing and performance requirements Part 1: General Machinery

1 Scope

This document describes the consistent evaluation of the stress-deformation characteristics of self-propelled forestry machinery rollover protection structures (ROPS) under static loads.

This document describes a repeatable method and specifies the performance requirements for typical specimens under this load. It applies to the containerization and transport methods defined in ISO 6814.

Timber harvesters, logging stackers, combined harvesters, combined logging machines, and timber loaders are not suitable for mounting cabs and cranes on slewing platforms.

Heavy boom machinery (see ISO 8082-2 for details).

Note: The requirements and test procedures in this document are the same as those in ISO 3471.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

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

This document.

ISO 148-1 Metallic materials - Charpy impact test - Part 1: Test methods Note. GB/T 229-2020 Metallic materials Charpy impact test method (ISO 148-1:2016, MOD) ISO 898-1 Mechanical properties of fasteners made of carbon steel and alloy steel - Part 1: Bolts, screws and studs with specified performance grades Note. GB/T 3098.1-2010 Mechanical properties of fasteners - Bolts, screws and studs (ISO 898-1:2009, MOD) ISO 898-2 Fasteners - Mechanical properties of fasteners made of carbon steel and alloy steel - Part 2: Nuts with specified performance grades Note. GB/T 3098.2-2015 Mechanical properties of fasteners - Nuts (ISO 898-2:2012, MOD) ISO 3164 Specification for laboratory identification of deformation limit zones for protective structures of earthmoving machinery (Earth-moving) (ume) Note. GB/T 17772-2018 Laboratory qualification of protective structures for earthmoving machinery - Flexural limits (ISO 3164:2013, IDT) Note. GB/T 19365-2012 Forestry Machinery - Mobile and Self-propelled Forestry Machinery - Terminology, Definitions and Classification (ISO 6814:2009, IDT)

3 Terms and Definitions

The following terms, definitions and symbols (see Table 1) apply to this document.