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**Machinery for forestry — Thrown  
object guard — Test method and  
performance criteria**

*Matériel forestier — Protection contre les projections d'objets —  
Méthode d'essai et critères de performance*



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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](http://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](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 15, *Machinery for forestry*.

This second edition cancels and replaces the first edition (ISO 11839:2010), which has been technically revised. It also incorporates the Technical Corrigendum ISO 11839:2010/Cor 1:2012.

The main changes compared to the previous edition are as follows:

- revises the test procedure to a more repeatable and realistic representation of the guarding system.

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](http://www.iso.org/members.html).

## Introduction

Mobile and self-propelled machinery used in forestry and related operations that use powered cutting or grinding attachments can expose the operator to a hazard from thrown cutting or grinding elements, and residual matter created during the cutting or grinding procedures. Guarding meeting the requirements of this document can be incorporated into other operator protective structures (e.g. ROPS, FOPS, OPS) or as provided as an independent guard to provide protection from the hazard from these thrown objects.



# Machinery for forestry — Thrown object guard — Test method and performance criteria

**CAUTION** — The test method specified in this document involves the use of dynamic processes which could lead to a hazardous situation. The test creates projectile shots. Under no circumstances shall the test be performed without the containment structure for the test apparatus in place.

## 1 Scope

This document establishes a laboratory test method and performance requirements for thrown object guards (TOG) that provide operator protection against thrown objects. This applies to mobile and self-propelled machinery used in forestry and related operations including, but not limited to, those defined in ISO 6814. The TOG is intended to provide reasonable protection for the operator on the host machine from powered rotating cutting or grinding elements and residual matter thrown by an attachment on the host machine.

As the tests in the document are dependent upon the mass, velocity, and the cutting or grinding element profile, the TOG meeting the requirements of this document are specific to each cutting or grinding attachment and the host machine model.

This document does not address protection from saw chain shot.

NOTE A separate standard ISO 21876 addresses saw chain shot hazards.

## 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 of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 898-1, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 1: Bolts, screws and studs with specified property classes — Coarse thread and fine pitch thread*

ISO 898-2, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 2: Nuts with specified property classes — Coarse thread and fine pitch thread*

ISO 5353, *Earth-moving machinery, and tractors and machinery for agriculture and forestry — Seat index point*

ISO 9248, *Earth-moving machinery — Units for dimensions, performance and capacities, and their measurement accuracies*

ISO 12100, *Safety of machinery — General principles for design — Risk assessment and risk reduction*

ASTM A-108, *Standard Specification for Steel Bar, Carbon and Alloy, Cold-Finished*

## 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:

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