
**Machinery for forestry — General safety
requirements**

Matériel forestier — Exigences de sécurité générales



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Contents

Page

Foreword	iv
Introduction.....	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	3
4 Safety requirements and/or protective measures.....	3
4.1 General	3
4.2 Safety distances, guards, shields.....	4
4.3 Operator station.....	4
4.4 Access to operator's station and maintenance locations.....	6
4.5 Controls.....	7
4.6 Visibility.....	9
4.7 Lighting.....	10
4.8 Braking systems.....	10
4.9 Steering systems.....	10
4.10 Retrieval, tie-down and machine-lifting devices	10
4.11 Stability.....	11
4.12 Automatic processing systems	11
4.13 Electromagnetic compatibility	11
4.14 Fire risks.....	11
4.15 Noise.....	12
4.16 Vibration	12
4.17 Storage places	13
4.18 Maintenance	13
4.19 Winches	13
4.20 Hydraulic systems.....	13
5 Information for use.....	13
5.1 Operator's manual	13
5.2 Marking.....	15
5.3 Safety signs	16
Annex A (informative) List of significant hazards	17
Bibliography.....	18

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 11850 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 15, *Machinery for forestry*.

This third edition cancels and replaces the second edition (ISO 11850:2003), which has been technically revised.

Introduction

This document is a type-C standard as stated in ISO 12100.

The machinery concerned and the extent to which hazards, hazardous situations or hazardous events are covered are indicated in the Scope of this document.

When requirements of this type-C standard are different from those which are stated in type-A or B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type-C standard.

Machinery for forestry — General safety requirements

1 Scope

This International Standard specifies general safety requirements for self-propelled forestry machines and machines configured as forestry machines. It deals with all significant hazards, hazardous situations and events common to fellers, bunchers, delimbers, forwarders, log loaders, skidders, processors, harvesters, mulchers and multi-function versions of these machine types, as defined in ISO 6814, when used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer.

It does not deal with hazards specific to individual machines, such as those related to specific attachments, and therefore its use will not alone be sufficient to address all significant hazards for a majority of the machines it covers.

It does not deal with hazards related to chain shot, chain breakage on the upper side of the bar, lifting operation, remote control operation, the need for work lights or road safety. For vibration measurement, the test setup and work cycles are not dealt with; nor is the verification method for noise measurement addressed. It is not applicable to hazards related to maintenance or repairs carried out by professional service personnel.

The list of significant hazards dealt with is given in Annex A.

This International Standard is not applicable to machines manufactured before its date of publication.

2 Normative references

The following referenced documents are indispensable for the application 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 2631-1, *Mechanical vibration and shock — Evaluation of human exposure to whole-body vibration — Part 1: General requirements*

ISO 2860, *Earth-moving machinery — Minimum access dimensions*

ISO 2867:2011, *Earth-moving machinery — Access systems*

ISO 3411:2007, *Earth-moving machinery — Physical dimensions of operators and minimum operator space envelope*

ISO 3450, *Earth-moving machinery — Wheeled or high-speed rubber-tracked machines — Performance requirements and test procedures for brake systems*

ISO 3457, *Earth-moving machinery — Guards — Definitions and requirements*

ISO 3600, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Operator's manuals — Content and presentation*

ISO 3767-1, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 1: Common symbols*

ISO 3767-4, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 4: Symbols for forestry machinery*

ISO 3795, *Road vehicles, and tractors and machinery for agriculture and forestry — Determination of burning behaviour of interior materials*

ISO 4413, *Hydraulic fluid power — General rules and safety requirements for systems and their components*

ISO 5010, *Earth-moving machinery — Rubber-tyred machines — Steering requirements*

ISO 5349-2, *Mechanical vibration — Measurement and evaluation of human exposure to hand-transmitted vibration — Part 2: Practical guidance for measurement at the workplace*

ISO 6682, *Earth-moving machinery — Zones of comfort and reach for controls*

ISO 6683, *Earth-moving machinery — Seat belts and seat belt anchorages — Performance requirements and tests*

ISO 6405-1, *Earth-moving machinery — Symbols for operator controls and other displays — Part 1: Common symbols*

ISO 6750, *Earth-moving machinery — Operator's manual — Content and format*

ISO 6814, *Machinery for forestry — Mobile and self-propelled machinery — Terms, definitions and classification*

ISO 8082-1, *Self-propelled machinery for forestry — Laboratory tests and performance requirements for roll-over protective structures — Part 1: General machines*

ISO 8082-2, *Self-propelled machinery for forestry — Laboratory tests and performance requirements for roll-over protective structures — Part 2: Machines having a rotating platform with cab and boom on the platform*

ISO 8083:2006, *Machinery for forestry — Falling-object protective structures (FOPS) — Laboratory tests and performance requirements*

ISO 8084:2003, *Machinery for forestry — Operator protective structures — Laboratory tests and performance requirements*

ISO 9533, *Earth-moving machinery — Machine-mounted audible travel alarms and forward horns — Test methods and performance criteria*

ISO 10263-4, *Earth-moving machinery — Operator enclosure environment — Part 4: Heating, ventilating and air conditioning (HVAC) test method and performance*

ISO 10263-5:2009, *Earth-moving machinery — Operator enclosure environment — Part 5: Windscreen defrosting system test method*

ISO 10265:2008, *Earth-moving machinery — Crawler machines — Performance requirements and test procedures for braking systems*

ISO 10532, *Earth-moving machinery — Machine-mounted retrieval device — Performance requirements*

ISO 10533, *Earth-moving machinery — Lift-arm support devices*

ISO 10570, *Earth-moving machinery — Articulated frame lock — Performance requirements*

ISO 11112, *Earth-moving machinery — Operator's seat — Dimensions and requirements*

ISO 11169, *Machinery for forestry — Wheeled special machines — Vocabulary, performance test methods and criteria for brake systems*

ISO 11512, *Machinery for forestry — Tracked special machines — Performance criteria for brake systems*

ISO 11837, *Machinery for forestry — Saw chain shot guarding systems — Test method and performance criteria*

ISO 11839, *Machinery for forestry — Glazing and panel materials used in operator enclosures for protection against thrown sawteeth — Test method and performance criteria*

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

ISO 13849-1, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design*

ISO 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs*

ISO 14269-2, *Tractors and self-propelled machines for agriculture and forestry — Operator enclosure environment — Part 2: Heating, ventilation and air-conditioning test method and performance*

ISO 14982, *Agricultural and forestry machinery — Electromagnetic compatibility — Test methods and acceptance criteria*

ISO 15818, *Earth-moving machinery — Lifting and tying-down attachment points — Performance requirements*

ISO 15998:2008, *Earth-moving machinery — Machine-control systems (MCS) using electronic components — Performance criteria and tests for functional safety*

ISO 19472:2006, *Machinery for forestry — Winches — Dimensions, performance and safety*

EN 779:2002, *Particulate air filters for general ventilation — Determination of the filtration performance*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12100 and ISO 6814 apply.

4 Safety requirements and/or protective measures

4.1 General

Machinery shall comply with the safety requirements and/or protective measures of this clause. The machine shall also be marked in accordance with 5.2 and carry safety signs in accordance with 5.3.

In addition, the machine shall be designed in accordance with the principles of ISO 12100 for relevant but not significant hazards which are not dealt with by this document.

The operator's manual to be provided with the machine shall comply with 5.1.

Verification of conformity shall be by inspection.