



NSAI
Standards

Irish Standard
I.S. EN ISO 4254-6:2009

Agricultural machinery - Safety - Part 6: Sprayers and liquid fertilizer distributors (ISO 4254-6:2009)

I.S. EN ISO 4254-6:2009

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**Matériel agricole - Sécurité - Partie 6:
Pulvérisateurs et distributeurs d'engrais
liquides (ISO 4254-6:2009)**

**Landmaschinen - Sicherheit - Teil 6:
Pflanzenschutzgeräte (ISO/FDIS 4254-
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This corrigendum becomes effective on 27 October 2010 for incorporation in the three official language versions of the EN.

Ce corrigendum prendra effet le 27 octobre 2010 pour incorporation dans les trois versions linguistiques officielles de la EN.

Die Berichtigung tritt am 27. Oktober 2010 zur Einarbeitung in die drei offiziellen Sprachfassungen der EN in Kraft.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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1 Modification to the Foreword

Replace the 5th, 6th and 7th paragraphs with the three following ones:

"This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of the Machinery Directive 2006/42/EC. It is intended to be used together with EN ISO 4254-1:2009, *Agricultural machinery — Safety — Part 1: General requirements (ISO 4254-1:2008)* and EN 15811:2009, *Agricultural machinery — Guards for moving parts of power transmission — Guard opening with tool (ISO/TS 28923:2007 modified)*.

For relationship with EU Directives, see informative Annex ZA and ZB, which are integral parts of this document.

This standard has been developed to support the Machinery Directive 2006/42/EC. However, other directives can apply to the sprayers such as:

- Pressure Equipment Directives for sprayers where the functioning depends on putting pressure on the spray tank or for sprayers with piping exceeding DN 200 or exceeding the product pressure DN x PS of 2000 for DN between 25 to 200;
- Electromagnetic Compatibility (EMC) Directive for sprayers including electronic functions."

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Landmaschinen - Sicherheit - Teil 6: Pflanzenschutzgeräte (ISO/FDIS 4254-6:2009)

This European Standard was approved by CEN on 26 August 2009.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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Foreword

This document (EN ISO 4254-6:2009) has been prepared by Technical Committee CEN/TC 144 "Tractors and machinery for agriculture and forestry", the secretariat of which is held by AFNOR, in collaboration with Technical Committee ISO/TC 23 "Tractors and machinery for agriculture and forestry".

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2010, and conflicting national standards shall be withdrawn at the latest by March 2010.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 907:1997.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directives.

For relationship with EU Directives, see informative Annex ZA and ZB, which are integral parts of this document.

This standard has been developed to support the Machinery Directive (98/37/EC and 2006/42/EC). However, other directives can apply to the sprayers such as:

- Pressure Equipment Directives for sprayers where the functioning depends on putting pressure on the spray tank or for sprayers with piping exceeding DN 200 or exceeding the product pressure DN x PS of 2000 for DN between 25 to 200;
- Electromagnetic Compatibility (EMC) Directive for sprayers including electronic functions.

This second edition cancels and replaces the first edition (EN 907:1997), which has been technically revised.

The following major changes were introduced:

- revision of the requirements related to the folding/unfolding of the boom in relation to the height of the power lines (5.3.2);
- addition of requirements related to the draining (5.4.3);
- addition of requirements related to the clearance zone for hitching operations (5.11);
- addition of a clause for safe maintenance and servicing on pumps and filters (5.12);
- addition of a noise clause (5.13);
- addition of Annexes ZA and ZB;
- deletion of the requirements related to the guarding of moving parts for power transmission dealt with in EN 15811:— *"Agricultural machinery - Guards for moving parts of power transmission - Guard opening with tool"* (ISO/TS 28923:2007);
- deletion of the requirements related to the handheld spraying devices;

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- deletion of EN 1553:1999 "*Agricultural machinery - Agricultural self-propelled, mounted, semi-mounted and trailed machines - Common safety requirements*" and replacement with EN ISO 4254-1:— "*Agricultural machinery - Safety – Part 1: General requirements*" (ISO 4254-1:2008).

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Annex ZA (informative)

Relationship between this International Standard and the Essential Requirements of EU Directive Machinery Directive 98/37/EC, amended by Directive 98/79/EC

This International Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide one means of conforming to Essential Requirements of the New Approach Directive Machinery Directive 98/37/EC, amended by Directive 98/79/EC.

Once this standard is cited in the Official Journal of the European Union under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the relevant Essential Requirements of that Directive, *except Essential Requirements 1.2.1, 1.2.7, 1.3.1 (for roll-over and tip-over hazard for self-propelled machines), 1.3.7 (limited to moving parts for power transmission), 1.3.8 A, 1.4 (limited to moving parts for power transmission), 1.5.2, 1.5.5, 1.5.9, 1.5.11, 1.5.13 (1st paragraph), 3.2.2 (2nd par., 2nd sentence), 3.3.3 (for self-propelled machines), 3.3.5 (for self-propelled machines), 3.4.3 (operator at the driving station of a self-propelled machine), 3.4.7 for PTO drive transmission shaft, 3.4.8 (for self-propelled machines), 3.5.3 (limited to dust), 3.6.3.a) and associated EFTA regulations.*

WARNING — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

Annex ZB (informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC

This International Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide one means of conforming to Essential Requirements of the New Approach Directive Machinery Directive 2006/42/EC.

Once this standard is cited in the Official Journal of the European Union under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the relevant Essential Requirements of that Directive, *except Essential Requirements 1.1.8 (4th par. 2nd sentence), 1.2.1, 1.3.1 (limited to roll-over and tip-over hazard for self-propelled machines), 1.3.7 (limited to moving parts for power transmission), 1.3.8.1, 1.4 (limited to moving parts for power transmission), 1.5.2, 1.5.5, 1.5.9, 1.5.11, 1.5.13 (1st paragraph), 3.3.3 (for self-propelled machines), 3.3.5 (for self-propelled machines), 3.4.3 (operator at the driving station of a self-propelled machine), 3.4.7 for PTO drive transmission shaft, 3.5.3 (limited to dust), 3.6.3.1 and associated EFTA regulations.*

WARNING — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

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**Agricultural machinery — Safety —
Part 6:
Sprayers and liquid fertilizer distributors**

Matériel agricole — Sécurité —

Partie 6: Pulvérisateurs et distributeurs d'engrais liquides



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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.

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 4254-6 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 6, *Equipment for crop protection*.

This second edition cancels and replaces the first edition (ISO 4254-6:1995), which has been technically revised.

ISO 4254 consists of the following parts, under the general title *Agricultural machinery — Safety*:

- *Part 1: General requirements*
- *Part 5: Power-driven soil-working machines*
- *Part 6: Sprayers and liquid fertilizer distributors*
- *Part 7: Combine harvesters, forage harvesters and cotton harvesters*
- *Part 8: Solid fertilizer distributors*
- *Part 9: Seed drills*
- *Part 10: Rotary tedders and rakes*
- *Part 11: Pick-up balers*
- *Part 12: Rotary disc and drum mowers and flail mowers*

Part 2, *Anhydrous ammonia applicators*, has been withdrawn.

Part 3, *Tractors*, has been cancelled and replaced by ISO 26322, *Tractors for agriculture and forestry — Safety*

Part 4, *Forestry winches*, has been cancelled and replaced by ISO 19472, *Machinery for forestry — Winches — Dimensions, performance and safety*

Introduction

The structure of safety standards in the field of machinery is as follows:

- a) type-A standards (basic standards) giving basic concepts, principles for design, and general aspects that can be applied to machinery;
- b) type-B standards (generic safety standards) dealing with one safety aspect or one type of safeguards that can be used across a wide range of machinery:
 - type-B1 standards on particular safety aspects (e.g. safety distances, surface temperature, noise),
 - type-B2 standards on safeguards (e.g. two-hand control devices, interlocking devices, pressure-sensitive devices, guards);
- c) type-C standards (machinery safety standards) dealing with detailed safety requirements for a particular machine or group of machines.

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

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.

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this part of ISO 4254. These hazards are specific to sprayers and liquid fertilizer distributors.

Significant hazards that are common to all the agricultural machines (self-propelled, mounted, semi-mounted and trailed) are dealt with in ISO 4254-1.

Agricultural machinery — Safety —

Part 6: Sprayers and liquid fertilizer distributors

1 Scope

This part of ISO 4254, to be used together with ISO 4254-1, specifies the safety requirements and their verification for the design and construction of mounted, semi-mounted, trailed and self-propelled agricultural sprayers for use with pesticide products and liquid fertilizer application, designed for use by one operator only. In addition, it specifies the type of information on safe working practices (including residual risks) to be provided by the manufacturer.

This part of ISO 4254 is not applicable to:

- pedestrian-controlled sprayers;
- knapsack sprayers;
- aerial sprayers;
- handheld spraying devices (e.g. spray guns).

When requirements of this part of ISO 4254 are different from those which are stated in ISO 4254-1, the requirements of this part of ISO 4254 take precedence over the requirements of ISO 4254-1 for machines that have been designed and built according the provisions of this part of ISO 4254.

This part of ISO 4254, taken together with ISO 4254-1, deals with all the significant hazards, hazardous situations and events relevant to sprayers and liquid fertilizer distributors when they are used as intended and under the conditions foreseen by the manufacturer (see Clause 4), excepting the hazards arising from:

- automatically actuated height adjustment systems;
- electrostatic phenomena;
- electromagnetic compatibility;
- the environment, other than noise;
- inhalation of spraying chemical products due to a lack of effective methods to maintain breathing air quality inside the cab;
- roll-over and tip-over of self-propelled machines with a ride-on driver;
- vibration (except the declaration);
- dust emission;
- burns;

- moving parts for power transmission except strength requirements for guards and barriers;
- safety and reliability of control systems;
- travelling function of self-propelled machines.

NOTE ISO 14982 specifies test methods and acceptance criteria for evaluating the electromagnetic compatibility of all kind of mobile agricultural machinery.

This part of ISO 4254 is not applicable to sprayers and liquid fertilizer distributors which are manufactured before the date of publication of this document by ISO.

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 4254-1:2008, *Agricultural machinery — Safety — Part 1: General requirements*

ISO 5353:1995, *Earth-moving machinery, and tractors and machinery for agriculture and forestry — Seat index point*

ISO 5681:1992, *Equipment for crop protection – Vocabulary*

ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology*

ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5681 and ISO 12100-1, and the following apply.

3.1

sprayer

appliance for application of pesticide products and liquid fertilizer

3.2

aerial sprayer

sprayer designed to be mounted to a plane or helicopter

4 List of significant hazards

Table 1 gives the significant hazard(s), the significant hazardous situation(s) and hazardous event(s) covered by this part of ISO 4254 that have been identified by risk assessment as being significant for this type of machine, and which require specific action by the designer or manufacturer to eliminate or to reduce the risk.

Attention is drawn to the necessity to verify that the safety requirements specified in this part of ISO 4254 apply to each significant hazard presented by a given machine and to validate that the risk assessment is complete.

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