DRAFT INTERNATIONAL STANDARD ISO/DIS 16119-2

ISO/TC **23**/SC **6** Secretariat: **AFNOR**

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Agricultural and forestry machinery — Sprayers and liquid fertilizer distributors — Environmental protection —

Part 2: Horizontal-boom and similar sprayers

Matériel agricole et forestier — Pulvérisateurs et distributeurs d'engrais liquides — Protection de l'environnement —

Partie 2: Pulvérisateurs à rampe horizontale et similaires

ICS 65.060.40

ISO/CEN PARALLEL PROCESSING

This draft has been developed within the European Committee for Standardization (CEN), and processed under the **CEN-lead** mode of collaboration as defined in the Vienna Agreement.

This draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel five-month enquiry.

Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month approval vote in ISO and formal vote in CEN.

To expedite distribution, this document is circulated as received from the committee secretariat. ISO Central Secretariat work of editing and text composition will be undertaken at publication stage.

Pour accélérer la distribution, le présent document est distribué tel qu'il est parvenu du secrétariat du comité. Le travail de rédaction et de composition de texte sera effectué au Secrétariat central de l'ISO au stade de publication.

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European Foreword

This document (prEN ISO 16119-2:2010) has been prepared by Technical Committee CEN/TC 144 “Tractors and machinery for agriculture and forestry”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

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 Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

This document will supersede EN 12761-2:2001.

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 16119-2 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 6, and by Technical Committee CEN/TC 144, *Tractors and machinery for agriculture and forestry* in collaboration.

ISO 16119 consists of the following parts, under the general title *Agricultural and forestry machinery — Sprayers and liquid fertilizer distributors — Environmental protection*:

— *Part 1: General*

— *Part 2: Horizontal boom sprayers and similar*

— *Part 3: Sprayers for bush and trees and similar*

NOTE Additional specific parts are to be drafted as stated in Annex A.

Agricultural and forestry machinery — Sprayers and liquid fertilizer distributors — Environmental protection —

Part 2:
Horizontal-boom and similar sprayers

1 Scope

This standard specifies requirements and methods for their verification for design and performances of horizontal boom sprayers and similar, as defined in 3.1, with respect to minimizing the risk of environmental contamination.

This standard applies in connection with ISO/DIS 16119-1:2010 which contains general requirements for machinery for pesticide application and liquid fertilizer applicators

NOTE The requirements are based on the test methods given in ISO 5682-2:1997, primarily developed for hydraulic sprayers. For other sprayers, other test methods and/or test criteria may be needed. This has to be a subject for a future investigation and possible amendment of this standard.

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 4102:1984, *Equipment for crop protection — Sprayers — Connection threading*

ISO 4254-6:2009, Agricultural machinery — Safety — Part 6: Sprayers and liquid fertilizer distributors

ISO 4287:1997, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters*

ISO 4288:1996, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Rules and procedures for the assessment of surface texture*

ISO 5682-1:1996, *Equipment for crop protection — Spraying equipment — Part 1: Test methods for sprayer nozzles*

ISO 5682-2:1997, *Equipment for crop protection — Spraying equipment — Part 2: Test methods for hydraulic sprayers*

ISO 5682-3:1996, *Equipment for crop protection — Spraying equipment — Part 3: Test methods for volume/hectare adjustment systems of agricultural hydraulic pressure sprayers*

ISO 9357:1990, *Equipment for crop protection — Agricultural sprayers — Tank nominal volume and filling hole diameter*

ISO 13440:1996, *Equipment for crop protection — Agricultural sprayers — Determination of the volume of total residual*

ISO/DIS 16119-1:2010, *Agricultural and forestry machinery — Sprayers and liquid fertilizer distributors — Environmental protection — Part 1: General*

ISO 21278-1:2008, *Equipment for crop protection -- Induction hoppers -- Part 1: Test methods*

ISO 21278-2:2008, *Equipment for crop protection – Induction hoppers - Part 2: General requirements and performance limits*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/DIS 16119-1:2010 and the following apply.

3.1
horizontal boom sprayer and similar
sprayer designed for the application of pesticides or fertilizers on low plants / crops, in a liquid form. It includes band sprayers. The application is generally directed downwards to the target

3.2
band sprayer
implement or attachment to sprayers which applies liquids in bands or rows for plant protection or fertilization of field crops

4 Requirements

4.1 General

4.1.1 Spray tank

4.1.1.1 Surfaces

Depth of roughness of inner and outer walls of the tank shall be such that Rz ≤ 100 μm as specified in ISO 4287, and measured according to ISO 4288.

4.1.1.2 Filling

Filling devices shall be designed to avoid any return of liquid from the tank to the filling supply.

The filling hole diameter shall comply with ISO 9357. The opening lid shall be tightly sealed to avoid spillage.

The total tank volume shall be at least 5 % more than its nominal volume. Tanks with nominal volume greater than 200 l shall have a nominal volume which is a multiple of 100 l.

Strainers shall have a minimum depth *d* as given in Table 1 and measured according to Figure 1.

Strainers shall be installed in filling openings and shall have a mesh size less than 2 mm. Also any gap(s) between the tank filling hole and the strainer shall not exceed 2 mm (see Figure 1).

The filling capacity of the tank with strainer when filled with water shall be at least 100 l/min for tanks with a nominal volume of 100 l or more. For tanks with a nominal volume less than 100 l, it shall be possible to fill the tank within 1 min.

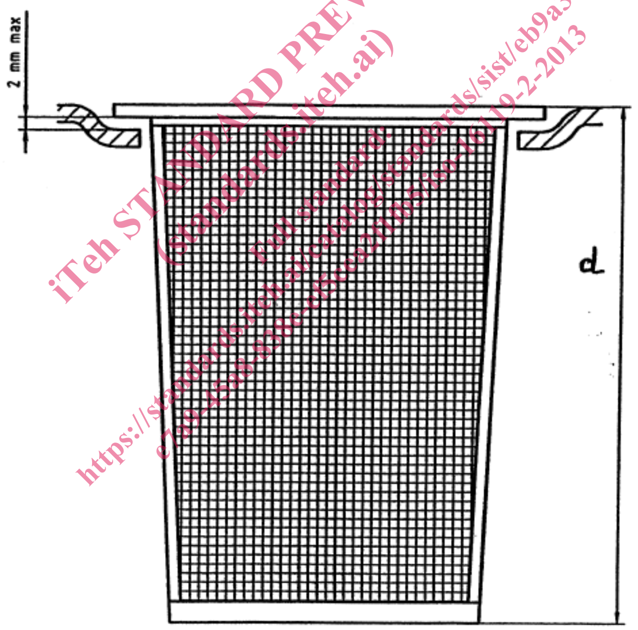
Chemical induction hopper shall comply with ISO 21278-2.

Table 1 — Minimum depth of strainers

Nominal tank capacity (*C*) L	**Minimum depth** [a] (*d*) mm
$C \leq 150$	60
$150 < C \leq 400$	100
$400 < C \leq 600$	150
$C > 600$	250

[a] measured from the upper edge of the strainer down to its bottom

Dimensions in millimetres



Key

d Minimum depth

Figure 1 — Determination of the depth of the strainer and width of gap(s)

4.1.1.3 Emptying

4.1.1.3.1 Residual volume

The volume of total residual as defined in 2.1 of ISO 13440:1996 shall not exceed 0,5 % of the nominal tank volume plus 2 l per metre of the boom.

The volume of total residual shall be determined in accordance with ISO 13440.

