

STN	Poľnohospodárske a lesnícke stroje Kontrola postrekovačov v prevádzke Časť 4: Pevné a polomobilné postrekovače (ISO 16122-4: 2024)	STN EN ISO 16122-4 27 5005
------------	---	--

Agricultural and forestry machines - Inspection of sprayers in use - Part 4: Fixed and semi-mobile sprayers (ISO 16122-4:2024)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 02/26

Obsahuje: EN ISO 16122-4:2025, ISO 16122-4:2024

Oznámením tejto normy sa ruší
STN EN ISO 16122-4 (27 5005) zo septembra 2015

141972

Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2026
Slovenská technická norma a technická normalizačná informácia je chránená zákonom č. 60/2018 Z. z. o technickej normalizácii
v znení neskorších predpisov.

EUROPEAN STANDARD

EN ISO 16122-4

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2025

ICS 65.060.40

Supersedes EN ISO 16122-4:2015

English Version

Agricultural and forestry machines - Inspection of sprayers in use - Part 4: Fixed and semi-mobile sprayers (ISO 16122-4:2024)

Matériel agricole et forestier - Contrôle des
pulvérisateurs en service - Partie 4: Pulvérisateurs
fixes et semi-mobiles (ISO 16122-4:2024)

Land- und Forstmaschinen - Kontrolle von in Gebrauch
befindlichen Pflanzenschutzgeräten - Teil 4: Fest
installierte und teilbewegliche Geräte (ISO 16122-
4:2024)

This European Standard was approved by CEN on 29 December 2024.

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-CENELEC 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-CENELEC Management Centre has the same status as the official versions.

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



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN ISO 16122-4:2025 (E)

Contents	Page
European foreword.....	3
Annex ZA (informative) Relationship between this European Standard and the essential health and safety and environmental requirements of Directive 2009/128/EC.....	4

European foreword

This document (EN ISO 16122-4:2025) has been prepared by Technical Committee ISO/TC 23 "Tractors and machinery for agriculture and forestry" in collaboration with Technical Committee CEN/TC 144 "Tractors and machinery for agriculture and forestry" the secretariat of which is held by AFNOR.

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 April 2026, and conflicting national standards shall be withdrawn at the latest by April 2026.

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

This document supersedes EN ISO 16122-4:2015.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Endorsement notice

The text of ISO 16122-4:2024 has been approved by CEN as EN ISO 16122-4:2025 without any modification.

EN ISO 16122-4:2025 (E)

Annex ZA (informative)

Relationship between this European Standard and the essential health and safety and environmental requirements of Directive 2009/128/EC

This European Standard has been prepared under Commission's standardization request "M/435 Mandate to CEN, CENELEC and ETSI for the development of a standards on inspection of pesticide application equipment in use" to provide one voluntary means of conforming to **health and safety and environmental** requirements of the Directive 2009/128/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for Community action to achieve the sustainable use of pesticides [O] L 309].

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in [Table ZA.1](#) confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding **health and safety and environmental** requirements, of that Directive and associated EFTA regulations.

Table ZA.1 — Correspondence between this European Standard and annex II of EU Directive 2009/128/EC [O] L 309]

Health and safety and environmental requirements of Directive 2009/128/EC	Clause(s)/sub-clause(s) of this EN	Remarks/Notes
Annex II — The pesticide application equipment must function reliably and be used properly for its intended purpose ensuring that pesticides can be accurately dosed and distributed.	4.2 , 4.3 , 4.4 , 4.5 , 4.6 , 4.7 , 4.8 , 4.9 , 4.10 , 4.11 , 4.12	
— The equipment must be in such a condition as to be filled and emptied safely, easily and completely and prevent leakage of pesticides.	4.2.1 , 4.2.2 , 4.5.1 , 4.5.2 , 4.5.4 , 4.5.5 , 4.5.6 , 4.5.7	
— It must permit easy and thorough cleaning.	4.5.8 , 4.5.9 , 4.5.2 , 4.13	
— It must also ensure safe operations, and be controlled and capable of being immediately stopped from the operator's seat.	4.5.4 , 4.6.1 , 4.6.2 , 4.6.3 , 4.8.2 , 4.10.1 , 4.12.1	
— Where necessary, adjustments must be simple, accurate and capable of being reproduced.	4.6 , 4.9.2.3 , 4.9.3.2 , 4.9.3.3 , 4.9.4.2 , 4.10.2	
1. Power transmission parts	4.1	

Health and safety and environmental requirements of Directive 2009/128/EC	Clause(s)/sub-clause(s) of this EN	Remarks/Notes
2. Pump	4.2.2 , 4.3 .	
3. Agitation	4.4 .	
4. Spray liquid tank	4.2.1 , 4.2.2 , 4.5	
5. Measuring systems, control and regulation systems	4.6 , 4.9.2.5 , 4.9.3.5 , 4.9.4 , 4.10	
6. Pipes and hoses	4.2.1 , 4.2.2 , 4.7	
7. Filtering	4.8	
8. Spray boom	4.9.2	
9. Nozzles	4.9.2.2.2 , 4.11.1 , 4.11.2	
10. Distribution	4.11.2 , 4.11.3 , 4.12.2	
11. Blower	4.10	

WARNING 1 Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 Other Union legislation may be applicable to the product(s) falling within the scope of this standard.



International Standard

ISO 16122-4

Agricultural and forestry machinery — Inspection of sprayers in use —

Part 4: Fixed and semi-mobile sprayers

Matériel agricole et forestier — Contrôle des pulvérisateurs en service —

Partie 4: Pulvérisateurs fixes et semi-mobiles

**Second edition
2024-12**

ISO 16122-4:2024(en)**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2024

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

ISO 16122-4:2024(en)**Contents**

Page

Foreword	v
Introduction	vii
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Requirements and method of verification	1
4.1 General.....	1
4.2 Leaks and dripping.....	2
4.2.1 Static leaks.....	2
4.2.2 Dynamic leaks.....	2
4.2.3 Spraying and dripping on parts.....	2
4.3 Pump(s).....	2
4.3.1 Capacity.....	2
4.3.2 Pulsations.....	3
4.3.3 Air chamber.....	3
4.4 Spray mix agitation.....	3
4.4.1 Hydraulic.....	3
4.4.2 Mechanical.....	3
4.5 Spray tank(s).....	4
4.5.1 Lid.....	4
4.5.2 Tank filling strainer(s).....	4
4.5.3 Pressure compensation.....	4
4.5.4 Tank content indicator(s).....	4
4.5.5 Tank emptying.....	4
4.5.6 Tank filling.....	4
4.5.7 Induction hopper.....	4
4.5.8 Cleaning device for plant protection product containers.....	5
4.5.9 Cleaning equipment.....	5
4.6 Measuring systems, controls and regulation systems.....	5
4.6.1 General.....	5
4.6.2 Pressure indicator for spray liquid.....	5
4.6.3 Other measuring devices.....	6
4.6.4 Pressure adjusting devices.....	6
4.6.5 Direct injection systems.....	6
4.7 Lines (pipes and hoses).....	7
4.7.1 Lines.....	7
4.8 Filters.....	7
4.8.1 Filter presence.....	7
4.8.2 Isolating device.....	7
4.8.3 Filter insert changeability.....	7
4.9 Application unit.....	7
4.9.1 Dripping.....	7
4.9.2 Horizontal spray booms.....	7
4.9.3 Vertical spray boom.....	9
4.9.4 Spray guns and lances.....	10
4.10 Blower.....	10
4.10.1 Condition.....	10
4.10.2 Adjustability.....	10
4.11 Distribution.....	10
4.11.1 Uniformity of spray jet.....	10
4.11.2 Nozzle output.....	11
4.11.3 Spray distribution measurement on a patternator (optional).....	11
4.11.4 Optional vertical distribution information.....	11
4.12 Autonomous application units.....	11

ISO 16122-4:2024(en)

4.12.1	Drive system	11
4.12.2	Travel speed spray robots	12
4.13	Cleaning equipment	12
5	Test methods	12
5.1	Test facilities and equipment	12
5.1.1	General	12
5.1.2	Test facilities	12
5.2	Spray agitation pumps	12
5.2.1	Pump capacity test	12
5.2.2	Pump pulsations	14
5.3	Sprayer's pressure indicators	14
5.3.1	Specification of pressure indicators used for verification	14
5.3.2	Verification method of the sprayer pressure indicator	14
5.4	Flow meters for controlling the volume/area rate	15
5.4.1	General	15
5.4.2	Operating procedure No. 1: Verification by nozzle flow rate measurement	15
5.4.3	Operating Procedure No. 2: Verification by installing a calibrated flow meter in the circuit of the sprayer	15
5.5	System for controlling forward speed	15
5.6	Uniformity of the transverse volume distribution with a horizontal patternator	15
5.6.1	Specification of the horizontal patternators used for verification	15
5.6.2	Calculation of coefficient of variation (C_V)	16
5.6.3	Verification method of the uniformity of the transverse distribution	16
5.6.4	Verification method of spray gun/lance flow rate	16
5.7	Flow rate of the spray nozzles	16
5.7.1	General	16
5.7.2	Measurement with nozzles fitted on the sprayer	17
5.7.3	Measurement with nozzles removed from the sprayer	17
5.8	Pressure drop	17
5.9	Pressure variation when the sections are closed	17
5.10	Pressure variation when the spray is switched off	17
5.11	Accuracy of direct injection systems	17
5.12	Pressure distribution	18
	Bibliography	19

ISO 16122-4:2024(en)**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 document 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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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.

This document was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 6, *Equipment for crop protection*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 144, *Tractors and machinery for agriculture and forestry*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 16122-4:2015), which has been technically revised.

The main changes are as follows:

- removed errors and resolve contradictions to the ISO 16119 series which specifies environmental requirements for new sprayers;
- updated the normative references;
- modified the terms and definitions;
- modified requirements on filling high capacity spray-tanks during leak test;
- modified tank filling strainer/filling hole;
- modified tank emptying;
- modified pressure indicators;
- modified diameter analogue pressure indicators;
- modified maximum error flow-meters for controlling the volume/hectare rate;
- modified [Figure 1](#);
- modified dripping;
- modified spray guns and lances;

ISO 16122-4:2024(en)

— modified pump capacity test.

A list of all parts in the ISO 16122 series can be found on the ISO website.

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.

ISO 16122-4:2024(en)**Introduction**

There are two main reasons for the inspection of sprayers:

- reducing the potential risk of environmental contamination by plant protection products;
- good control of the pest with the minimum possible input of plant protection product.

In order to use plant protection products in agricultural production safely, it is necessary to define the requirements and test methods for sprayers in use. This is a relevant step after having standardized minimum requirements for new sprayers, in respect of safety hazards (see ISO 4254-6) and potential risks of environmental contamination (see ISO 16119 series).

Standardising the requirements and methods for inspection of sprayers in use takes into consideration not only the original performance of the sprayer but also its use, care and maintenance. This is a logical link to ensure the continued benefit arising from the supply of new sprayers of good quality.

The inspection of sprayers in use can be a mandatory requirement or adopted on a voluntary basis. In both cases further requirements, outside the scope of this document, are necessary for the management of inspections. These include, for example, requirements for the competence of persons carrying out inspections and the frequency of inspections.

The terms and definitions for specific sprayers are given in the relevant specific parts.

NOTE National or local regulations concerning the qualifications and competence of inspectors can apply.

Agricultural and forestry machinery — Inspection of sprayers in use —

Part 4: Fixed and semi-mobile sprayers

1 Scope

This document, when used together with ISO 16122-1:2024, specifies the requirements and test methods for the inspection of fixed and semi-mobile sprayers, when in use.

The requirements relate mainly to the condition of the sprayer with respect to its potential risk for the environment and its performance to achieve good application.

NOTE Requirements for the protection of inspectors during an inspection are given in ISO 16122-1:2024.

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 5681:2020, *Equipment for crop protection — Vocabulary*

ISO 5682-2:2017, *Equipment for crop protection — Spraying equipment — Part 2: Test methods to assess the horizontal transverse distribution for hydraulic sprayers*

ISO 12809:2020, *Crop protection equipment — Reciprocating positive displacement pumps and centrifugal pumps — Test method*

ISO 16122-1:2024, *Agricultural and forestry machinery — Inspection of sprayers in use — Part 1: General*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN