



SLOVENSKI STANDARD
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Oprema za zaščito poljščin - Nahrbtni škropilniki - 3. del: Preverjanje delovanja nahrbtnih škropilnikov (ISO/DIS 19932-3:2022)

Equipment for crop protection - Knapsack sprayers - Part 3: Inspection of knapsack sprayers in use (ISO/DIS 19932-3:2022)

Pflanzenschutzgeräte - Tragbare Geräte - Teil 3: Kontrolle von in Gebrauch befindlichen Geräten (ISO/DIS 19932-3:2022)

Matériel de protection des cultures - Pulvérisateurs à dos - Partie 3: Contrôle des pulvérisateurs portables à dos en service (ISO/DIS 19932-3:2022)

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Equipment for crop protection — Knapsack sprayers — Part 3: Inspection of knapsack sprayers in use

*Matériel de protection des cultures — Pulvérisateurs à dos —**Partie 3: Contrôle des pulvérisateurs portables à dos en service*

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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).

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

A list of all parts in the ISO 19932 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.

Introduction

There are three main reasons for inspection of the use of knapsack sprayers, which are the most widely used means worldwide of applying plant protection products (PPPs):

- less potential risk to the operator;
- less potential risk of environmental contamination by PPPs; and
- good control of the pest with the minimum possible input of PPPs.

In order to use PPPs in agricultural production safely, the requirements and test methods for knapsack sprayers in use should be defined. This is a relevant step after having standardized minimum requirements for new knapsack sprayers, in respect of safety hazards and potential risks of environmental contamination (see ISO 19932-1:202X and ISO 19932-2:202X).

Standardizing 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 the 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.

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

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Equipment for crop protection — Knapsack sprayers —

Part 3: Inspection of knapsack sprayers in use

1 Scope

This document specifies the requirements and test methods for inspection of the use of knapsack sprayers carried on the back or shoulder of the operator for use with plant protection products (PPPs).

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

It is applicable to lever-operated knapsack sprayers, knapsack compression sprayers and knapsack sprayers driven by an engine or electric motor using hydraulic pressure atomisation of the spray liquid, intended for use primarily in agriculture, forestry and horticulture, with a nominal volume of more than 6,0 l.

This document does not apply to

- knapsack combustion engine-driven air-blast sprayers, which are covered in ISO 28139:2019/Amd 1:20XX.
- controlled droplet application equipment utilizing rotary atomisers, or
- portable application equipment for spatial application (such as foggers).

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.

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

ISO 16122-2:2015,¹⁾ *Agricultural and forestry machinery — Inspection of sprayers in use — Part 2: Horizontal boom sprayers*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5681:2020 and the following 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>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

knapsack sprayer

self-contained sprayer carried on the operator's back or shoulder by means of straps or a strap

1) Under revision

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4 Requirements and method of verification

4.1 General requirements

4.1.1 A calibrated pressure indicator, measuring jug/cylinder (at least 1 l capacity and scale graduations at least every 20 ml), a rod of 3 mm diameter and measuring tape (or similar) of at least 100 mm length and accurate to $\pm 0,5$ mm shall be used for the tests.

4.1.2 There shall be no exposure to hazardous substances during the inspection. The sprayer shall be depressurized, empty (no visible puddles in the spray tank) and internally and externally clean to allow safe inspection.

Compliance shall be checked by inspection.

4.1.3 The sprayer shall have no obvious serious damage that would cause failure (such as holes or cracks in the tank, severely abraded hoses).

Compliance shall be checked by inspection.

4.1.4 The sprayer shall be equipped with a means for lifting and carrying the sprayer.

Compliance shall be checked by an inspection and function test.

4.2 Harness

4.2.1 A harness shall be provided for all sprayers so that it shall be possible for one person to pick up, to carry and to put down the sprayer.

Compliance shall be checked by an inspection and function test.

4.2.2 If a quick-release mechanism is provided, it shall be possible to open it under load and release the machine using only one hand.

Compliance shall be checked by an inspection and function test.

4.2.3 Load bearing straps shall not be damaged or frayed sufficient to compromise the function to provide comfort and safety to the operator.

Compliance shall be checked by inspection.

4.2.4 Any strap/harness fixing points shall be secure.

Compliance shall be checked by inspection.

4.3 Spray tank

4.3.1 It shall be possible to visually determine the spray tank filling level of the sprayer with a minimum resolution of 1 l.

Compliance shall be checked by inspection.

4.3.2 With the sprayer filled with water to the nominal volume and the tank lid closed, the sprayer shall remain upright when placed on a flat horizontal surface and not leak from any part — both in the vertical position and when held inclined at approximately 45° forwards — and shall not spill liquid