#### SLS ISO 5682 PART 1: 2018 (ISO 5682-1: 2017) UDC 66.069.32

# SPRAYING EQUIPMENT PART 1: TEST METHODS FOR SPRAYER NOZZLES

SRI LANKA STANDARDS INSTITUTION

#### Sri Lanka Standard SPRAYING EQUIPMENT PART 1: TEST METHODS FOR SPRAYER NOZZLES

SLS ISO 5682 PART 1: 2018 (ISO 5682-1: 2017)

Gr. Q

Copyright Reserved
SRI LANKA STANDARDS INSTITUTION
17, Victoria Place,
Elvitigala Mawatha,
Colombo 08.
Sri Lanka.

SLS ISO 5682 PART 1: 2018 (ISO 5682-1: 2017)

#### Sri Lanka Standard SPRAYING EQUIPMENT PART 1: TEST METHODS FOR SPRAYER NOZZLES

#### NATIONAL FOREWORD

This Sri Lanka Standard was approved by the Sectoral Committee on Agriculture and was authorized for adoption and publication as a Sri Lanka Standard by the Council of the Sri Lanka Standards Institution on 2018-08-10.

This Sri Lanka Standard is identical with **ISO 5682-1: 2017** Equipment for crop protection - Spraying equipment - Part 1: Test methods for sprayer nozzles, published by the International Organization for Standardization (ISO).

**ISO 5682-1: 2017** specifies test methods to assess the performance of sprayer nozzles with the exception of droplet characteristics.

#### **Terminology and conventions**

The text of the International Standard has been accepted as suitable for publication, without deviation, as a Sri Lanka Standard. However, certain terminology and conventions are not identical with those used in Sri Lanka Standards. Attention is therefore drawn to the following:

- a) Wherever the words "International Standard" appear referring to this standard, they should be interpreted as "Sri Lanka Standard".
- b) The comma has been used throughout as a decimal marker. In Sri Lanka Standards it is the current practice to use a full point on the baseline as the decimal marker.
- c) Wherever page numbers are quoted, they are ISO page numbers.

The test temperature adopted in Sri Lanka is  $27 \pm 2$   $^{0}$ C and relative humidity 65 + 5 per cent is recommended.

### INTERNATIONAL STANDARD

SLS ISO 5682-1: 2018 **ISO 5682-1** 

Third edition 2017-05

# Equipment for crop protection — Spraying equipment —

Part 1:

Test methods for sprayer nozzles

Matériel de protection des cultures — Équipement de pulvérisation — Partie 1: Méthodes d'essai des buses de pulvérisation



Contents						
Fore	eword		v			
1	Scop	Scope				
2	Normative references					
3	Terms and definitions					
4		suring equipment				
	4.1 4.2	General Horizontal patternator				
	4.2	4.2.1 General				
		4.2.2 Groove characteristics				
		4.2.3 Upper part of the groove walls				
		4.2.4 Overall dimensions	6			
		4.2.5 Traversing systems	6			
	4.3	Distance				
	4.4	Pressure	-			
	4.5	Time				
	4.6 4.7	Flow rateAngle				
	4.7	Temperature and humidity				
	4.9	Volume and mass				
	4.10	Air pressure				
	4.11	Standard laboratory horizontal spray boom	7			
5	Gene	eral test conditions	8			
3	5.1					
	5.2	Test liquids				
		5.2.1 Water				
		5.2.2 Abrasive liquid				
	5.3	Temperature and relative humidity	9			
	5.4	Nozzle flow rate setting				
6	Determination of sprayer nozzle characteristics					
	6.1	Nozzle sampling				
		6.1.1 General				
	6.0	6.1.2 Nozzle samples				
	6.2	Nozzle flow rate uniformity6.2.1 General				
		6.2.2 Test liquid				
		6.2.3 Nozzle flow rate setting				
		6.2.4 Measurements				
		6.2.5 Results				
	6.3	Nozzle flow rate as a function of pressure adjustments				
		6.3.1 General				
		6.3.2 Test liquid				
		6.3.3 Nozzle flow rate settings				
		6.3.4 Measurements 6.3.5 Results				
	6.4	6.3.5 Results Spray distribution on a horizontal patternator				
	0.1	6.4.1 General				
		6.4.2 General test conditions				
		6.4.3 Test liquid				
		6.4.4 Nozzle flow rate settings				
		6.4.5 Nozzle orientation				
		6.4.6 Nozzle height				
		6.4.7 Measurements	15			

iii

## SLS ISO 5682-1: 2018 ISO 5682-1:2017(E)

		6.4.8	Results			
	6.5	Nozzle	flow rate and distribution changes due to abrasion (accelerated wear test)	16		
		6.5.1	General			
		6.5.2	Test liquid	16		
		6.5.3	Nozzle flow rate setting	16		
		6.5.4	Abrasion test duration	16		
		6.5.5	Measurements			
		6.5.6	Results	17		
	6.6	Spray a	ingle	17		
7	Test report					
Annex A (informative) Applicable tests by nozzle type						
Annex B (informative) Horizontal patternator						
Annex	<b>c</b> C (info	rmative	e) Nozzle spray angle, spacing and height relationships for horizontal			
	patte	rnator to	esting	25		
Annex D (normative) Specification of the aluminium oxide						
Annex E (informative) Model test report for nozzles in accordance with ISO 5682-1  Annex F (informative) Reporting results for cone nozzles						
					Annex	Annex G (informative) Standard spray boom for testing multiple nozzles
Biblio	Rihliogranhy					

SLS ISO 5682-1: 2018 **ISO 5682-1:2017(E)** 

#### 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 <a href="www.iso.org/directives">www.iso.org/directives</a>).

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. Details of any patent rights identified during the development of the document will be in the introduction and/or on the ISO list of patent declarations received (see <a href="https://www.iso.org/patents">www.iso.org/patents</a>).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on 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 the following URL: <a href="https://www.iso.org/iso/foreword.html">www.iso.org/iso/foreword.html</a>.

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

This third edition cancels and replaces the second edition (ISO 5682-1:1996), which has been technically revised as follows:

- clarity for the construction of the patternator;
- addition of a multiple nozzle setup to nozzle test methods;
- broadening of the scope of nozzle types covered;
- removal of drop size measurement using a Petri dish;
- clarification on the methods;
- clarification on sampling;
- update of instrumentation;
- several new informative annexes.

A list of all the parts in the ISO 5682 series can be found on the ISO website.