
Namakalna oprema - Varnostne naprave za dodajanje pesticidov preko namakalnega sistema - 1. del: Mali plastični ventili za dodajanje pesticidov preko namakalnega sistema (ISO 13693-1:2013)

Irrigation equipment - Safety devices for chemigation - Part 1: Small plastics valves for chemigation (ISO 13693-1:2013)

Bewässerungsausrüstung - Sicherheitseinrichtungen für Düngemittelzusätze - Teil 1: Kleine Kunststoffventile für den Düngemittelzusatz (ISO 13693-1:2013)

Matériel d'irrigation - Dispositifs de sécurité pour l'application de produits chimiques par irrigation - Partie 1: Petites vannes en matière plastique pour l'application de produits chimiques par irrigation (ISO 13693-1:2013)

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65.060.35	Namakalna in drenažna oprema	Irrigation and drainage equipment
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Irrigation equipment - Safety devices for chemigation - Part 1: Small plastics valves for chemigation (ISO 13693- 1:2013)

Matériel d'irrigation - Dispositifs de sécurité pour
l'application de produits chimiques par irrigation -
Partie 1: Petites vannes en matière plastique pour
l'application de produits chimiques par irrigation (ISO
13693-1:2013)

Bewässerungsausrüstung - Sicherheitseinrichtungen
für Düngemittelzusätze - Teil 1: Kleine
Kunststoffventile für den Düngemittelzusatz (ISO
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European foreword

The text of ISO 13693-1:2013 has been prepared by Technical Committee ISO/TC 23 “Tractors and machinery for agriculture and forestry” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 13693-1:2017 by Technical Committee CEN/TC 334 “Irrigation techniques” the secretariat of which is held by UNE.

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of an identical text or by endorsement, at the latest by September 2017, and conflicting national standards shall be withdrawn at the latest by September 2017.

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.

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INTERNATIONAL
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ISO
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**Irrigation equipment — Safety devices
for chemigation —**

**Part 1:
Small plastics valves for chemigation**

*Matériel d'irrigation — Dispositifs de sécurité pour l'application de
produits chimiques par irrigation —*

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*Partie 1: Petites vannes en matière plastique pour l'application de
produits chimiques par irrigation*

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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 13693-1 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 18, *Irrigation and drainage equipment and systems*.

ISO 13693 consists of the following parts, under the general title *Irrigation equipment — Safety devices for chemigation*:

— *Part 1: Small plastics valves for chemigation*

Chemigation valve assemblies from DN 75 to DN 350 are to form the subject of a future part 2.

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Irrigation equipment — Safety devices for chemigation —

Part 1: Small plastics valves for chemigation

1 Scope

This part of ISO 13693 specifies the general requirements and test methods for small plastics-bodied valves used for chemigation, hereinafter referred to as “the device”, intended for operation in irrigation pipe systems which may contain fertilizers and chemicals of the type and concentration used in agriculture.

It is applicable to controllable safety devices (also known as backflow preventers) with a reduced pressure zone (RPZ), intended to prevent backflow by back-siphonage or backpressure of irrigation water into an upstream potable water distribution system, whenever the pressure in the latter is lower than that in the system located downstream.

It is applicable to such devices of nominal size up to and including DN 50 (2”), with a nominal pressure of PN10, that are capable of working without modification or adjustment

- at any pressure up to 1 MPa (10 bar)
- with any pressure variation up to 1 MPa (10 bar) and
- in permanent duty at temperatures up to 45 °C and for 1 h at 65 °C.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 7-1, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation*

ISO 9635-1, *Agricultural irrigation equipment — Irrigation valves — Part 1: General requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 9635-1 and the following apply.

3.1

controllable safety device with a reduced pressure zone

controllable safety device with RPZ

device containing two independently-acting *check valves* (3.7) together with a hydraulically operated, mechanically independent pressure relief valve located between the check valves

3.2

backflow

flow against the intended direction of flow

3.3

back-siphonage

backflow (3.2) due to a reduction in system pressure, which causes a sub-atmospheric pressure at a site in the system

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3.4

backpressure

elevation above the supply pressure of the pressure downstream in a piping system which could cause a reversal of the flow from its intended direction

3.5

nominal pressure

PN
maximum static water pressure, immediately upstream of a small plastics valve used for *chemigation* (3.6), at which the valve is required to operate

3.6

chemigation

application of any chemical through an irrigation system

3.7

check valve

valve which automatically opens by fluid flow in a defined direction and which automatically closes to prevent fluid flow in the reverse direction

4 Classification

The nominal and connection sizes of the device shall be in accordance with [Table 1](#).

Table 1 – Connection sizes of threaded and flanged devices

Nominal size DN, mm	8	10	15	20	25	32	40	50
Nominal diameter of threaded connections (in accordance with ISO 7-1), inches	1/4	3/8	1/2	3/4	1	1¼	1½	2
Nominal diameter of flanged connections, mm	—	—	—	—	—	—	40	50

5 Designation

The device shall be designated as follows:

- type;
- nominal size (DN) (see [Table 1](#));
- nominal pressure (PN);
- connection type;
- type of plastics material (generic);
- reference to this part of ISO 13693.

6 Materials

The manufacturer shall state, in the technical and sales literature on the device, the types of materials from which the device is made.

The device shall be corrosion-resistant.

The materials from which the device is manufactured shall be compatible with chemicals normally used in irrigation systems.