SLOVENSKI STANDARD
SIST EN 61770:2009/A12:2022

01-september-2022

Električne naprave, priključene na vodovod - Preprečevanje povratnega vodnega udara in odpovedi cevnega sestava - Dopolnilo A12

Electric appliances connected to the water mains - Avoidance of backsiphonage and failure of hose-sets

Elektrische Geräte zum Anschluss an die Wasserversorgungsanlage - Vermeidung von Rücksaugung und des Versagens von Schlauchsätzen

Appareils électriques raccordés au réseau d'alimentation en eau - Exigences pour éviter le retour d'eau par siphonnage et la défaillance des ensembles de raccordement

Ta slovenski standard je istoveten z: **EN 61770:2009/A12:2022**

ICS:

91.140.60	Sistemi za oskrbo z vodo	Water supply systems
97.030	Električni aparati za dom na splošno	Domestic electrical appliances in general

SIST EN 61770:2009/A12:2022 **en,fr**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61770:2009/A12

June 2022

ICS 91.140.60; 97.030

English Version

Electric appliances connected to the water mains - Avoidance of backsiphonage and failure of hose-sets

Appareils électriques raccordés au réseau d'alimentation en eau - Exigences pour éviter le retour d'eau par siphonnage et la défaillance des ensembles de raccordement

Elektrische Geräte zum Anschluss an die Wasserversorgungsanlage - Vermeidung von Rücksaugung und des Versagens von Schlauchsätzen

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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European foreword

This document (EN 61770:2009/A12:2022) has been prepared by CLC/TC 61 “Safety of household and similar electrical appliances” in collaboration with CEN/TC 164 “water supply”.

The following dates are fixed:

• latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2022-12-10
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2025-06-10

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Text of A12:2021 of EN 61770:2009

1 Modification to Introduction

This European Amendment A12 supplements or modifies the corresponding clauses of EN 61770:2009+A11:2018+A1:2019

2 Modification to clause “3 Terms and definitions”

3.4 airgaps

3.4.Z1 airgap (general)

Add the following note at the end of the clause:

NOTE 1 to entry: a distance is considered to be unobstructed if the air flow into the feed pipe under vacuum conditions is not restricted by the construction of the appliance.

3.Z6 diameter of feed pipe (bore D)

Replace the definition of diameter of feed pipe with the following:

Internal diameter size of the outlet feed orifice (or calculated from the equivalent cross sectional area)

NOTE 1 to entry: The dimension of the diameter “D” is in mm

Add Note 2 to entry.

NOTE 2 to entry: If a water valve is used for calculations, then the internal diameter of the outlet connection is used or the minimum feed orifice diameter, whichever is smaller.

Add new definition:

3.Z9 Connection arrangement

All components in contact with water, located between the water tap and the backflow-prevention device and according 4.2 incorporated in or fixed to the electrical appliance

NOTE 1 to entry: **Hose-sets** and inlet-valves are typical components of the **connection arrangement**.

NOTE 2 to entry: For further information, see Figure Z22 – connection arrangement.

3 Modification to clause “4 General requirements”

4.Z1

*Modify “*NOTE*” with “*NOTE Z1*”*

Add the following sentence:

If components of the **connection arrangement** are not suitable for contact with water intended for human consumption, but risk analysis does not show specific hazards and if the total volume of water in contact with those components is equal or less than 1 l, they shall be considered as risk category 2 and be protected against backflow and backsiphonage accordingly.

NOTE Z2: The **backflow prevention device** is installed before the first component downstream of the **connection arrangement** that is not suitable for water intended for human consumption.

4 Modification to clause “6 Air gaps”

Modify the subclauses as follow:

6.Z2 Overflow arrangements

Add the following text at the end of the clause:

The air break to drain shall not obstruct the **overflow**.

An **overflow** is to be regarded as unobstructed if during the investigation of the assembly in each possible functional position the critical water level h is not increased.

6.Z2.1 AB air gaps overflow

Add the following text after the first paragraph:

The **overflow** arrangements at the receiving vessel shall be of non-circular design. After the receiving vessel, the geometry of the water pathway may change as long as it is unobstructed.

Overflow extensions are permitted. These can be either connected to waste water system or can end into atmosphere.

Unobstructed **overflow** is given, if the distance A between feed orifice and **critical water level** (h) according to Clause 6.Z4.1 is met.

Verification of the dimensions of the **overflow** arrangement shall be based upon the largest possible single rectangular that can be accommodated within the non-circular overflow.

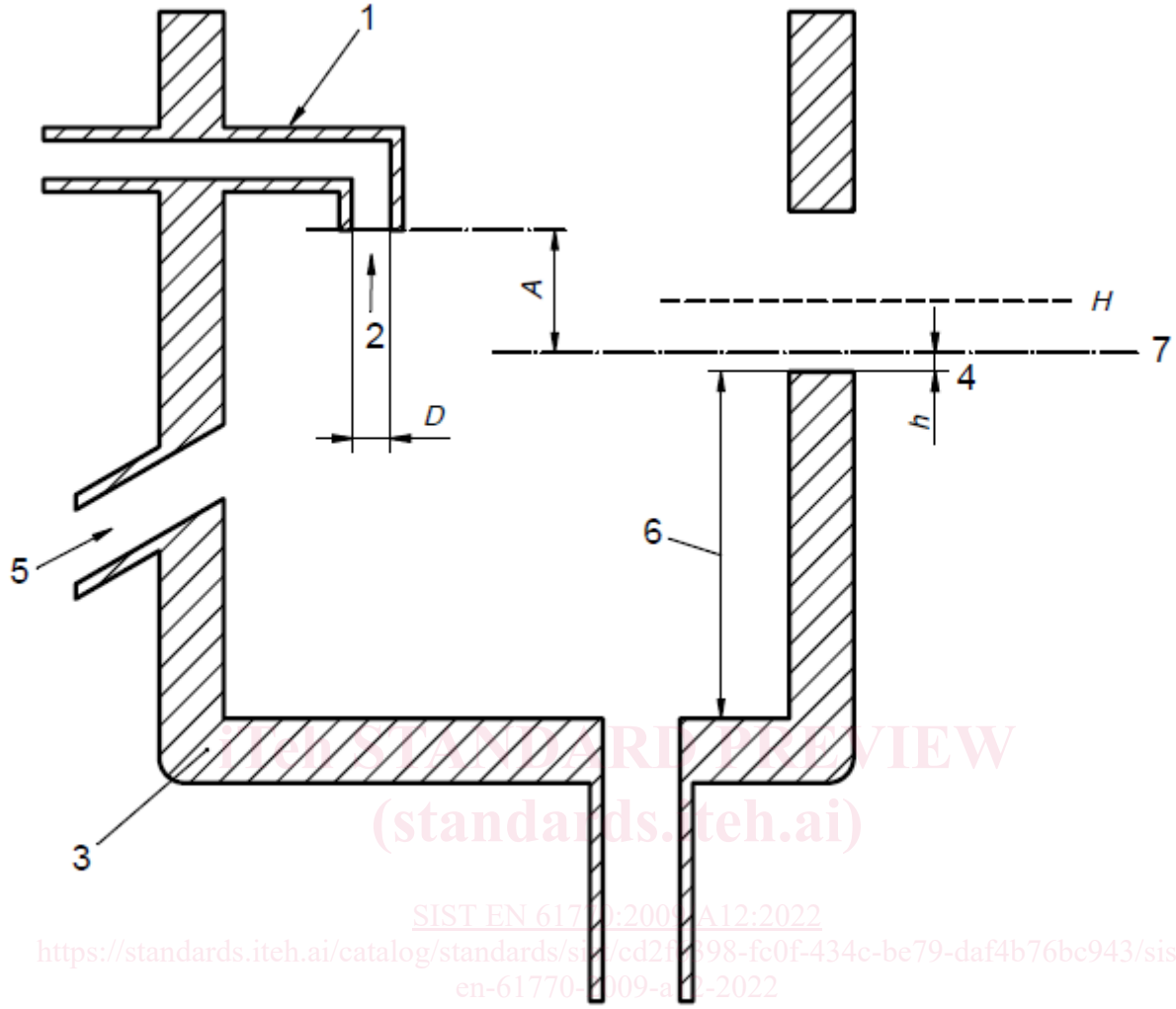
6.Z3.2 Backflow/back pressure

Add the following sentence at the end of the clause:

If between multiple water inlets a 2D clearance is not present, in addition to the air gap validation a back siphonage test in accordance with Annex A.1 shall be undertaken.

6.Z4.2 Air gap AB

Replace Figure Z2 by the following:

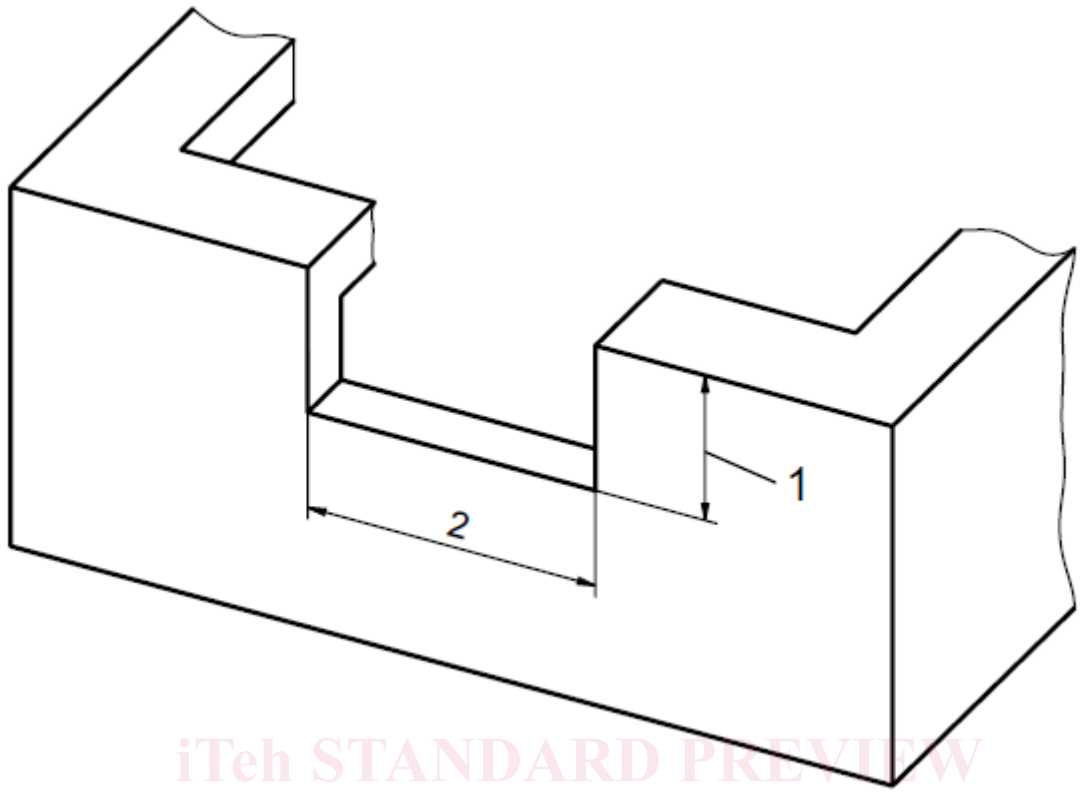


Key

A	Air gap (distance)
D	Internal diameter of feed pipe (bore)
H	Maximum level
1	Feed pipe
2	Feed orifice
3	Receiving vessel
4	Spillover level
5	Optional warning pipe
6	*Uw* ≥ 5h
7	Critical water level (distance *h*)

Figure Z2 — Dimensions Air gap AB

Replace Figure Z3 by the following:



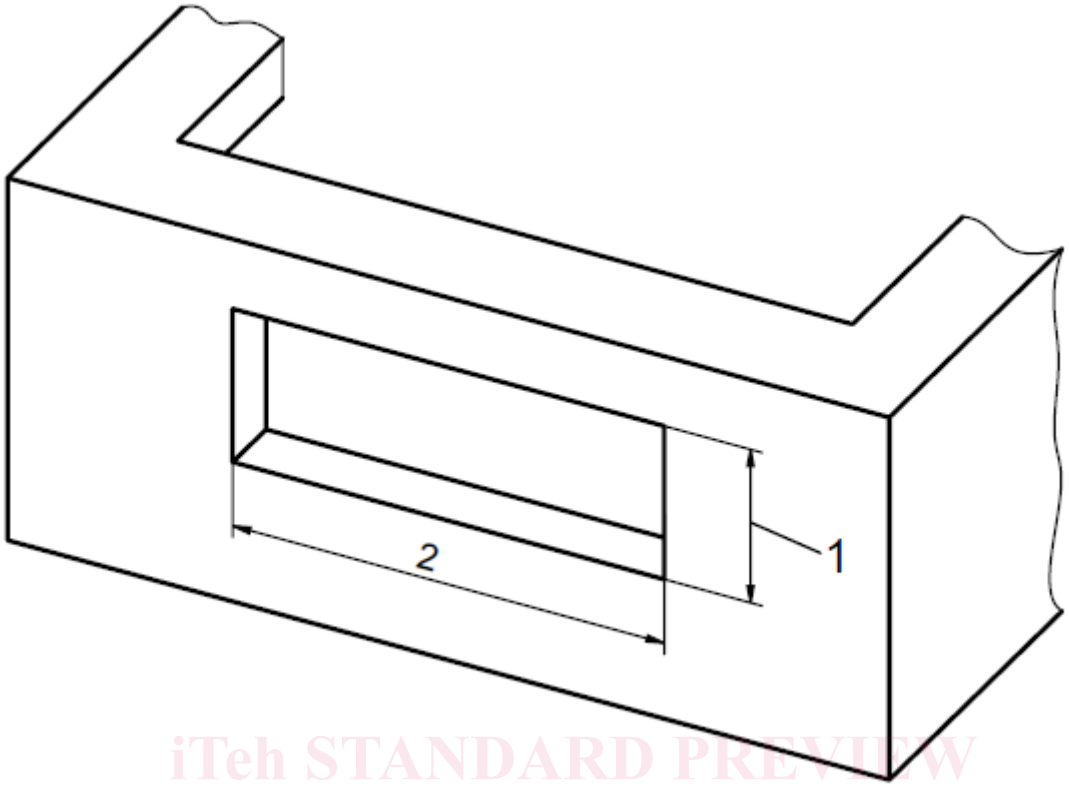
Key

1 *Ow* ≥ 2*D* + *h* and never less than 20 mm (single inlet)
Ow ≥ A + *h* and never less than 20 mm (multiple inlets)

2 *l* ≥ 10 *h*

Figure Z3— Rectangular overflow arrangement

Replace Figure Z4 by the following:



Key

1 *Ow* ≥ 2*D* + *h* and never less than 20 mm (single inlet)
Ow ≥ A + *h* and never less than 20 mm (multiple inlets)

2 *l* ≥ 10 *h*

Figure Z4 — Letterbox overflow arrangement

6.Z4.2.1

Delete the following sentence:

"crest thickness of the overflow arrangement (*Cw*) is less than or equal to 5 *h*";

6.Z4.3 Air gap AD

Add after the first paragraph:

The distance between the inner edge of the feed orifice and barriers of the physical Air Gap shall be 2D and in any case at a minimum of 5mm.

It is allowed to connect the upstream orifice or the downstream orifice with housings. Proper function shall be provided and distance requirements shall be met at any time.

Add the following at the end of the clause:

Water coming out of air break to drain can be discharged to receiving vessel.

6.Z5.2 Air gap AD

Replace the word "Sequence" with "Sequence of test" (two times).

5 Modification to clause “7 Pipe interrupters”

Modify the subclauses as follow:

7.Z1 Pipe interrupter without movable parts

7.Z1.1

Add the following note after the first paragraph:

NOTE to entry: A closing element can be any element able to create static positive pressure for fluid rest.

*Replace in the fourth paragraph, second sentence, “*3mm*” by “*4mm*”.*

7.Z1.4

Delete the following sentence:

The **critical water level** in the hose connecting the **pipe interrupter** to a water softener downstream of a **dynamic air inlet device** is also checked.

7.Z2.1 Pipe interrupters with movable parts

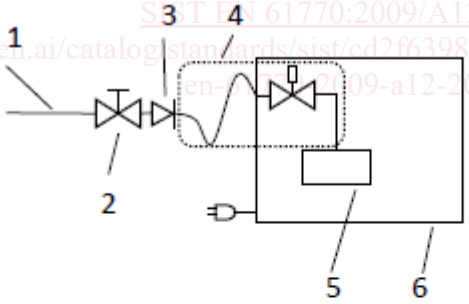
Replace the 4th sentence with the following:

Pipe interrupters with movable parts shall be installed at least at a height equal to h + 20 mm above the **maximum water level**. This distance shall not interfere on a 150mm distance from the **maximum water level**.

6 Modification to clause “9 Hose-sets”

9.3 Hose-sets

Add the following Figure Z22 after Figure Z16.



Key:
1 Drinking Water Supply
2 Water Tap
3 Backflow Prevention Device Cat. 2
4 Connection Arrangement (Volume 1l. Max)
5 Backflow Prevention Device
incorporated in or affixed to the Electrical Appliance
6 Electrical Appliance

Figure Z22 – Connection Arrangement