

INTERNATIONAL STANDARD

NORME INTERNATIONALE

AMENDMENT 2
AMENDEMENT 2

**Household and similar electrical appliances – Safety –
Part 2-58: Particular requirements for commercial electric dishwashing
machines**
(<https://standards.iteh.ai>)

**Appareils électrodomestiques et analogues – Sécurité –
Partie 2-58: Règles particulières pour les lave-vaisselle électriques à usage
collectif**

IEC 60335-2-58:2002/AMD2:2015

<https://standards.iteh.ai/catalog/standards/iec/283d4b63-c55a-4d2d-9f57-ccb0f58d496b/iec-60335-2-58-2002-amd2-2015>



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FOREWORD

This amendment has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances.

The text of this amendment is based on the following documents:

FDIS	Report on voting
61/4842/FDIS	61/4897/RVD

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

NOTE The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 12 months or later than 36 months from the date of publication.

CONTENTS

Replace the title of Clause 3 by the following:

Terms and definitions

1 Scope

NOTE 103 *Delete the 2nd dashed item.*

NOTE 104 *Add the following as a new second dashed item:*

- Sterilizers and washer-disinfectors used to treat medical materials (IEC 61010-2-040);

2 Normative references

Replace the reference to IEC 60436:1981 by the following:

IEC 60436, *Electric dishwashers for household use – Methods for measuring the performance*

Replace the reference to IEC 61770:1998 by the following:

IEC 61770:2008, *Electric appliances connected to the water mains – Avoidance of backsiphonage and failure of hose-sets*

Replace the reference to ISO 1817:1999 by the following:

ISO 1817:2011, *Rubber, vulcanized or thermoplastic – Determination of the effect of liquids*

3 Definitions

Replace the title of Clause 3 but not the clause number, by the following:

Terms and definitions

22 Construction

22.6

In the third paragraph of the modification to the test specification replace “25 ppm and 75 ppm” by “2,5 mmol/l and 7,5 mmol/l”.

Add the following Note after the fourth paragraph of the modification to the test specification.

NOTE 101 Triton DF-12 is the trade name of a product supplied by Union Carbide. This information is given for the convenience of users of this International Standard and does not constitute an endorsement by IEC of this product

Replace the addition by the following:

Addition:

Parts that withstand the ageing test specified in Annex BB are not considered to be parts where leakage could occur.

22.106 In the third paragraph of the test specification replace “50 ppm ± 25 ppm” by “5,0 mmol/l ± 2,5 mmol/l”.

Replace Note 1 by the following:

NOTE 1 Tissue paper is defined in 4.215 of ISO 4046-4 as a soft and strong, lightweight wrapping paper of grammage generally between 12 g/m² and 30 g/m², primarily intended for protective packaging of delicate articles and for gift wrapping.

Add the following new subclause:

22.109 For appliances that are controlled by programmable **electronic-circuits** that limit the number of heating elements and motors from being energised at the same time, simultaneous activation of any combination of heating elements and motors shall not render the appliance unsafe.

Compliance is checked as follows:

- the fault/error conditions specified in Table R.1 are applied and evaluated in accordance with the relevant requirements of Annex R; or
- the appliance is operated under the conditions of Clause 11 while being supplied at **rated voltage**, the programmable **electronic circuits** being modified to allow simultaneous activation of all heaters and motors under their control. Under these conditions, compliance with 19.13 shall be fulfilled.

23 Internal wiring

23.3 Add the following text to the addition:

Modification:

Instead of the test being carried out while the appliance is in operation, it is carried out with the appliance disconnected from the supply.

The number of flexings for conductors flexed during normal use is increased to 100 000.

Annex AA – Detergent and rinsing agent (Extract from IEC 60436)

Delete (Extract from IEC 60436) from the title of the annex.

Replace the text of Annex AA by the following:

AA.1 Detergents

Any commercially available detergent may be used, but if there is any doubt with regards to the test results, then one of the detergents described IEC 60436 is to be used.

The IEC 60436 detergents shall be stored in a waterproof bag in quantities of no more than 1 kg in a cool and dry atmosphere. They should be used within six months and within one month of opening.

AA.2 Rinsing agent

Any commercially available rinsing agent may be used, but if there is any doubt with regards to the test results, the acidic rinsing agent described IEC 60436 is to be used.

Annex BB – Ageing test for elastomeric parts

Replace the text of Annex BB by the following:

The ageing test on elastomeric parts is carried out by measuring their hardness and mass before and after immersion in solutions of detergent and rinsing agent at elevated temperature.

The test is carried out on at least three samples of each part. The test procedure is as specified in ISO 1817, with the following modifications.

5 Test liquids

Two test liquids are used:

- one liquid is obtained by dissolving 6 g of the detergent specified in Annex AA per litre of distilled water;
- the other liquid is composed of 0,6 ml of rinsing agent as specified in Annex AA per litre of distilled water.

Care is to be taken to ensure that the total mass of the test pieces immersed does not exceed 100 g for each litre of solution, that the test pieces are completely immersed and that their entire surface is freely exposed to the solution. During the tests the test pieces are not to be exposed to direct light. Test pieces of different compounds are not to be immersed at the same time in the same solution.

6 Test pieces

6.4 Conditioning

The temperature is $23\text{ °C} \pm 2\text{ °C}$ and the relative humidity is $(50 \pm 5)\%$.

7 Immersion in the test liquid

7.1 Temperature

The solution is heated within 1 h with the test pieces immersed, to a temperature of $75\text{ }^{+5}_0\text{ °C}$ and maintained at this value. The solution is renewed every 24 h and heated in the same way.

NOTE To avoid undue evaporation of the solution, a closed-circuit system or similar method can be used for renewing the solution.

7.2 Duration

The test pieces are immersed for a total period of $48\text{ }^{+1}_0\text{ h}$.

The test pieces are then immediately immersed in a fresh solution, which is maintained at ambient temperature. The pieces are immersed for $45\text{ min} \pm 15\text{ min}$.

After having been removed from the solution, the test pieces are rinsed in cold water at $15\text{ °C} \pm 5\text{ °C}$ and then dried with blotting paper.

8 Procedure

8.2 Change in mass

The increase in mass of the test pieces shall not exceed 10 % of the value determined before immersion.

8.6 Change in hardness

The micro-test for hardness applies.

The hardness of the test pieces shall not have changed by more than 8 IRHD. Their surface shall not have become sticky and shall show no crack visible to the naked eye or any other deterioration.

Annex CC – Requirements to avoid backsiphonage

Replace the text of Annex CC by the following:

The requirements of IEC 61770 are applicable except as follows.

1 Scope

Replace the first paragraph by the following:

This standard specifies requirements for the connection of commercial electric dishwashing machines to water mains having a water pressure not exceeding 1 MPa. These requirements are intended to prevent the backsiphonage of **non-potable water** into the water mains. It also specifies requirements for **hose-sets** used for connecting such appliances to the water mains.

Replace Note 1 by the following:

NOTE 1 Not applicable.

3 Terms and definitions

3.9 *Replace the term definition by the following:*

level of the **non-potable water** 5 s after water inlets have been closed in the case of batch dishwashers and rinsing compartments of dishwashers with separate washing and rinsing compartments, and 2 s after water inlets have been closed for washing compartments

4 General requirements

4.1 *Addition:*

Add the following note after the first paragraph:

Note 101 Other means to prevent backsiphonage of **non-potable water** into the water mains can be used, provided compliance with the requirements of this annex is achieved or such a risk is otherwise manifestly excluded.

4.3 *Replace the text by the following:*

Hose-sets for the connection of appliances to the water mains shall be delivered with the appliance, except where the connections are made outside the appliance and the **hose-set** contains no electrical parts.

Hose-sets required to be delivered with the appliance shall be constructed so that the risk of flooding is obviated as far as possible.

Compliance is checked by inspection and by the tests of Clause 9.

4.4 Not applicable.

8 Dynamic backflow preventers

8.1 *Add the following new paragraph to the requirement:*

For **batch dishwashers** and separate rinsing compartments, the branching point between the upper and lower water inlets (spray arms or nozzles) shall be located at least 40 mm above the **maximum water level** (see Figure CC.101).

Add the following Note before the test specification:

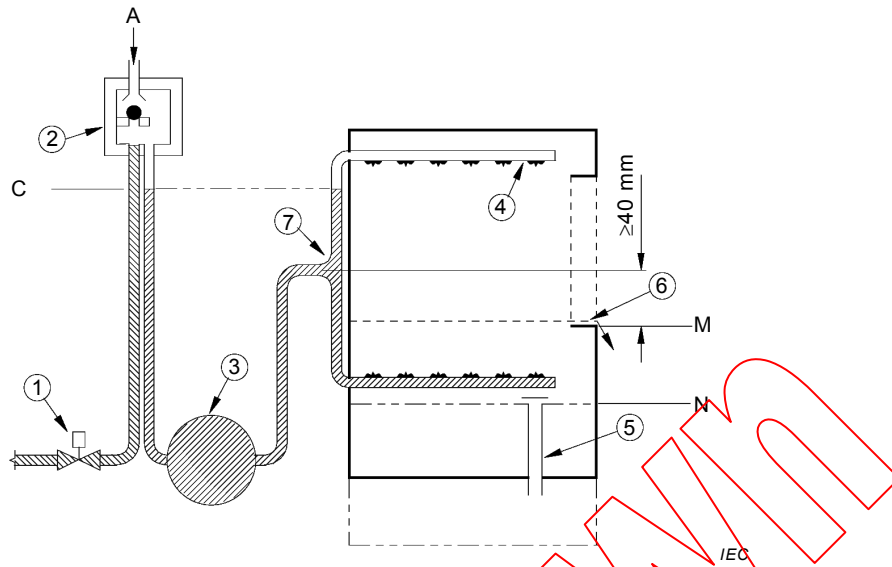
NOTE For the test of Annex A, the **critical water level** can be established by using a substitute hose having a ventilated cross section equal to the port area of the upper water inlet (upper spray arm).

Replace the first paragraph of the test specification by the following:

*Compliance is checked by inspection, by measurement and by operating the **dynamic backflow preventer** as described in 8.2, followed by the test of Annex A.*

Add the following after the third paragraph of the test specification:

For **batch dishwashers** and separate rinsing compartments, the conditions for the determination of the **critical water level** for the test of Annex A are shown in Figure CC.102.



Key

- 1 magnetic valve
- 2 dynamic backflow preventer
- 3 boiler
- 4 rinse arm
- 5 normal drain outlet
- 6 overflow in a defective situation
- 7 branch point
- A air inlet
- C critical water level
- M maximum water level
- N normal water level

Figure CC.101 – Arrangement for the determination of maximum water level for dynamic backflow preventers