

INTERNATIONAL STANDARD

IEC 60335-2-7

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AMENDMENT 1
2004-01

Amendment 1

**Household and similar electrical appliances –
Safety –**

**Part 2-7:
Particular requirements for washing machines**

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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
61/2534/FDIS	61/2578/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 the base publication and its amendments will remain unchanged until 2005. At this date, the publication will be

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- withdrawn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

INTRODUCTION

Replace the second sentence of the second paragraph by the following:

It also covers abnormal situations that can be expected in practice and takes into account the way in which electromagnetic phenomena can affect the safe operation of appliances.

1 Scope

Add the following items to Note 103:

- for appliances having a separate spin container for water extraction, IEC 60335-2-4 is also applicable;
- for appliance having a drying function, IEC 60335-2-11 is also applicable.

2 Normative references

Add the following:

IEC 60730-2-12:1993, *Automatic electrical controls for household and similar use – Part 2: Particular requirements for electrically operated door locks*

5 General conditions for the tests

Add the following subclause:

5.2 Addition:

The relevant tests of 21.101, 21.102 and 22.104 shall be carried out on the same appliance as that used for the test of Clause 18.

5.3 Add the following:

The relevant tests of 21.101 and 21.102 are carried out before the test of Clause 18. The test of 22.104 is carried out after the test of Clause 18.

7 Marking and instructions

7.6 Delete the addition.

7.12 Delete the last paragraph.

7.12.1 Replace the text of the addition by the following:

For washing machines having ventilation openings in the base, the installation instructions shall state that the openings must not be obstructed by a carpet.

7.14 Delete the addition.

7.101 Delete the subclause.

15 Moisture resistance

15.1 Delete the addition.

18 Endurance

Replace the existing text by the following:

This clause of Part 1 is replaced by the following.

18.101 Appliances shall be constructed so that the lid or door interlock withstands the stresses to which it may be exposed in normal use.

Compliance is checked by the following test.

The lid or door is opened as in normal use and the force applied to the handle, or actuating means of the release mechanism, is measured. The force required to close the lid or door is also measured.

*The lid or door is then subjected to 10 000 cycles of opening and closing. For the first 6 000 cycles, the appliance is supplied at **rated voltage** and operated so that the interlock mechanism is energized and de-energized each cycle. For the last 4 000 cycles, the appliance is not connected to the supply mains. For appliances having a drying function, the total number of cycles is increased to 13 000, the first 9 000 cycles being carried out with the interlock mechanism energized and de-energized each cycle.*

NOTE 1 If the interlock complies with IEC 60730-2-12, the appliance is not connected to the supply mains during this test.

NOTE 2 If the interlock operates more than once during **normal operation**, it is operated for this number of times during each cycle.

Lids are opened each time by approximately 45° and doors by 90°, the speed of opening being approximately 1,5 m/s. The force applied to open the lid or door is twice the measured opening force, with a minimum of 50 N and a maximum of 200 N.

Doors are closed at a speed of approximately 1,5 m/s, the force applied being five times the measured closing force, with a minimum of 50 N and a maximum of 200 N. Lids are allowed to close under their own weight but if they fail to latch, a force of five times the measured closing force is applied, with a minimum of 50 N and a maximum of 200 N.

After the tests, compliance with the relevant requirements of 20.103 to 20.105 shall not be impaired.

18.102 The braking mechanism of appliances having a lid that can be opened during the water extraction period shall withstand the stresses to which they may be exposed in normal use.

Compliance is checked by the following test.

*The appliance is supplied at 1,06 times **rated voltage** and operated under **normal operation** until the motor has reached its highest speed. The lid is then fully opened. The test is repeated after the drum has been at rest for a period long enough to ensure that the appliance does not attain an excessive temperature.*

The test is carried out 1 000 times, the textile material being re-saturated with water at least every 250 times.

After the test, the appliance shall be fit for further use and compliance with this standard shall not be impaired.

NOTE Forced cooling may be used to prevent excessive temperatures and to shorten the test.

19 Abnormal operation

19.13 Add the following:

The appliance shall comply with the appropriate requirements of 20.103 to 20.105 if it can still be operated.

19.101 Replace the fifth dashed item of Note 1 by the following:

- failure or blocking the mechanical parts of a water-level switch. This fault condition is not applied if
 - the cross-sectional area of the tube supplying the air chamber is greater than 5 cm² with a minimum dimension of 10 mm,
 - the outlet of the chamber is at least 20 mm above the highest water level, and
 - the tube connecting the air chamber to the water-level switch is fixed so that there is no likelihood of bending or pinching;

20 Stability and mechanical hazards

20.102 Replace the existing text by the following:

Appliances shall not be adversely affected by an unbalanced load.

Compliance is checked by the following test.

The appliance is placed on a horizontal support and a load having a mass of 0,2 kg or 10 % of the maximum mass of the cloth specified in the instructions, whichever is greater, is fixed to the inside wall of the drum half-way along its length.

*The appliance is supplied at **rated voltage** and operated during the water extraction period.*