
Household electrical appliances - Performance - Hard water for testing

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EUROPEAN STANDARD

EN 60734

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2003

ICS 97.030

Supersedes EN 60734:1993

English version

**Household electrical appliances –
Performance –
Hard water for testing
(IEC 60734:2001)**

Appareils électrodomestiques –
Aptitude à la fonction –
Eau dure pour les essais
(CEI 60734:2001)

Elektrische Geräte für den Hausgebrauch -
Gebrauchseigenschaften –
Hartes Wasser für Prüfungen
(IEC 60734:2001)

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This European Standard was approved by CENELEC on 2002-12-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of the International Standard IEC 60734:2001, prepared by SC 59D, Home laundry appliances, of IEC TC 59, Performance of household electrical appliances, was submitted to the CENELEC Unique Acceptance Procedure and was approved by CENELEC as EN 60734 on 2002-12-01 without any modification.

This European Standard supersedes EN 60734:1993.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2003-12-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2005-12-01

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

In this standard, Annex B is normative and Annexes A and C are informative.

Endorsement notice

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The text of the International Standard IEC 60734:2001 was approved by CENELEC as a European Standard without any modification.

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INTERNATIONAL STANDARD

IEC 60734

Third edition
2001-12

Household electrical appliances – Performance – Hard water for testing

*Appareils électrodomestiques –
Aptitude à la fonction –
Eau dure pour les essais*

SIST EN 60734:2003

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Commission Electrotechnique Internationale
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOUSEHOLD ELECTRICAL APPLIANCES –
PERFORMANCE –
HARD WATER FOR TESTING**
FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
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- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International standard IEC 60734 has been prepared by subcommittee 59D: Home laundry appliances, of IEC Technical Committee 59: Performance of household electrical appliances.

This third edition of IEC 60734 replaces the second edition published in 1993.

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

FDIS	Report on voting
59D/201/FDIS	59D/210/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

Annex B forms an integral part of this standard.

Annexes A and C are for information only.

Words in **bold** in the text are defined in clause 3.

The committee has decided that the contents of this publication will remain unchanged until 2006. At this date, the publication will be

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

A bilingual version of this standard may be issued at a later date.

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INTRODUCTION

This publication describes several methods to prepare water of standardised hardness to be used for testing household appliances in cases where the water quality is important for the reproducibility of the test results.

It is based on the second edition of IEC 60734, which describes two methods, A and B, of preparing water of three different water hardnesses. Experiences from application of the methods have shown that they are unnecessarily rigid for some purposes and thus expensive or not suited for the preparation of large quantities of water. Furthermore the hardness given is not in line with those stated in some performance standards. Complementary methods C1 and C2 have been developed to be used in such cases. These allow the use of natural instead of demineralised water.

Method A is used to prepare hard water of the correct total hardness. Preparation starts with demineralised water in which hardening salts are dissolved by bubbling carbon dioxide through the mixture.

Method B involves preparation in a similar way but with other salts, which are soluble without addition of carbon dioxide. This method will result in excessive amounts of some ions compared to method A. Both methods give water with specified temporary as well as permanent hardness.

Method C1 starts with natural water with higher hardness than required, while method C2 starts with soft natural water, which is hardened. Depending on the composition of the natural water, several other ions might be present. Restrictions regarding the amounts are given for some ions, which may influence the cleaning results when testing washing machines and dishwashers. No specification regarding temporary and permanent hardness is given.

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