IEC 60704-2-8

Edition 2.0 2020-03
REDLINE VERSION

INTERNATIONAL STANDARD

colour inside

Household and similar electrical appliances – Test code for the determination of airborne acoustical noise –
Part 2-8: Particular requirements for electric shavers, hair clippers or trimmers

IEC 60704-2-8:2020-03 RLV(en)

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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 17.140.20; 97.170

ISBN 978-2-8322-7976-2

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – TEST CODE FOR THE DETERMINATION OF AIRBORNE ACOUSTICAL NOISE –

Part 2-8: Particular requirements for electric shavers, hair clippers or trimmers

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. 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 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 IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
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8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

International Standard IEC 60704-2-8 has been prepared by subcommittee 59L: Small household appliances, of IEC technical committee 59: Performance of household and similar electrical appliances.

This second edition cancels and replaces the first edition published in 1997. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) the scope of the products has been enlarged to include hair clippers and trimmers;
b) it includes standard deviations of sound power levels in 1.1.3;
c) the normative references have been updated (ISO 3744:2010 and ISO 3743-1:2010);
d) it is adjusted with respect to IEC 60704-1:2010;
e) it has been updated to comply with the ISO/IEC Directives, Part 2.

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

FDIS	Report on voting
59L/176/FDIS	59L/177/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 document has been drafted in accordance with the ISO/IEC Directives, Part 2.

This Part 2-8 is intended to be used in conjunction with third edition (2010) of IEC 60704-1, *Household and similar electrical appliances – Test code for the determination of airborne acoustical noise – Part 1: General requirements*.

The relevant text of IEC 60704-1:2010 as amended by this standard establishes the test code for shavers, hair clippers or trimmers.

This Part 2-8 supplements or modifies the corresponding clauses in IEC 60704-1:2010, so as to establish the test code for shavers, hair clippers or trimmers. When a particular subclause of IEC 60704-1:2010 is not mentioned in this Part 2-8, that subclause is applicable as far as reasonable. Where this standard states "addition", "modification" or "replacement", the relevant requirements, test specifications or explanatory matter in IEC 60704-1:2010 should be adapted accordingly.

Subclauses, tables and figures that are numbered starting from 101 are additional to those in IEC 60704-1:2010.

Unless notes are in a new subclause or involve notes in IEC 60704-1:2010, they are numbered starting from 101, including those in a replaced clause or subclause.

Additional annexes are lettered AA, BB, etc.

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- reconfirmed,
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INTRODUCTION

The measuring conditions specified in this document provide for sufficient steadiness in the noise emitted and reproducibility in different laboratories, whilst simulating as far as possible the practical use of shavers, hair clippers or trimmers.

~~It is recommended to consider noise data as part of performance data.~~

It is recommended to consider the determination of noise levels as part of a comprehensive testing procedure covering many aspects of the properties and performance of shavers, hair clippers or trimmers.

NOTE As stated in the Introduction to IEC 60704-1:2010, this test code is concerned with airborne noise only.

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – TEST CODE FOR THE DETERMINATION OF AIRBORNE ACOUSTICAL NOISE –

Part 2-8: Particular requirements for electric shavers, hair clippers or trimmers

1 Scope and object

This clause of IEC 60704-1:2010 is applicable except as follows:

1.1 Scope

1.1.1 General

Replacement:

This document applies to electric shavers, hair clippers or trimmers for domestic and similar use, supplied from mains or secondary batteries or primary batteries.

The term "similar use" is understood to mean the use in hotels, hospitals, shops, offices, etc.

NOTE 101 This document does not apply to shavers, hair clippers or trimmers that are powered by means other than electrical ~~means~~, for example by a spring-device.

NOTE 102 If possible, this document can also be applied to analogous electrically ~~operating~~ operated devices, such as ~~hair clippers and~~ depilating devices.

1.1.2 Types of noise

Replacement:

The methods specified in ISO 3743-1, ISO 3743-2 and ISO 3744 can be used for measuring noise emitted by shavers, hair clippers or trimmers

1.1.3 Size of the source

Replacement:

The method specified in ISO 3744:2010 is applicable to noise sources of any size. Limitations for the size of the source are given in Subclause 1.2 of ISO 3743-1:2010 and Clause 5 of ISO 3743-2:2018.

1.2 Object

Addition:

Requirements for the declaration of noise emission values are not within the scope of this document.

NOTE 101 For determining and verifying noise emission values declared in product specifications, see IEC 60704-3.

1.3 Measurement uncertainty

Replacement:

The estimated values of standard deviations of sound power levels determined in accordance with this document are given in Table 101.

Table 101 – Standard deviations of sound power levels

Standard deviation (dB)	
σ_r (repeatability)	σ_R (reproducibility)
0,4	0,8

Addition:

1.101 Standard deviation for declaration and verification

For the purpose of determining and verifying declared noise emission values in accordance with IEC 60704-3, the values in Table 102 apply.

Table 102 – Standard deviations for declaration and verification

Standard deviation (dB)		
σ_P (production)	σ_t (total)	σ_M (reference)
0,7 to 1,3	1,1 to 1,5	1,5

2 Normative references

This clause of IEC 60704-1:2010 is applicable except as follows:

~~*Addition:*~~

~~IEC 704-1: 1996, *Household and similar electrical appliances – Test code for the Determination of airborne acoustical noise – Part 1: General requirements*~~

~~IEC 1254: 1993, *Electric shavers for household use – Methods for measuring the performance*~~

Replacement:

ISO 3743-1:2010, *Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Engineering methods for small movable sources in reverberant fields – Part 1: Comparison method for a hard-walled test room*

ISO 3743-2:2018, *Acoustics – Determination of sound power levels of noise sources using sound pressure – Engineering methods for small, movable sources in reverberant fields – Part 2: methods for special reverberation test rooms*

ISO 3744:2010, *Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Engineering methods for an essentially free field over a reflecting plane*

3 Terms and definitions

This clause of IEC 60704-1:2010 is applicable except as follows:

Addition:

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

~~3.101 **mains shaver:** Shaver which can be operated directly from the mains supply.~~

~~3.102 **rechargeable shaver:** Shaver which is supplied by a secondary battery belonging to it.~~

~~3.103 **battery shaver:** Shaver which is supplied by primary batteries.~~

~~3.104 **trimmer:** Accessory incorporated in the shaver to groom particular facial hair, for example, moustache, beard or side whiskers.~~

3.101
mains powered
shaver, hair clipper or trimmer that can be operated directly from the mains supply

3.102
rechargeable
shaver, hair clipper or trimmer that is supplied by a secondary battery belonging to it

3.103
battery powered
shaver, hair clipper or trimmer that is supplied by primary batteries

3.104
trimmer accessory
accessory incorporated in the shaver to groom particular facial hair, for example, moustache, beard or side whiskers

4 Measurement methods and acoustical environments

This clause of IEC 60704-1:2010 is applicable except as follows:

4.2 Direct method

Addition:

~~NOTE Shavers can produce pure tones. If pure tone components are present in the noise emitted, proper precautions should be taken as specified in ISO 3743-1, ISO 3743-2 and ISO 3744.~~

Shavers, hair clippers or trimmers can produce pure tones. If pure tone components are present in the noise emitted by the source, the estimated standard deviation of the measured sound pressure levels in the special reverberation room can increase. In such cases, additional microphone positions or source positions can be necessary, as specified in ISO 3743-2.

4.3 Comparison method

Addition:

~~NOTE – Shavers can produce pure tones. If pure tone components are present in the noise emitted, proper precautions should be taken as specified in ISO 3743-1, ISO 3743-2 and ISO 3744.~~

If pure tone components are present in the noise emitted by the source, the estimated standard deviation of the measured sound pressure levels in the hard-walled test room or in the special reverberation room can increase. In such cases, additional microphone positions or source positions can be necessary, as specified in ISO 3743-1 or ISO 3743-2.

5 Instrumentation

This clause of IEC 60704-1:2010 is applicable.

6 Operation and location of appliances under test

This clause of IEC 60704-1:2010 is applicable except as follows:

~~*Addition:*~~

~~NOTE – During handling, care should be taken to avoid any damaging, especially of the shaving parts of the appliance as these parts tend to be very delicate.~~

6.1 Equipping and pre-conditioning of appliances

6.1.1

Replacement:

Shavers, hair clippers or trimmers shall be equipped as for ordinary shaving, clipping or trimming. Shavers, hair clippers or trimmers with a cutting selector shall be adjusted in such a way that the ~~shaving~~ cutting head is in the least visible position that the construction allows.

The shaver, hair clipper or trimmer shall be clean, including the hair chamber, if any. The appliance shall be oiled with a light oil having a viscosity not exceeding 20 cSt at 50 °C. If the manufacturer prescribes a different method of cleaning or lubrication, the manufacturer's method should be followed.

NOTE 101 During handling, take care to avoid any damage, especially to the cutting parts of the appliance as these parts tend to be very delicate.

6.1.3

Replacement:

Prior to noise measurements, the appliance shall have been in operation for at least 10 min, unless otherwise specified by the manufacturer.

6.1.4

Replacement:

Immediately before each series of noise measurements, the ~~shaver~~ appliance is operated for 35 s ± 5 s to stabilize, without load, at the highest speed.

6.2 Supply of electric energy and of water or gas

6.2.2

Replacement:

Battery-operated shavers, hair clippers or trimmers are started, for noise measurements, with fully loaded batteries as specified by the manufacturer. The batteries have to be replaced

when the voltage under load has dropped below 0,9 times the battery voltage under load with fully loaded batteries.

Rechargeable shavers, hair clippers or trimmers are measured with fully charged batteries, and disconnected from any external power source.

6.4 Loading and operating of appliances during tests

6.4.1

Replacement:

The shaver, hair clipper or trimmer is to be measured under no-load condition. If speed control is provided, the highest speed setting has to be chosen.

~~When shavers are equipped with more than one shaving head and if a selection switch for shaving heads is available, that switch setting shall be measured which gives the highest noise value.~~

When shavers, hair clippers or trimmers are equipped with more than one cutting head and if a cutting selector for cutting heads is available, the selector setting that gives the highest noise value shall be used.

Shavers can be equipped with a trimmer accessory. When the trimmer accessory can be switched on and off, the following measurements shall be made:

– only shaving heads,

and the following measurements could be made:

– shaving heads + trimmer accessory (if possible);
– only trimmer accessory (if possible).

~~If there is more than one position for the trimmer, that trimmer position shall be measured which gives the highest noise value.~~

If there is more than one position for the trimmer accessory, the trimmer accessory position that gives the highest noise value shall be measured.

6.4.3

Addition:

~~NOTE~~ For shavers that operate with an operational cycle, the loudest part of the cycle should be measured. This is preferably done by forcing the machine to operate in this loud part of the cycle. If this is not possible, the actual measurement should be done during that particular loud part of the cycle.

6.5 Location and mounting of appliances

6.5.1

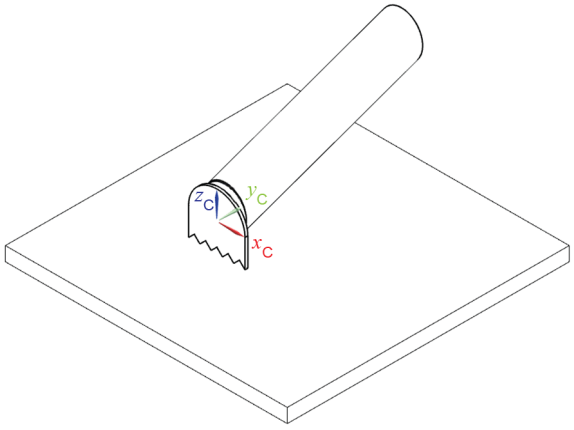
Not applicable.

6.5.2

Addition:

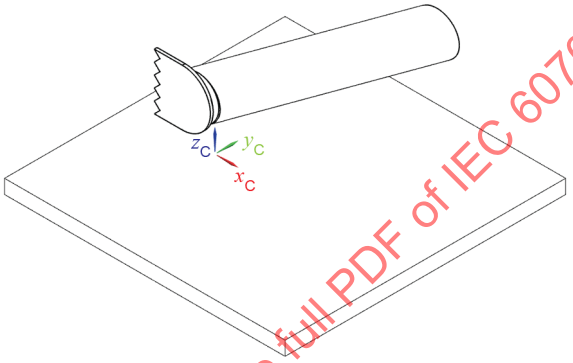
Shavers, hair clippers or trimmers are positioned in such a way that the tangent plane of the surface, which is normally in contact with the skin, is located vertically. The longitudinal axis of the shaver, hair clipper or trimmer is located horizontally, if possible. The height, z_c, of 25 cm is measured from the centre of the cutting area towards the bottom surface.

Figure 101 show the different isometric postion views.



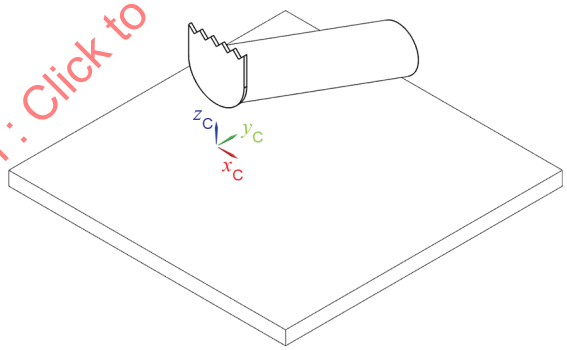
IEC

a) Isometric position view, -z direction.



IEC

b) Isometric position view, -x direction



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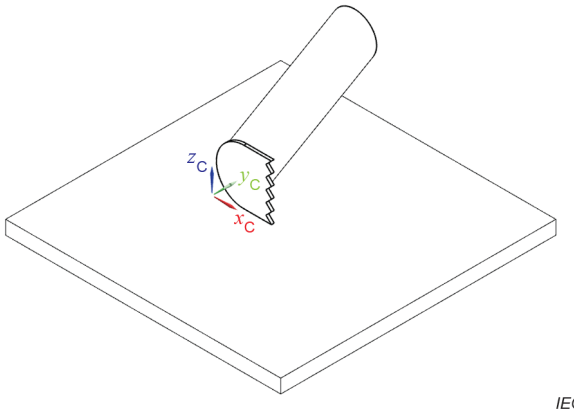
c) Isometric position view, +z direction



d) Isometic position view, +x direction

Figure 101 – Isometric position views of the shaver, hair clipper or trimmer

6.5.3

Not applicable.

6.5.4

Not applicable.

6.5.5

Not applicable.

7 Measurement of sound pressure levels

This clause of IEC 60704-1:2010 is applicable except as follows:

7.1 Microphone array, measurement surface and RSS location for essentially free-field conditions over reflecting plane(s)

7.1.1

Not applicable.

7.1.2

Not applicable.

7.1.3

Not applicable.

7.1.5

Not applicable.

7.1.6

Not applicable.

7.4.1

Addition:

The A-weighted sound pressure level shall be time-averaged during at least 30 s.

8 Calculation of sound pressure and sound power levels

This clause of IEC 60704-1:2010 is applicable.

9 Information to be recorded

This clause of IEC 60704-1:2010 is applicable except as follows:

9.7 Electric supply, water supply, etc.

9.7.3

Not applicable.

9.7.4

Not applicable.

9.8 Climatic conditions

9.8.3

Not applicable.

10 Information to be reported

This clause of IEC 60704-1:2010 is applicable except as follows:

10.3 Test conditions for the appliance

10.3.4

Not applicable.

10.3.5

Not applicable.

10.3.8

Not applicable.

Annexes

The annexes of IEC 60704-1:2010 apply with the following exception:

Annex B
(normative)

~~**Standard test table**~~

Test enclosure

This annex of IEC 60704-1:2010 is not applicable.

Bibliography

Addition:

IEC 61254:1993, *Electric shavers for household use – Methods for measuring the performance*

IEC 62863:2017, *Method of measuring performances of electric hair clippers or trimmers for household use*

IEC 60704-2-8

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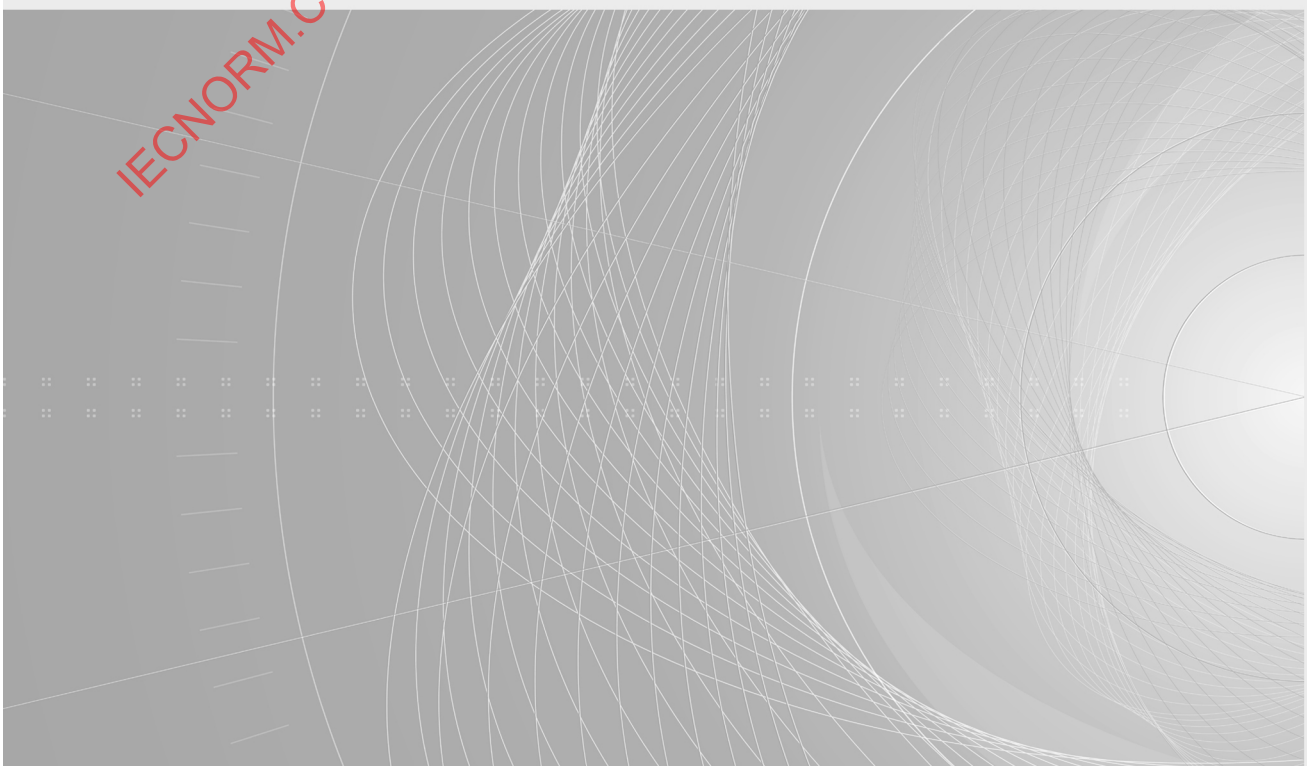
Household and similar electrical appliances – Test code for the determination of airborne acoustical noise –
Part 2-8: Particular requirements for electric shavers, hair clippers or trimmers

Appareils électrodomestiques et analogues – Code d'essai pour la détermination du bruit aérien –
Partie 2-8: Exigences particulières pour les rasoirs et les tondeuses à barbe ou à cheveux électriques



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Part 2-8: Particular requirements for electric shavers, hair clippers or trimmers

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NOTE As stated in the Introduction to IEC 60704-1:2010, this test code is concerned with airborne noise only.

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Part 2-8: Particular requirements for electric shavers, hair clippers or trimmers

1 Scope and object

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1.1 Scope

1.1.1 General

Replacement:

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The term "similar use" is understood to mean the use in hotels, hospitals, shops, offices, etc.

NOTE 101 This document does not apply to shavers, hair clippers or trimmers that are powered by means other than electrical, for example by a spring-device.

NOTE 102 If possible, this document can also be applied to analogous electrically operated devices, such as depilating devices.

1.1.2 Types of noise

Replacement:

The methods specified in ISO 3743-1, ISO 3743-2 and ISO 3744 can be used for measuring noise emitted by shavers, hair clippers or trimmers

1.1.3 Size of the source

Replacement:

The method specified in ISO 3744:2010 is applicable to noise sources of any size. Limitations for the size of the source are given in Subclause 1.2 of ISO 3743-1:2010 and Clause 5 of ISO 3743-2:2018.

1.2 Object

Addition:

Requirements for the declaration of noise emission values are not within the scope of this document.

NOTE 101 For determining and verifying noise emission values declared in product specifications, see IEC 60704-3.

1.3 Measurement uncertainty

Replacement:

The estimated values of standard deviations of sound power levels determined in accordance with this document are given in Table 101.

Table 101 – Standard deviations of sound power levels

Standard deviation (dB)	
σ_r (repeatability)	σ_R (reproducibility)
0,4	0,8

Addition:

1.101 Standard deviation for declaration and verification

For the purpose of determining and verifying declared noise emission values in accordance with IEC 60704-3, the values in Table 102 apply.

Table 102 – Standard deviations for declaration and verification

Standard deviation (dB)		
σ_P (production)	σ_t (total)	σ_M (reference)
0,7 to 1,3	1,1 to 1,5	1,5

2 Normative references

This clause of IEC 60704-1:2010 is applicable except as follows:

Replacement:

ISO 3743-1:2010, *Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Engineering methods for small movable sources in reverberant fields – Part 1: Comparison method for a hard-walled test room*

ISO 3743-2:2018, *Acoustics – Determination of sound power levels of noise sources using sound pressure – Engineering methods for small, movable sources in reverberant fields – Part 2: methods for special reverberation test rooms*

ISO 3744:2010, *Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Engineering methods for an essentially free field over a reflecting plane*

3 Terms and definitions

This clause of IEC 60704-1:2010 is applicable except as follows:

Addition:

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.101
mains powered
shaver, hair clipper or trimmer that can be operated directly from the mains supply

3.102
rechargeable
shaver, hair clipper or trimmer that is supplied by a secondary battery belonging to it

3.103
battery powered
shaver, hair clipper or trimmer that is supplied by primary batteries

3.104
trimmer accessory
accessory incorporated in the shaver to groom particular facial hair, for example, moustache, beard or side whiskers

4 Measurement methods and acoustical environments

This clause of IEC 60704-1:2010 is applicable except as follows:

4.2 Direct method

Addition:

Shavers, hair clippers or trimmers can produce pure tones. If pure tone components are present in the noise emitted by the source, the estimated standard deviation of the measured sound pressure levels in the special reverberation room can increase. In such cases, additional microphone positions or source positions can be necessary, as specified in ISO 3743-2.

4.3 Comparison method

Addition:

If pure tone components are present in the noise emitted by the source, the estimated standard deviation of the measured sound pressure levels in the hard-walled test room or in the special reverberation room can increase. In such cases, additional microphone positions or source positions can be necessary, as specified in ISO 3743-1 or ISO 3743-2.

5 Instrumentation

This clause of IEC 60704-1:2010 is applicable.

6 Operation and location of appliances under test

This clause of IEC 60704-1:2010 is applicable except as follows:

6.1 Equipping and pre-conditioning of appliances

6.1.1

Replacement:

Shavers, hair clippers or trimmers shall be equipped as for ordinary shaving, clipping or trimming. Shavers, hair clippers or trimmers with a cutting selector shall be adjusted in such a way that the cutting head is in the least visible position that the construction allows.

The shaver, hair clipper or trimmer shall be clean, including the hair chamber, if any. The appliance shall be oiled with a light oil having a viscosity not exceeding 20 cSt at 50 °C. If the manufacturer prescribes a different method of cleaning or lubrication, the manufacturer's method should be followed.

NOTE 101 During handling, take care to avoid any damage, especially to the cutting parts of the appliance as these parts tend to be very delicate.

6.1.3

Replacement:

Prior to noise measurements, the appliance shall have been in operation for at least 10 min, unless otherwise specified by the manufacturer.

6.1.4

Replacement:

Immediately before each series of noise measurements, the appliance is operated for 35 s ± 5 s to stabilize, without load, at the highest speed.

6.2 Supply of electric energy and of water or gas

6.2.2

Replacement:

Battery-operated shavers, hair clippers or trimmers are started, for noise measurements, with fully loaded batteries as specified by the manufacturer. The batteries have to be replaced when the voltage under load has dropped below 0,9 times the battery voltage under load with fully loaded batteries.

Rechargeable shavers, hair clippers or trimmers are measured with fully charged batteries, and disconnected from any external power source.

6.4 Loading and operating of appliances during tests

6.4.1

Replacement:

The shaver, hair clipper or trimmer is to be measured under no-load condition. If speed control is provided, the highest speed setting has to be chosen.

When shavers, hair clippers or trimmers are equipped with more than one cutting head and if a cutting selector for cutting heads is available, the selector setting that gives the highest noise value shall be used.

Shavers can be equipped with a trimmer accessory. When the trimmer accessory can be switched on and off, the following measurements shall be made:

– only shaving heads,

and the following measurements could be made:

– shaving heads + trimmer accessory (if possible);

– only trimmer accessory (if possible).

If there is more than one position for the trimmer accessory, the trimmer accessory position that gives the highest noise value shall be measured.

6.4.3

Addition:

For shavers that operate with an operational cycle, the loudest part of the cycle should be measured. This is preferably done by forcing the machine to operate in this loud part of the cycle. If this is not possible, the actual measurement should be done during that particular loud part of the cycle.

6.5 Location and mounting of appliances

6.5.1

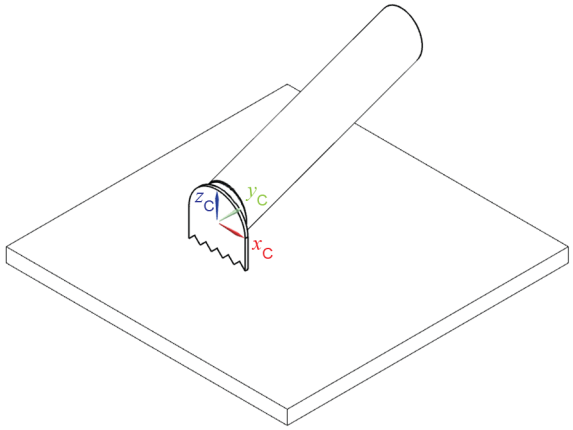
Not applicable.

6.5.2

Addition:

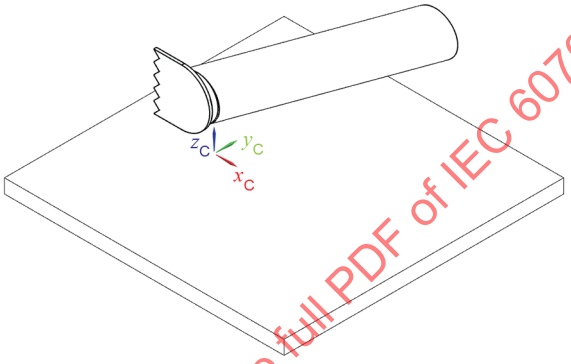
Shavers, hair clippers or trimmers are positioned in such a way that the tangent plane of the surface, which is normally in contact with the skin, is located vertically. The longitudinal axis of the shaver, hair clipper or trimmer is located horizontally, if possible. The height, z_c, of 25 cm is measured from the centre of the cutting area towards the bottom surface.

Figure 101 show the different isometric postion views.



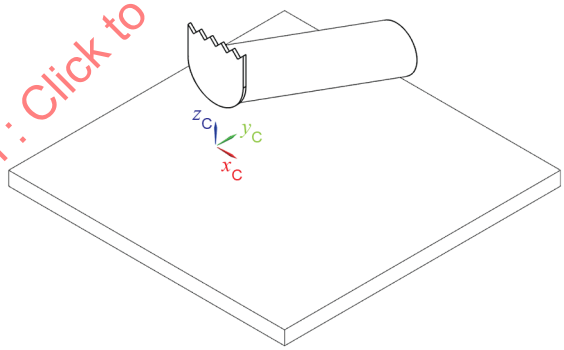
IEC

a) Isometric position view, -z direction.



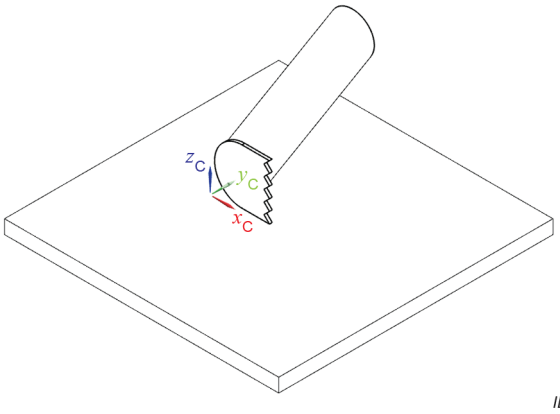
IEC

b) Isometric position view, -x direction



IEC

c) Isometric position view, +z direction



d) Isometic position view, +x direction

Figure 101 – Isometric position views of the shaver, hair clipper or trimmer

6.5.3

Not applicable.

6.5.4

Not applicable.

6.5.5

Not applicable.

7 Measurement of sound pressure levels

This clause of IEC 60704-1:2010 is applicable except as follows:

7.1 Microphone array, measurement surface and RSS location for essentially free-field conditions over reflecting plane(s)

7.1.1

Not applicable.

7.1.2

Not applicable.

7.1.3

Not applicable.

7.1.5

Not applicable.

7.1.6

Not applicable.

7.4.1

Addition:

The A-weighted sound pressure level shall be time-averaged during at least 30 s.

8 Calculation of sound pressure and sound power levels

This clause of IEC 60704-1:2010 is applicable.

9 Information to be recorded

This clause of IEC 60704-1:2010 is applicable except as follows:

9.7 Electric supply, water supply, etc.

9.7.3

Not applicable.

9.7.4

Not applicable.

9.8 Climatic conditions

9.8.3

Not applicable.

10 Information to be reported

This clause of IEC 60704-1:2010 is applicable except as follows:

10.3 Test conditions for the appliance

10.3.4

Not applicable.

10.3.5

Not applicable.

10.3.8

Not applicable.

Annexes

The annexes of IEC 60704-1:2010 apply with the following exception:

Annex B
(normative)

Test enclosure

This annex of IEC 60704-1:2010 is not applicable.

Bibliography

Addition:

IEC 61254:1993, *Electric shavers for household use – Methods for measuring the performance*

IEC 62863:2017, *Method of measuring performances of electric hair clippers or trimmers for household use*

SOMMAIRE

COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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APPAREILS ÉLECTRODOMESTIQUES ET ANALOGUES – CODE D'ESSAI POUR LA DÉTERMINATION DU BRUIT AÉRIEN –

Partie 2-8: Exigences particulières pour les rasoirs et les tondeuses à barbe ou à cheveux électriques

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La Norme internationale IEC 60704-2-8 a été établie par le sous-comité 59L: Petits appareils domestiques, du comité d'études 59 de l'IEC: Aptitude à la fonction des appareils électrodomestiques et analogues.

Cette deuxième édition annule et remplace la première édition parue en 1997. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

a) le domaine d'application des produits a été élargi aux tondeuses à barbe et à cheveux;
b) des écarts-types sont fournis pour les niveaux de puissance acoustique au 1.1.3;

c) les références normatives ont été mises à jour (ISO 3744:2010 et ISO 3743-1:2010);

d) le présent document a fait l'objet de réajustements par rapport à l'IEC 60704-1:2010;

e) le présent document a été mis à jour pour être conforme aux Directives ISO/IEC, Partie 2.

Le texte de cette norme est issu des documents suivants:

FDIS	Rapport de vote
59L/176/FDIS	59L/177/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de cette norme.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2.

La présente Partie 2-8 est destinée à être utilisée conjointement avec la troisième édition (2010) de l'IEC 60704-1, *Appareils électrodomestiques et analogues – Code d'essai pour la détermination du bruit aérien – Partie 1: Exigences générales*.

Le texte correspondant de l'IEC 60704-1:2010 tel que modifié par la présente norme constitue le code d'essai pour les rasoirs et les tondeuses à barbe ou à cheveux.

La présente Partie 2-8 complète ou modifie les articles correspondants de l'IEC 60704-1:2010, de façon à constituer le code d'essai pour les rasoirs et les tondeuses à barbe ou à cheveux. Lorsqu'un paragraphe particulier de l'IEC 60704-1:2010 n'est pas mentionné dans cette Partie 2-8, ce paragraphe s'applique pour autant que cela soit raisonnable. Lorsque la présente norme mentionne "addition", "modification" ou "remplacement", il convient d'adapter les exigences, modalités d'essai ou commentaires correspondants de l'IEC 60704-1:2010 en conséquence.

Les paragraphes, tableaux et figures qui s'ajoutent à ceux de l'IEC 60704-1:2010 sont numérotés à partir de 101.

A l'exception des notes figurant dans un nouveau paragraphe ou des notes de l'IEC 60704-1:2010, les notes sont numérotées à partir de 101, y compris celles figurant dans un article ou paragraphe remplacé.

Les annexes qui sont ajoutées sont désignées AA, BB, etc.

Une liste de toutes les parties de la série IEC 60704, publiées sous le titre général *Appareils électrodomestiques et analogues – Code d'essai pour la détermination du bruit aérien*, peut être consultée sur le site web de l'IEC.

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INTRODUCTION

Les conditions de mesure spécifiées dans le présent document garantissent une stabilité suffisante du bruit émis ainsi que la reproductibilité dans différents laboratoires, tout en simulant autant que possible l'usage réel des rasoirs et des tondeuses à barbe ou à cheveux.

Il est recommandé de considérer la détermination des niveaux de bruit comme faisant partie d'une procédure d'essais d'ensemble couvrant de nombreux aspects des propriétés et de l'aptitude à la fonction des rasoirs et des tondeuses à barbe ou à cheveux.

NOTE Comme cela est indiqué dans l'introduction de l'IEC 60704-1:2010, ce code d'essai concerne uniquement le bruit aérien.

APPAREILS ÉLECTRODOMESTIQUES ET ANALOGUES – CODE D'ESSAI POUR LA DÉTERMINATION DU BRUIT AÉRIEN –

Partie 2-8: Exigences particulières pour les rasoirs et les tondeuses à barbe ou à cheveux électriques

1 Domaine d'application et objet

L'article correspondant de l'IEC 60704-1:2010 s'applique avec les exceptions suivantes.

1.1 Domaine d'application

1.1.1 Généralités

Remplacement:

Le présent document s'applique aux rasoirs et aux tondeuses à barbe ou à cheveux électriques pour usages domestiques et analogues, alimentés à partir du réseau ou par piles ou accumulateurs.

Le terme "usages analogues" couvre les usages dans les hôtels, hôpitaux, magasins, bureaux, etc.

NOTE 101 Le présent document ne s'applique pas aux rasoirs et aux tondeuses à barbe ou à cheveux qui ne sont pas alimentés par des moyens électriques (mais par un dispositif à ressort, par exemple).

NOTE 102 Si possible, le présent document peut également être appliqué aux appareils électriques analogues tels que les appareils d'épilation.

1.1.2 Types de bruit

Remplacement:

Les méthodes spécifiées dans l'ISO 3743-1, l'ISO 3743-2 et l'ISO 3744 peuvent être utilisées pour mesurer le bruit émis par les rasoirs, les tondeuses à barbe ou à cheveux.

1.1.3 Dimensions de la source

Remplacement:

La méthode spécifiée dans l'ISO 3744:2010 s'applique aux sources de bruit de toutes dimensions. Des limitations relatives aux dimensions de la source sont indiquées au Paragraphe 1.2 de l'ISO 3743-1:2010 et à l'Article 5 de l'ISO 3743-2:2018.

1.2 Objet

Addition:

Les exigences relatives à la déclaration des valeurs d'émission sonore n'entrent pas dans le domaine d'application du présent document.

NOTE 101 Pour la détermination et la vérification des valeurs d'émission sonore déclarées dans les spécifications du produit, voir l'IEC 60704-3.