

# SLOVENSKI STANDARD

## SIST EN 60335-2-8:2016

01-januar-2016

### Nadomešča:

**SIST EN 60335-2-8:2003**

**SIST EN 60335-2-8:2003/A1:2006**

**SIST EN 60335-2-8:2003/A2:2009**

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**Gospodinjski in podobni električni aparati - Varnost - 2-8. del: Posebne zahteve za električne brivnike, strižnike za lase in podobno**

Household and similar electrical appliances - Safety - Part 2-8: Particular requirements for shavers, hair clippers and similar appliances

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Appareils électrodomestiques et analogues - Sécurité - Partie 2-8: Règles particulières pour les rasoirs, les tondeuses et les appareils analogues

**Ta slovenski standard je istoveten z: EN 60335-2-8:2015**

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### **ICS:**

13.120	Varnost na domu	Domestic safety
97.170	Oprema za nego telesa	Body care equipment

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**en**

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EUROPEAN STANDARD

**EN 60335-2-8**

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2015

ICS 13.120; 97.170

Supersedes EN 60335-2-8:2003

English Version

Household and similar electrical appliances - Safety -  
Part 2-8: Particular requirements for shavers, hair clippers and  
similar appliances  
(IEC 60335-2-8:2012 , modified)

Appareils électrodomestiques et analogues - Sécurité -  
Partie 2-8: Exigences particulières pour les rasoirs, les  
tondeuses et appareils analogues  
(IEC 60335-2-8:2012 , modifiée)

Sicherheit elektrischer Geräte für den Hausgebrauch und  
ähnliche Zwecke - Teil 2-8: Besondere Anforderungen für  
Rasiergeräte, Haarschneidemaschinen und ähnliche Geräte  
(IEC 60335-2-8:2012 , modifiziert)

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

**EN 60335-2-8:2015****European foreword**

This document (EN 60335-2-8:2015) consists of the text of IEC 60335-2-8:2012 prepared by IEC/TC 61 "Safety of household and similar electrical appliances", together with the common modifications prepared by CLC/TC 61 "Safety of household and similar electrical appliances".

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2016-05-20
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-07-20

This document supersedes EN 60335-2-8:2003.

This Part 2-8 is to be used in conjunction with EN 60335-1:2012 and its amendments.

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 60335-2-8:2012 or in IEC 60335-1:2010 are prefixed "Z".

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s), see informative Annex ZZ, which is an integral part of this document.

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

**Endorsement notice**

The text of the International Standard IEC 60335-2-8:2012 was approved by CENELEC as a European Standard with agreed common modifications.

## Introduction

*Add:*

The principle objectives of Low Voltage Directive 2006/95/EC, are covered in this European Standard. The Essential Health and Safety Requirements of the Machinery Directive 2006/42/EC, which can be applicable to some appliances, covered by this part have also been taken into account.

## 1 Scope

This clause of Part 1 is replaced by the following.

This European Standard deals with the safety of electric shavers, hair clippers and similar appliances intended for the household environment and commercial purposes, their **rated voltage** being not more than 250 V.

NOTE Z101 Battery-operated appliances and other d.c. supplied appliances are within the scope of this standard.

NOTE Z102 Examples of similar appliances are **animal clippers** and those used for manicure and pedicure.

NOTE Z103 Examples of appliance for household environment are appliances for typical housekeeping functions used in the household environment that may also be used by non-expert users for typical housekeeping functions:

- in shops, offices and other similar working environments;
- in farm houses;
- by clients in hotels, motels and other residential type environments;
- in bed and breakfast type environments.

Appliances and machines intended to be used by expert or trained users in shops, in light industry and on farms, and appliances and machines which are declared to be for commercial use by lay persons are within the scope of this standard.

Additional requirements for such appliances are given in Annex ZE.

NOTE Z104 Examples of such appliances and machines are manicure and pedicure appliances, **animal clippers** and **animal shearers**, for commercial use, and appliances for hairdressers.

This standard deals with the reasonably foreseeable hazards presented by appliances and machines that are encountered by all persons.

However, in general, it does not take into account:

- **children** playing with the appliance;
- the use of the appliances by **very young children**;
- the use of shaver and **wet shaver** by **young children**;
- the use of the animal clipper, hair clipper, and appliances for manicure and pedicure by **young children** without supervision;
- the use of **animal shearer** by children;

It is recognized that **very vulnerable people** may have needs beyond the level addressed in this standard.

**EN 60335-2-8:2015**

NOTE Z105 Attention is drawn to the fact that

- for appliances intended to be used in vehicles or on board ships or aircraft, additional requirements may be necessary,
- in many countries, additional requirements are specified by the national health authorities, the national authorities responsible for the protection of labour, the national water supply authorities and similar authorities.

NOTE Z106 This standard does not apply to

- appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas),
- massage appliances (EN 60335-2-32),
- appliances for medical purposes (EN 60601).

**2 Normative references**

Add the following standards:

EN ISO 3744, *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* (ISO 3744)

EN ISO 4871, *Acoustics – Declaration and verification of noise emission values of machinery and equipment* (ISO 4871)

EN ISO 11203, *Acoustics – Noise emitted by machinery and equipment – Determination of emission sound pressure levels at a work station and at other specified positions from the sound power level* (ISO 11203)

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**7 Marking and instructions**

**7.10** Replace the first sentence of the fourth paragraph:

Devices, except for those on **animal shearers**, used to start/stop operational functions of the appliance, if any, shall be distinguished from other manual devices by means of shape, or size, or surface texture, or position, etc.

**7.12** Replace the fourth paragraph from Part 1 by the following:

Animal clipper, hair clipper, and appliances for manicure and pedicure can be used by **children** aged from 3 years under supervision.

Shaver, **wet shaver**, **animal clipper**, **hair clipper**, and appliances for manicure and pedicure can be used by **children** aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

**Animal shearers** can only be used by trained personnel.

## 8 Protection against access to live parts

*Modification:*

Replace the text in Part 2 by “This clause of Part 1 is applicable except as follows:”

**8.1.1** Add after the third paragraph the following sentence:

Test probe 18 is not applied to **animal shearers**.

**8.2** Add to the compliance clause the following sentence:

Test probe 18 is not applied to **animal shearers**.

**20.2** Add to the compliance clause the following sentence:

Test probe 18 is not applied to **animal shearers**.

## 22 Construction

**22.12** *Modification*

Add to Note Z1. This is not applicable to **animal shearers**.

## Annexes

The annexes of Part 1 are applicable except as follows.

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## Annex ZE (normative)

### Specific additional requirements for appliances and machines intended for commercial use

Annex ZE of Part 1 is applicable with the following modifications:

#### 1 Scope

*Replacement:*

This Annex ZE deals with additional requirements concerning appliances and machines intended to be used by expert or trained users in shops, in hairdressers, in light industry, on farms and appliances and machines which are declared to be for commercial use by lay persons.

NOTE ZE1 The statement from the manufacturer in the product information concerning the specific product is the criterion that has to be considered to determine the intended use of the appliance. The statement needs to reflect accurately the reasonably foreseeable use of the product.

*After the last paragraph, add the following:*

All products covered by this European Standard, except **animal shearers**, do not create a relevant noise hazard, therefore no specific provisions concerning noise emitted by such products are given.

NOTE ZE2 The comparable short-term noise exposure for the animal is considered to cause no relevant hazard.

#### 2 Normative references

*Replace the text by the following:*

This clause of Part 1 is applicable except as follows.

*Add the following standards:*

EN ISO 5349-1, *Mechanical vibration – Measurement and evaluation of human exposure to hand-transmitted vibration – Part 1: General requirements* (ISO 5349-1)

EN ISO 5349-2, *Mechanical vibration – Measurement and evaluation of human exposure to hand-transmitted vibration – Part 2: Practical guidance for measurement at the workplace* (ISO 5349-2)

#### 3 Terms and definitions

*This clause of Annex ZE of Part 1 is applicable.*

#### 4 General requirement

*This clause of Annex ZE of Part 1 is applicable.*

#### 7 Marking and instructions

*This clause of Annex ZE of Part 1 is applicable except as follows:*

##### 7.12 Addition:

The instructions shall indicate the substance of the following:

“This appliance is designed to be used in commercial areas”.



**7.12.ZE1**

Replace the sixth bullet item by the following:

- On airborne noise emissions, determined and declared in accordance with Annex ZAA:
  - For all products except **animal shearers**, it shall be stated that the A-weighted sound pressure level is below 70 dB;
  - For **animal shearers**, the A-weighted emission sound pressure level where this exceeds 70 dB(A) shall be stated. If the A-weighted sound pressure level is below 70 dB, no value need be given, but the instructions shall state that the A-weighted sound pressure level is below 70 dB,"

Add a new seventh bullet item as follows:

- "The instructions shall give the following information concerning vibrations transmitted by the appliance to the hand-arm system:
  - the vibration total value to which the hand-arm system is subjected, measured according to EN ISO 5349-1 and EN ISO 5349-2, if it exceeds or equals 2,5 m/s<sup>2</sup>, the uncertainty of measurement shall also be stated. If the value does not exceed 2,5 m/s<sup>2</sup>, the instructions shall state that the vibration level is below 2,5 m/s<sup>2</sup>;

These values shall be either those actually measured for the machinery in question or those established on the basis of measurements taken for technically comparable machinery which is representative of the machinery to be produced."

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**19 Abnormal operation**

*This clause of Annex ZE of Part 1 is not applicable*

**20 Stability and mechanical hazards**

*This clause of Annex ZE of Part 1 is applicable.*

**21 Mechanical strength**

*This clause of Annex ZE of Part 1 is applicable.*

**22 Construction**

*This clause of Annex ZE of Part 1 is applicable except as follows:*

**22.ZE.6**

*This sub-clause is not applicable.*

## Annex ZAA (normative)

### Emission of acoustical noise

#### ZAA.1 Noise reduction

Noise reduction at **animal shearers** is an integral part of the design process and shall be achieved by particularly applying measures at source to control noise, see for example EN ISO 11688-1. The success of the applied noise reduction measures is assessed on the basis of the actual noise emission values in relation to other appliances of the same type with comparable non-acoustical technical data.

#### ZAA.2 Noise test code

##### ZAA.2.1 Emission sound pressure level determination

The A-weighted emission sound pressure level is determined in accordance with EN ISO 11203 for appliances with  $Q = 8$  dB(A)

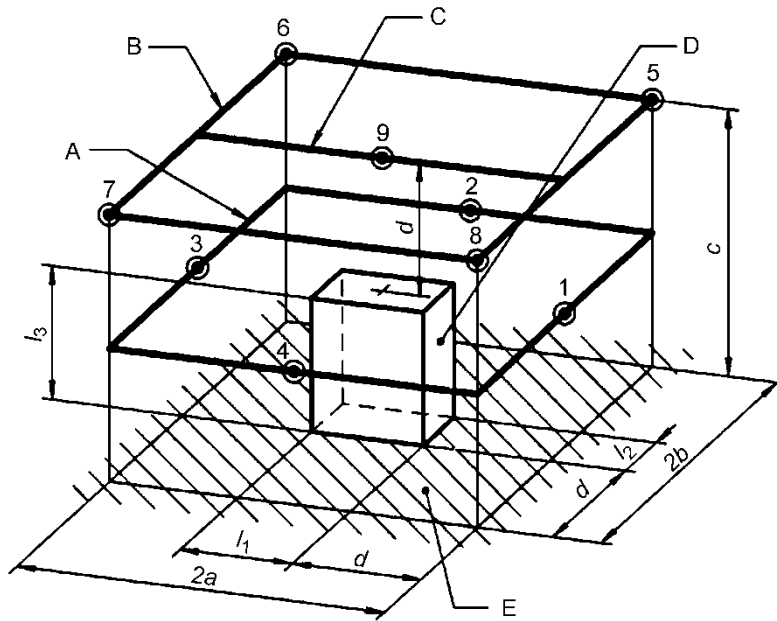
##### ZAA.2.2 Sound power level determination

For the determination of the A-weighted sound power level, EN ISO 3744 shall be used, subject to the following modifications or additions:

- a) the microphones shall be arranged in accordance with Figure ZAA.101,
- b) the measurement surface shall be a parallelepiped with a measurement distance of  $d = 1$  m from the reference box as defined in EN ISO 3744.

SIST EN 60335-2-8:2016

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**Key**

A measuring path 1

B measuring path 2

C measuring path 3

D reference box

E reflecting surface

 $l_1, l_2, l_3$  dimension of the parallelepiped $d$  measurement distance

1 ... 9 microphone positions lateral position of microphone (for operator's position)

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**Figure ZAA.101 — Measurement area and positions of the microphones for appliances**

**ZAA.2.3 Mounting and installation conditions**

The **animal shearer** under test shall be new. It shall be equipped with the shearing blade, as recommended by the manufacturer, which affects the acoustic properties causing the highest noise level.

The **animal shearer** shall be positioned so that its axis is at  $45^\circ$  between the microphone positions 1 – 4 and 2 – 3; its geometrical centre shall be 1 m above the ground (reflecting plane).

For measurement the animal shearer shall be fixed horizontally in a stable condition using the arrangement of Figure ZAA.102.

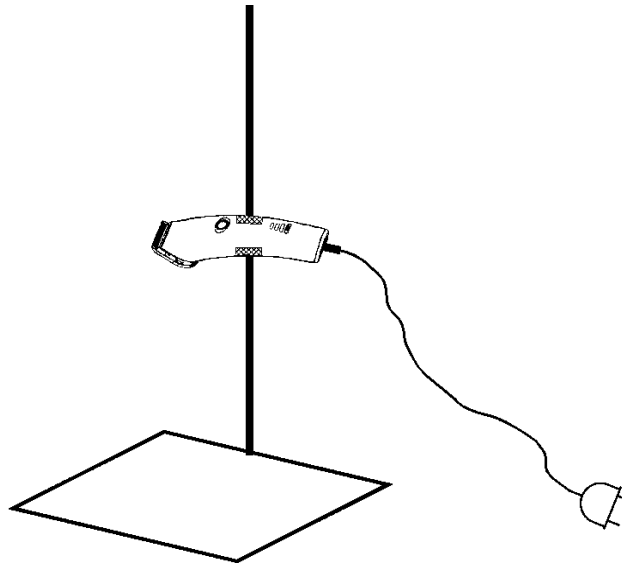


Figure ZAA.102 — Fixing system for animal shearers

#### ZAA.2.4 Operating conditions

The appliance shall be operated in **normal use** at maximum speed and according to the instructions.

The operating condition shall be identical for the determination for both sound power and emission sound pressure level at the specified positions.

#### ZAA.2.5 Measurement uncertainties

The total measurement uncertainty of the noise emission values determined according to this European Standard is depending on the standard deviation  $\sigma_{R0}$  given by the applied noise emission measurement method and the uncertainty associated with the instability of the operating and mounting conditions  $\sigma_{omc}$ . The resulting total uncertainty is then calculated from

$$\sigma_{tot} = \sqrt{\sigma_{R0}^2 + \sigma_{omc}^2}$$

The upper bound value of  $\sigma_{R0}$  is about 1,5 dB for the grade 2 measurement methods dealing with the determination of the emission sound pressure level or the sound power level.

NOTE 1 For machines with a rather constant noise emission, a value of 0,5 dB for  $\sigma_{omc}$  can apply. In other cases, e.g. a large influence of the material flow into and out of the machine or material flow that varies in an unpredictable manner, it is possible that a value of 2 dB may be more appropriate. Methods to determine  $\sigma_{omc}$  are described in the basic measurement standards.

The expanded measurement uncertainty  $U$ , in decibels, shall be calculated from

$$U = k \sigma_{tot}$$

where

$k$  is the coverage factor.

NOTE 2 The expanded measurement uncertainty depends on the degree of confidence that is desired. For the purpose of comparing the result with a limit value, it is appropriate to apply the coverage factor for a one-sided normal distribution. In that case, the coverage factor  $k = 1,6$  corresponds to a 95 % confidence level. Further information is given in EN ISO 4871. Please note that the expanded measurement uncertainty  $U$  is denoted as  $K$  in EN ISO 4871.

NOTE 3 The expanded measurement uncertainty as described in this European Standard does not include the standard deviation of production which is used in EN ISO 4871 for the purpose of making a noise declaration for batches of machines.

#### ZAA.2.6 Information to be recorded

The information to be recorded covers all of the technical requirements of this noise test code. Any deviations from this noise test code or from the basic standards upon which it is based are to be recorded together with the technical justification for such deviations.