

STN	Elektrické spotrebiče pre domácnosť a na podobné účely. Bezpečnosť. Časť 2-100: Osobitné požiadavky na ručné záhradné fúkače, vysávače a kombinované fúkače/vysávače napájané zo siete.	STN EN 50636-2-100 36 1055
------------	--	--

Household and similar electrical appliances - Safety - Part 2-100: Particular requirements for hand-held mains-operated garden blowers, vacuums and blower vacuums

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 10/14

Obsahuje: EN 50636-2-100:2014

119743

Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, odbor SÚTN, 2014
Podľa zákona č. 264/1999 Z. z. v znení neskorších predpisov sa môžu slovenské technické normy rozmnožovať a rozširovať iba so súhlasom Úradu pre normalizáciu, metrológiu a skúšobníctvo SR.

EUROPEAN STANDARD

EN 50636-2-100

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2014

ICS 13.120; 65.060.70

English Version

**Household and similar electrical appliances - Safety - Part 2-100:
Particular requirements for hand-held mains-operated garden
blowers, vacuums and blower vacuums**

Appareils électrodomestiques et analogues - Sécurité -
Partie 2-100 : Exigences particulières pour les souffleurs,
aspirateurs et aspiro-souffleurs portatifs pour le jardin,
alimentés par le secteur

Sicherheit elektrischer Geräte für den Hausgebrauch und
ähnliche Zwecke - Teil 2-100: Besondere Anforderungen für
handgehaltene netzbetriebene Laubgebläse und/oder -
sauger

This European Standard was approved by CENELEC on 2013-11-25. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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

Contents

Foreword	4
Introduction.....	6
1 Scope	7
2 Normative references.....	8
3 Definitions	9
4 General requirement.....	10
5 General conditions for the tests	10
6 Classification	11
7 Marking and instructions	11
8 Protection against access to live parts.....	14
9 Starting of motor operated appliances.....	14
10 Power input and current.....	14
11 Heating	14
12 Void.....	14
13 Leakage current and electric strength at operating temperature	14
14 Transient overvoltages	14
15 Moisture Resistance	15
16 Leakage current and electric strength	15
17 Overload protection of transformers and associated circuits	15
18 Endurance	15
19 Abnormal operations.....	15
20 Stability and mechanical hazards.....	15
21 Mechanical strength.....	20
22 Construction	22
23 Internal wiring	22
24 Components	22
25 Supply connection and external flexible cords.....	23
26 Terminals for external conductors	23
27 Provision for earthing.....	23
28 Screws and connections	23
29 Clearances, creepage distances, and solid insulation	23
30 Resistance to heat and fire	23
31 Resistance to rusting	24
32 Radiation, toxicity and similar hazards.....	24

Annexes	25
Annex B (normative) Appliances powered by rechargeable batteries.....	25
Annex AA (normative) Safety signs and symbols which may be used on blowers and blower vacs	26
Annex BB (normative) Vibration	29
Annex CC (normative) Noise test code – Engineering method (grade 2)	32
Annex DD (informative) Example of a material and construction fulfilling the requirements for an artificial surface	40
Annex EE (informative) Safety instructions for hand-held mains-operated electrical garden vacuums, and garden blower/vacuums with or without shredding means and garden blowers.....	42
Annex ZZ (informative) Coverage of Essential Requirements of EU Directives	45
Bibliography.....	46

Figures

Figure 1 – Young Adult Arm Probe.....	17
Figure 2 – Adult Arm Probe.....	18
Figure 3 – Ceramic Prism	22
Figure AA.1 – “Read operator’s manual”	26
Figure AA.2 – “SWITCH OFF: Remove plug from mains before cleaning or maintenance”	26
Figure AA.3 – “Do not expose to rain”	27
Figure AA.4 – “Wear eye protection”	27
Figure AA.5 – “Keep bystanders away”	27
Figure AA.6 – “Disconnect the mains plug if the cord becomes damaged or entangled”	28
Figure BB.1 – Examples of transducer location/orientation (hand-held machines)	31
Figure CC.1 – Microphone positions on the hemisphere (see Table CC.1)	33
Figure CC.2 – Test set-up for machines with suspension point	34
Figure CC.3 – Test set-up for machines without suspension point.....	35
Figure DD.1 – Sketch of the measurement surface covered with an artificial surface (not to scale)	41

Tables

Table CC.1 – Co-ordinates of microphone positions.....	34
Table CC.2 – Absorption coefficients	36

Foreword

This document (EN 50636-2-100:2014) has been prepared by CLC/TC 116, "Safety of motor-operated electric tools".

The following dates are 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) 2014-12-20
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2016-11-25

EN 50636-2-100:2014 includes the following significant technical changes:

- rewording of some clauses;
- alignment to the European Machinery Directive 2006/42/EC;
- alignment to EN 60335-1:2012.

This document is to be used in conjunction with EN 60335-1:2012 and its amendments "*Household and similar electrical appliances - Safety – Part 1: General requirements*".

When "Part 1" is mentioned in this standard, it refers to EN 60335-1:2012.

This document supplements or modifies the corresponding clauses in Part 1, so as to convert that publication into the European Standard "*Particular requirements for **hand-held** mains-operated **garden blowers, vacuums and blower vacuums***".

Where a particular subclause of Part 1 is not mentioned in this document, that subclause applies as far as is relevant. Where this standard states "addition", "modification" or "replacement", the relevant text in Part 1 is to be adapted accordingly.

Compliance with the relevant clauses of Part 1 together with this Part 2 provides one means of conforming to the specified essential health and safety requirements of the Directive.

This European Standard follows the overall requirements of EN ISO 12100:2010.

The following numbering system is used:

- subclauses, notes, tables and figures that are numbered starting from 101 are additional to those in Part 1;
- additional annexes are lettered AA, BB, etc.;

NOTE In this European Standard the following print types are used:

- requirements proper: in roman type;
- *test specifications: in italic type;*
- explanatory matter: in smaller roman type.

Words in **bold** in the text are defined in clause 3. When a definition concerns an adjective, the adjective and the associated noun are also in bold.

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.

For the relationship with EU Directive 2006/42/EC, see informative Annex ZZ, which is an integral part of this document.

Warning: Other requirements arising from other EU Directives can be applicable to the products falling within the scope of this European Standard.

Introduction

This document is a type C standard as stated in EN ISO 12100:2010.

The machinery concerned and the extent to which hazards, hazardous situations and events are covered is as indicated in the scope of this document.

When provisions of this type C standard are different from those which are stated in type A or B standards, the provisions of this type C standard take precedence over the other standards, for machines which have been built and designed to the provisions of this type C standard.

1 Scope

Replacement:

This European Standard specifies the safety requirements and their verification for the design and construction of **hand-held** mains-operated electrical **garden vacuums**, and **garden blower/vacuums** with or without **shredding means** and **garden blowers**, hereinafter referred to as **machine(s)**, for use at and around the home or for similar purposes, their **rated voltage** being not more than 250 V single phase.

This European Standard does not apply to:

- machines powered by combustion engines;

NOTE 1 Combustion engine driven machines are covered by EN 15503.

- machines driven by an external power source;
- machines powered from a 3 phase supply;
- vacuum cleaners intended primarily for use indoors, for water suction cleaning or animal grooming;

NOTE 2 EN 60335-2-2 deals with this type of machine.

- walk-behind, hand-guided (support-wheeled) and ride-on machines;
- combination of a mains driven and/or battery powered blowers and vacuums with internal combustion engines (hybrid);
- **back-pack powered blowers** and **back-pack powered vacuums**.

EMC and environmental aspects, except noise, have not been considered in this standard.

This European Standard deals with all the significant hazards presented by **hand-held** mains-operated electrical **garden vacuums**, **garden blower/vacuums** with or without **shredding means** and **garden blowers** when they are used as intended and under conditions of misuse which are reasonably foreseeable.

This European Standard is not applicable to machines, which are manufactured before the date of publication of this document by CENELEC.

2 Normative references

This clause of Part 1 is applicable except as follows:

Addition:

EN 60335-1:2012, *Household and similar electrical appliances – Safety – Part 1: General requirements* (IEC 60335-1:2010, mod.)

EN 60068-2-75:1997, *Environmental testing – Part 2: Tests – Test Eh: Hammer tests* (IEC 60068-2-75:1997)

EN 62233:2008, *Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure* (IEC 62233:2005, mod.)

EN ISO 354:2003, *Acoustics – Measurement of sound absorption in a reverberation room* (ISO 354:2003)

EN 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* (ISO 3744:2010)

EN ISO 4871:2009, *Acoustics – Declaration and verification of noise emission values of machinery and equipment* (ISO 4871:1996)

EN ISO 11201:2010, *Acoustics - Noise emitted by machinery and equipment - Determination of emission sound pressure levels at a work station and at other specified positions in an essentially free field over a reflecting plane with negligible environmental corrections* (ISO 11201:2010)

EN ISO 11688-1:2009, *Acoustics – Recommended practice for the design of low-noise machinery and equipment – Part 1: Planning* (ISO/TR 11688-1:1995)

EN ISO 12100:2010, *Safety of machinery - General principles for design - Risk assessment and risk reduction* (ISO 12100:2010)

EN ISO 13849-1:2008, *Safety of machinery – Safety-related parts of control systems – Part 1: General principles for design* (ISO 13849-1:2006)

EN ISO 13849-2:2012, *Safety of machinery – Safety-related parts of control systems – Part 2: Validation* (ISO 13849-2:2012)

EN ISO 13857:2008, *Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs* (ISO 13857:2008)

ISO 7000, *Graphical symbols for use on equipment – Registered symbols*

ISO 11090-1:1998, *Machine tools – Test conditions for die sinking electro-discharge machines (EDM) – Terminology and testing of accuracy – Part 1: Single column machines (cross slide table type and fixed table type)*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN