



**SLOVENSKI STANDARD**  
**SIST EN 50636-2-107:2015/oprA4:2023**

**01-oktober-2023**

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**Varnost gospodinjskih in podobnih električnih aparatov - 2-107. del: Posebne zahteve za baterijske robotsko vodene električne vrtno kosilnice - Dopolnilo A4**

Safety of household and similar appliances - Part 2-107: Particular requirements for robotic battery powered electrical lawnmowers

Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke - Teil 2-107: Besondere Anforderungen für batteriebetriebene Roboter-Rasenmäher

Appareils électrodomestiques et analogues - Partie 2-107: Exigences particulières relatives aux tondeuses à gazon électriques robotisées alimentées par batteries

**Ta slovenski standard je istoveten z: EN 50636-2-107:2015/prA4:2023**

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**ICS:**

13.120	Varnost na domu	Domestic safety
65.060.70	Vrtnarska oprema	Horticultural equipment

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NORME EUROPÉENNE  
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**DRAFT**  
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## Safety of household and similar appliances - Part 2-107: Particular requirements for robotic battery powered electrical lawnmowers

Appareils électrodomestiques et analogues - Partie 2-107:  
Exigences particulières relatives aux tondeuses à gazon  
électriques robotisées alimentées par batteries

Sicherheit elektrischer Geräte für den Hausgebrauch und  
ähnliche Zwecke - Teil 2-107: Besondere Anforderungen für  
batteriebetriebene Roboter-Rasenmäher

This draft amendment prA4, if approved, will modify the European Standard EN 50636-2-107:2015; it is submitted to CENELEC members for enquiry.

Deadline for CENELEC: 2023-10-27.

It has been drawn up by CLC/TC 116.

If this draft becomes an amendment, CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

This draft amendment was established by CENELEC 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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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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**EN 50636-2-107:2015/prA4:2023**

	Page
<b>1 Contents</b>	
<b>2 European foreword</b> .....	<b>3</b>
<b>3 1 Modification to Clause 2, “Normative references”</b> .....	<b>3</b>
<b>4 2 Modification to Clause 3, “Definitions”</b> .....	<b>3</b>
<b>5 3 Modification to Clause 22, “Construction”</b> .....	<b>4</b>
<b>6 4 Modification to Clause 24, “Components“</b> .....	<b>5</b>

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## 7 European foreword

8 This document (EN 50636-2-107:2015/prA4:2023) has been prepared by CLC/TC 116 “Safety of  
9 motor-operated electric tools”.

10 This document is currently submitted to the Enquiry.

11 The following dates are proposed:

- latest date by which the existence of this (doa) dor + 6 months  
document has to be announced at national  
level
- latest date by which this document has to be (dop) dor + 12 months  
implemented at national level by publication of  
an identical national standard or by  
endorsement
- latest date by which the national standards (dow) dor + 36 months  
conflicting with this document have to be (to be confirmed or  
withdrawn modified when voting)

12 This amendment was developed to incorporate a modification to be made to subclause 22.105.2 (which  
13 was made previously by IEC 60335-2-107:2017/A2:2021).

14 This document has been prepared under a Standardization Request given to CENELEC by the  
15 European Commission and the European Free Trade Association, and supports essential requirements  
16 of EU Directive(s) / Regulation(s).

17 For relationship with EU Directive(s) / Regulation(s), see informative Annex ZZ, which is an integral part  
18 of EN 50636-2-107:2015, and was amended by EN 50636-2-107:2015/A2:2020 and  
19 EN 50636-2-107:2015/A3:2021.

## 20 1 Modification to Clause 2, “Normative references”

21 *Replace the existing normative reference “EN 61058-1:2002” and footnote 1 with the following:*

22 “

23 EN IEC 61058-1:2018, *Switches for appliances - Part 1: General requirements*

24 ”

## 25 2 Modification to Clause 3, “Definitions”

26 *Replace the existing 3.132 with the following:*

### 27 3.132

#### 28 sensor

29 device that responds to physical stimuli (such as, but not limited to, heat, light, sound, pressure,  
30 magnetism, motion) and transmits the resulting signal or data providing a measurement, operating a  
31 **control**, or both

32 Note 1 to entry: A lift sensor is a device that senses when the machine is lifted bodily from the ground.

33 Note 2 to entry: An obstruction sensor is a device that senses a person or obstruction using either physical contact  
34 or non-contact means.

## EN 50636-2-107:2015/prA4:2023

35 Note 3 to entry: A tilt sensor is a device that senses when the machine is at or above a predetermined angle of  
36 incline.

37 Note 4 to entry: A rollover sensor is a device that senses when the machine is inverted.

### 38 **3 Modification to Clause 22, “Construction”**

39 *Replace the existing subclause 22.105.2 with the following:*

#### 40 **“22.105.2 Obstruction sensors**

41 The machine shall be provided with (an) **obstruction sensor(s)**. In **automatic mode**, the **sensor(s)**  
42 shall be active and capable of performing its intended function in all operating positions and in all  
43 directions of travel, except those directions of travel where

44 — the **cutting means** is not operating and the distance travelled does not exceed 2,0 times the length  
45 of the machine; or

46 — the **cutting means** is operating and the distance travelled does not exceed the distance from the  
47 edge of the machine in the direction of travel to the nearest **cutting means tip circle**.

48 NOTE 101 The machine does not need to incorporate discrete sensing devices for each **sensor** requirement. The  
49 various sensing functions can be achieved by fewer devices that respond to multiple stimuli. Sensing requirements  
50 can also be fulfilled by mechanical devices instead of electrical circuits.

51 The maximum force applied by the machine against an obstruction in **automatic mode** shall not be  
52 greater than

53 — 260 N during the first 0,5 s after impact and a minimum of 50 N is exceeded; and

54 — 130 N thereafter.

55 NOTE 102 ISO/TS 15066 provides guidance on relevant values of maximum force.

56 If an **obstruction sensor** is activated, the **traction drive** in the direction of travel shall stop within

57  $t_{ts} = D/v$ , where

$t_{ts}$  is the **traction drive stopping time**;

$D$  is the distance from the front edge of the machine to the nearest edge of the nearest  
**cutting means tip circle**; and

$v$  is the velocity of the machine upon approach.

58 The machine shall then restart in a different direction to allow the machine to move away from the object  
59 such that the **sensor** is deactivated within 3 s of initial activation. If the **sensor** is not deactivated within  
60 3 s of initial activation, the **cutting means** shall stop as required by 20.102.2.

61 An additional non-contact **sensor**, if relied upon to reduce speed in order to fulfil the requirement for  
62 maximum force upon impact, is permitted providing that it responds to a rigid non-metallic target:

63 — of cylindrical shape;

64 — of  $(70 \pm 2)$  mm diameter by  $(400 \pm 5)$  mm height, standing on end;

65 — of a colour or shade that matches the background; and

66 — normalized to the ambient temperature.

67 *Compliance is checked by inspection, by measurement, by the following test and by 20.102.2.*

68 The machine is placed on a level test surface as described in CC.3. The machine shall be made to  
 69 collide with a force measuring means. The force to operate the **obstruction sensor** at impact shall be  
 70 measured parallel to the ground plane and vertically aligned with the point of contact with the force  
 71 measuring means. The point of contact shall not be higher than 150 mm from the ground plane. Friction,  
 72 misalignment and other factors associated with the mounting of the force measuring means shall  
 73 minimize error in the measurement.

74 The force is measured by means of an instrument which incorporates a rigid impact plate having a  
 75 diameter of  $(90 \pm 10)$  mm and a spring having a spring constant of  $(60 \pm 2)$  N/mm. The spring acts on a  
 76 sensing element which is connected to a measuring instrument having a bandwidth limited to  
 77  $(150 \pm 50)$  Hz and with an accuracy of 5 %. The sampling rate shall be at least double of the bandwidth.  
 78 A typical arrangement is shown in Figure 106.

79 The test is performed a total of five times. The maximum forces during the first 0,5 s after impact and  
 80 thereafter are computed as the average of each of the five measurements.

81 If compliance relies on the operation of an **electronic circuit**, the test is repeated under the following  
 82 condition:

83 1) the fault conditions in a) to g) of 19.11.2 applied one at a time to the **electronic circuit**.

84 If the **electronic circuit** is programmable, the software shall contain measures to control the fault/error  
 85 conditions specified in Table R.1 and is evaluated in accordance with the relevant requirements of  
 86 Annex R.

87 Alternatively, a non-contact **sensor** may fulfil the requirements of an **obstruction sensor**, providing that  
 88 it responds to a rigid non-metallic target:

89 — of cylindrical shape;

90 — of  $(25 \pm 2)$  mm diameter by (145 to 150) mm height, standing on end;

91 — of a colour or shade that matches the background; and

92 — normalized to the ambient temperature.

93 Compliance is checked by the following test and by 20.102.2.

94 The machine is placed on a level test surface as described in CC.3. It shall not be possible for the  
 95 machine to contact the rigid non-metallic target.

96 If compliance relies on the operation of an **electronic circuit**, the test is repeated under the following  
 97 condition:

98 • the fault conditions in a) to g) of 19.11.2 applied one at a time to the **electronic circuit**.

99 If the **electronic circuit** is programmable, the software shall contain measures to control the fault/error  
 100 conditions specified in Table R.1 and is evaluated in accordance with the relevant requirements of  
 101 Annex R.

102 If within 10 s of the machine stopping due to contact or avoidance of an object, the **obstruction**  
 103 **sensor(s)** has/have become deactivated, the drive to the **cutting means** may be restarted providing  
 104 the **cutting means** start-up indication procedure in 22.110 is completed.

105 If after 10 s of the machine stopping due to contact or avoidance of an object, the **obstruction sensor(s)**  
 106 has/have not become deactivated, the **traction drive** shall be deactivated. Restarting the **cutting**  
 107 **means** and **traction drive** shall only be possible by fulfilling the requirements of the restart procedure  
 108 in 20.102.6.

109 Compliance is checked by inspection and practical test.”

#### 110 4 Modification to Clause 24, “Components“

111 Replace the existing subclause 24.1.3 with the following: