SIST

SLOVENSKI STANDARD
SIST EN IEC 62841-4-3:2021

01-november-2021

Nadomešča:
SIST EN 60335-2-77:2010

Elektromotorna ročna orodja, prenosna orodja ter stroji za trato in vrt - Varnost - 4-3. del: Posebne zahteve za ročno vodene vrtne kosilnice (IEC 62841-4-3:2020)

Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery - Safety - Part 4-3: Particular requirements for pedestrian controlled walk-behind lawnmowers (IEC 62841-4-3:2020)

Elektrische motorbetriebene handgeführte Werkzeuge, transportable Werkzeuge und Rasen- und Gartenmaschinen - Sicherheit - Teil 4-3: Besondere Anforderungen für handgeführte Rasenmäher (IEC 62841-4-3:2020)

Outils électroportatifs à moteur, outils portables et machines pour jardins et pelouses - Sécurité - Partie 4-3: Exigences particulières pour tondeuses à gazon à conducteur à pied (IEC 62841-4-3:2020)

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65.060.70	Vrtnarska oprema	Horticultural equipment

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62841-4-3

August 2021

ICS 65.060.70

Supersedes EN 60335-2-77:2010 and all of its amendments and corrigenda (if any)

English Version

Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery - Safety - Part 4-3: Particular requirements for pedestrian controlled walk-behind lawnmowers (IEC 62841-4-3:2020)

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European Committee for Electrotechnical Standardization
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Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

The text of document 116/467/FDIS, future edition 1 of IEC 62841-4-3, prepared by IEC/TC 116 “Safety of motor-operated electric tools” was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62841-4-3:2021.

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) 2022–02–06
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2025–08–06

This document supersedes EN 60335-2-77:2010 and all of its amendments and corrigenda (if any).

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

Any feedback and questions on this document should be directed to the users’ national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 62841-4-3:2020 was approved by CENELEC as a European Standard without any modification.

IEC 62841-4-3

Edition 1.0 2020-11

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety –
Part 4-3: Particular requirements for pedestrian controlled walk-behind lawnmowers

Outils électroportatifs à moteur, outils portables et machines pour jardins et pelouses – Sécurité –
Partie 4-3: Exigences particulières pour tondeuses à gazon à conducteur à pied

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ELECTRIC MOTOR-OPERATED HAND-HELD TOOLS, TRANSPORTABLE TOOLS AND LAWN AND GARDEN MACHINERY – SAFETY –

Part 4-3: Particular requirements for pedestrian controlled walk-behind lawnmowers

FOREWORD

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International Standard IEC 62841-4-3 has been prepared by IEC technical committee 116: Safety of motor-operated electric tools.

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

FDIS	Report on voting
116/467/FDIS	116/478/RVD

Full information on the voting for the approval of this International 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 2.

This Part 4-3 is to be used in conjunction with the first edition of IEC 62841-1:2014.

This Part 4-3 supplements or modifies the corresponding clauses in IEC 62841-1, so as to convert it into the IEC Standard: Particular requirements for pedestrian controlled walk-behind lawnmowers.

Where a particular subclause of Part 1 is not mentioned in this Part 4-3, that subclause applies as far as reasonable. Where this document states “addition”, “modification” or “replacement”, the relevant text in Part 1 is to be adapted accordingly.

The following print types are used:

– requirements: in roman type;
– *test specifications: in italic type;*
– notes: in small roman type.

The terms defined in Clause 3 are printed in **bold typeface**.

Subclauses, notes, tables and figures which are additional to those in Part 1 are numbered starting from 101.

Subclauses, notes, tables and figures in Annex K and Annex L which are additional to those in the main body of this Part 4-3 are numbered starting from 301.

A list of all parts of the IEC 62841 series, under the general title: *Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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

NOTE The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 36 months from the date of publication.

ELECTRIC MOTOR-OPERATED HAND-HELD TOOLS, TRANSPORTABLE TOOLS AND LAWN AND GARDEN MACHINERY – SAFETY –

Part 4-3: Particular requirements for pedestrian controlled walk-behind lawnmowers

1 Scope

This clause of Part 1 is applicable, except as follows:

Addition:

This document applies to the design of pedestrian controlled walk-behind

– **cylinder lawnmowers**;

and

– **rotary lawnmowers**

equipped with

– metallic **cutting means**; and/or
– rigid non-metallic **cutting means**; and/or
– non-metallic **cutting means** with one or more cutting elements pivotally mounted on a generally circular drive unit, where these cutting elements rely on centrifugal force to achieve cutting, and have a kinetic energy for each single cutting element of greater than 10 J.

NOTE 101 Machines that have non-metallic **cutting means** and a kinetic energy for each single cutting element of less than or equal to 10 J are considered to be lawn trimmers.

This document does not apply to

– robotic lawnmowers;
– remote-controlled lawnmowers;
– flail mowers or flail-type attachments;
– scissors type lawnmowers;
– grassland mowers;
– sickle bar mowers;
– towed/semi-mounted grass-cutting machines;
– scrub-clearing machines;
– lawn trimmers and lawn edge trimmers;
– lawn edgers;
– grass trimmers;
– brush cutters;
– brush saws;
– agricultural mowers;
– trailing seat/sulky units;
– ride-on machines;

– non-powered lawnmowers;
– combustion engine powered lawnmowers;
– hybrid and fuel cell powered machines and associated charging systems; and
– garden tractors or their attachments.

NOTE 102 Robotic lawnmowers are covered by IEC 60335-2-107, and will be covered by a future part of IEC 62841.

NOTE 103 Lawn trimmers and lawn edge trimmers are covered by IEC 60335-2-91.

NOTE 104 Lawn trimmers, lawn edge trimmers, grass trimmers, brush cutters and brush saws will be covered by a future part of IEC 62841.

NOTE 105 Lawn edgers will be covered by a future part of IEC 62841.

2 Normative references

This clause of Part 1 is applicable, except as follows:

Addition:

IEC 60664-3, *Insulation coordination for equipment within low-voltage systems – Part 3: Use of coating, potting or moulding for protection against pollution*

IEC 60664-4, *Insulation coordination for equipment within low-voltage systems – Part 4: Consideration of high-frequency voltage stress*

IEC 61058-2-6:2018, *Switches for appliances – Part 2-6: Particular requirements for switches used in electric motor-operated hand-held tools, transportable tools and lawn and garden machinery*

IEC 61672-1, *Electroacoustics – Sound level meters – Part 1: Specifications*

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

ISO 5395-1:2013, *Garden equipment – Safety requirements for combustion-engine-powered lawnmowers – Part 1: Terminology and common tests*
ISO 5395-1:2013/AMD1:2017

ISO 5395-2:2013/AMD1:2016, *Garden equipment – Safety requirements for combustion-engine-powered lawnmowers – Part 2: Pedestrian-controlled lawnmowers*
ISO 5395-2:2013/AMD1:2016/AMD2:2017

ISO 13857:2019, *Safety of machinery – Safety distances to prevent hazard zones being reached by upper and lower limbs*

ANSI B71.1:2017, *Consumer turf care equipment – Pedestrian-controlled mowers and ride-on mowers – Safety specifications*

EN 12096, *Mechanical Vibration – Declaration and Verification of Vibration Emission Values*

Replacement:

IEC 61058-1:2016, *Switches for appliances – Part 1: General requirements*

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 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*

3 Terms and definitions

This clause of Part 1 is applicable, except as follows:

3.101
cutter bar
stationary device used on a **cylinder lawnmower** to provide a shearing action in combination with the **cutting means**

3.102
cutting height
shortest vertical distance between the cutting edge of the **cutting means** and the supporting surface of a **lawnmower**

3.103
cutting means
rotating mechanism or rotating part of the **lawnmower** that is designed to perform the cutting action

Note 101 to entry: **Cutting means** are also known as blades, cutting cylinders or reels.

3.104
cutting means assembly
cutting means together with the **cutting means enclosure**, including **cutting means** shaft(s)

3.105
cutting means control
device to engage and disengage the **cutting means** from its drive, in order to start and stop the **cutting means** motion

3.106
cutting means enclosure
part or assembly, including the **discharge chute** and **guard** for **grass catcher** opening, designed to prevent unintended contact with the **cutting means**

3.107
cutting means tip circle
path described by the outermost point of the **rotary lawnmower cutting means** cutting edge as it rotates about its shaft axis

3.108
cutting position
any height setting of the **cutting means** designated by the manufacturer for cutting grass

3.109
cutting width
total distance across the **cutting means** path at 90º to the direction of travel

3.110
discharge chute
portion of the **cutting means enclosure**, extending outward from the **discharge opening**, designed to control the ejection of material from the **cutting means**

3.111
discharge opening
opening in the **cutting means enclosure** through which material such as grass clippings can be discharged

3.112
grass catcher
part or combination of parts, intended to be used with the **lawnmower**, which provides a means for collecting material such as grass clippings

3.113
lawnmower
pedestrian controlled walk-behind lawn cutting machine, where the **cutting means** cuts approximately parallel to the ground and which uses the ground to determine the **cutting height** by means of wheels, air-cushion or skids, etc.

3.113.1
air-cushion lawnmower
rotary lawnmower which hovers using pressurized air as its ground support

3.113.2
cylinder lawnmower
lawnmower with one or more **cutting means** rotating about a horizontal axis to provide a shearing action with a **cutter bar**

Note 101 to entry: **Cylinder lawnmowers** are also known as reel **lawnmowers**.

3.113.3
rotary lawnmower
lawnmower in which one or more **cutting means**, cutting by impact, rotate about an axis perpendicular to the cutting plane

3.114
maximum speed
highest **cutting means** speed attainable under all conditions of **normal use**, including no-load

3.115
mulching
mode of operation of a **rotary lawnmower**, having a fixed or optional configuration, which returns clippings to the lawn without **discharge openings**

Note 101 to entry: Some **lawnmowers** are converted to a **mulching** type by the use of **mulching** parts or plugs.

3.116
operator control
device requiring operator actuation to perform specific functions during **normal operation**

3.117
operator presence control
device that deactivates rotation of the **cutting means** when the operator’s hand(s) is removed from the control

Note 101 to entry: The device typically consists of a combination of a mechanical actuator and other mechanical and electrical components (e.g. tactile switch, relays, load switches).

3.118
parking brake
device to prevent a stationary machine from moving

3.119
service brake
device for decelerating and stopping a machine from its ground travel speed

3.120
throw line
steepest line in a vertical plane, tangential to the periphery of the cutting cylinder in the direction of rotation, which does not intersect a **guard** or other components of a **cylinder lawnmower**

4 General requirements

This clause of Part 1 is applicable.

5 General conditions for the tests

This clause of Part 1 is applicable, except as follows:

5.4 *Addition:*

Handle positions that are used for storage purposes are not included in this requirement.

5.7.2 *Replacement:*

*Machines are tested at **rated voltage**. Machines having more than one **rated voltage** or having a **rated voltage range** are tested at the highest voltage.*

5.17 *Addition:*

*The mass of the machine includes the **cutting means**, **grass catcher** (empty) (if any), **grass catcher** adapter (if any), **mulching** parts or plug (if any), **cutting means enclosure** cover (if any) in the heaviest configuration in accordance with 8.14.2.*

5.101 *During the tests, the **cutting means** may be adjusted and lubricated as needed to permit operation for extended periods.*

NOTE 101 For example, it is possible that a **cylinder lawnmower cutting means** is not able to run for extended periods at normal adjustment because of lack of lubrication, etc. normally provided by the grass.

5.102 *For tests that are performed at **maximum speed** and no-load, the manufacturer may need to provide special hardware and/or software in order to achieve **maximum speed** at no-load.*

5.103 *The tests are performed using all **cutting means** in accordance with 8.14.2 a) 103).*

6 Radiation, toxicity and similar hazards

This clause of Part 1 is applicable.