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Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery - Safety - Part 4-7: Particular requirements for pedestrian controlled walk-behind lawn scarifiers and aerators

Elektrische motorbetriebene handgeführte Werkzeuge, transportable Werkzeuge und Rasen- und Gartenmaschinen - Sicherheit - Teil 4-7: Besondere Anforderungen für personengeführte Rasenvertikutierer und Rasenbelüfter

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Outils électroportatifs à moteur, outils portables et machines pour jardins et pelouses - Sécurité - Partie 4-7: Exigences particulières pour les scarificateurs à gazon et les aérateurs de gazon à conducteur à pied

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Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery - Safety - Part 4-7: Particular requirements for pedestrian controlled walk-behind lawn scarifiers and aerators
(IEC 62841-4-7:2022)

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(IEC 62841-4-7:2022)

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

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EN IEC 62841-4-7:2022 (E)**European foreword**

The text of document 116/589/FDIS, future edition 1 of IEC 62841-4-7, 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 62841-4-7:2022.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2023-08-08 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2026-08-08 document have to be withdrawn

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For the relationship with EU Directive(s) / Regulation(s), see informative Annex ZZ, which is an integral part of EN IEC 62841-4-7:2022/A11:2022.

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The text of the International Standard IEC 62841-4-7:2022 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 62841-4-3 NOTE Harmonized as EN IEC 62841-4-3



INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety –
Part 4-7: Particular requirements for pedestrian controlled walk-behind lawn scarifiers and aerators**

**Outils électroportatifs à moteur, outils portables et machines pour jardins et pelouses – Sécurité –
Partie 4-7: Exigences particulières pour les scarificateurs à gazon et les aérateurs de gazon à conducteur à pied**

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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 4-7: Particular requirements for pedestrian controlled
walk-behind lawn scarifiers and aerators**

FOREWORD

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IEC 62841-4-7 has been prepared by IEC technical committee 116: Safety of motor-operated electric tools. It is an International Standard.

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

Draft	Report on voting
116/589/FDIS	116/621/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document is to be used in conjunction with the first edition of IEC 62841-1 (2014).

This document 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 lawn scarifiers and aerators.

Where a particular subclause of IEC 62841-1 is not mentioned in this document, that subclause applies as far as reasonable. Where this document states "addition", "modification" or "replacement", the relevant text in IEC 62841-1 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 IEC 62841-1 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 document are numbered starting from 301.

A list of all parts in the IEC 62841 series, published 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.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document 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.

INTRODUCTION

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

Part 4-7: Particular requirements for pedestrian controlled walk-behind lawn scarifiers and aerators

1 Scope

IEC 62841-1:2014, Clause 1 is applicable, except as follows:

Addition:

This document applies to pedestrian controlled walk-behind **lawn scarifiers** and **lawn aerators** which are designed for regenerating lawns by combing out materials such as grass, thatch and moss or cutting vertically into the lawn face using

- metallic **tines**; and/or
- rigid non-metallic **tines**

which rotate about a horizontal axis.

This document does not apply to

- pedestrian controlled walk-behind lawnmowers;
- towed/semi-mounted **lawn scarifiers** and **lawn aerators**;
- ride-on machines;
- non-powered **lawn scarifiers** and **lawn aerators**;
- combustion engine powered **lawn scarifiers** and **lawn aerators**;
- plug aerators (corers);
- hybrid and fuel cell powered machines and associated charging systems; and
- garden tractors or their attachments.

NOTE 101 Pedestrian controlled walk-behind lawnmowers are covered by IEC 62841-4-3.

2 Normative references

IEC 62841-1:2014, Clause 2 is applicable, except as follows:

Addition:

IEC 60664-3:2016, *Insulation coordination for equipment within low-voltage systems – Part 3: Use of coating, potting or moulding for protection against pollution*

IEC 60664-4:2005, *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 61672-1:2013, *Electroacoustics – Sound level meters – Part 1: Specifications*

IEC 62841-1:2014, *Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety – Part 1: General requirements*

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

ISO 2758:2014, *Paper – Determination of bursting strength*

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

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

IEC 62841-1:2014, Clause 3 is applicable, except as follows:

Addition: <https://standards.iteh.ai/catalog/standards/sist/8d55fcba-e553-4572-a837-99b10f8a1ce2/sist-en-iec-62841-4-7-2022>

3.101 catcher

part or combination of parts, intended to be used with the **lawn scarifier** or **lawn aerator**, which provides a means for collecting material such as grass, thatch, moss or other debris

3.102 cutting width

total width of scarification/aeration measured across the **tines** at 90° to the direction of travel

3.103 discharge chute

extension of the **tines enclosure** from the **discharge opening**, generally used to control the discharge of material from the **tines**

3.104 discharge opening

gap or opening in the **tines enclosure** through which grass, thatch, moss and other debris may be discharged

3.104.1 front discharge

discharge opening for throwing out grass, thatch and moss so that they will be collected in a **catcher** which is located in front of the **tines**

3.104.2**rear discharge**

discharge opening for throwing out grass, thatch and moss so that they will be collected in a **catcher** which is located behind the **tines**

3.105**lawn aerator**

machine equipped with a **tines assembly** which uses the ground to determine the depth of cut, designed for penetrating the lawn surface

Note 101 to entry: See Figure 101.

Note 102 to entry: **Lawn aerators** that are designed to only make shallow cuts or slices in the soil are also known as verticutters.

3.106**lawn scarifier**

machine equipped with a **tines assembly** designed to scratch the surface or earth face

Note 101 to entry: See Figure 101.

Note 102 to entry: **Lawn scarifiers** are also known as lawn rakes and dethatchers.

3.107**maximum speed**

highest steady-state **tines** speed attainable under all conditions of **normal use**, including no-load, when adjusted in accordance with the manufacturer's specifications and/or instructions

Note 101 to entry: The steady-state **tines** speed excludes transients such as overshoot that may occur before attaining a steady-state condition.

3.108**operator control**

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

3.109**operator presence control**

device that deactivates rotation of the **tines** 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 or **electronic components**).

3.110**parking brake**

device to prevent a stationary machine from moving

3.111**service brake**

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

3.112**tines**

mechanism used to provide the penetrating action or scratching action of the machine

3.113**tines assembly**

tines together with any supporting part(s), which together perform the aerating or scarifying action

3.114**tines enclosure**

part or assembly which provides the protective means around the **tines**

3.115**tines tip circle**

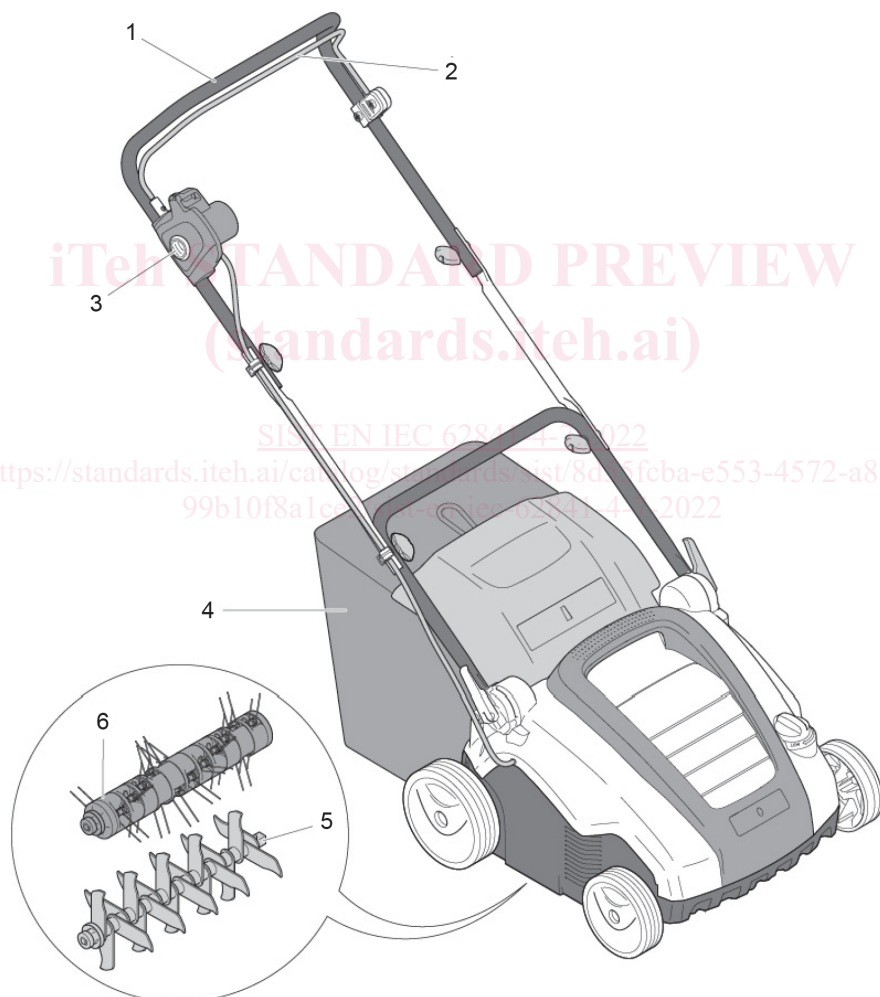
path described by the outermost point of the **tines** as they rotate about their shaft axis

3.116**traction drive**

means (system) used to transmit power from the motor to the ground drive means

3.117**working position**

any depth setting of the **tines** designated by the manufacturer



IEC

Key

- 1 handle
- 2 **operator presence control**
- 3 lock-off device
- 4 **catcher**
- 5 **tines assembly** for a lawn aerator
- 6 **tines assembly** for a lawn scarifier

Figure 101 – Example of a lawn scarifier or a lawn aerator