



**NSAI**  
Standards

Irish Standard  
I.S. EN ISO 5395-2:2013

# Garden equipment - Safety requirements for combustion-engine-powered lawnmowers - Part 2: Pedestrian- controlled lawnmowers (ISO 5395-2:2013)

## I.S. EN ISO 5395-2:2013

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWIFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

*This document replaces:*  
EN 836:1997+A4:2011

*This document is based on:*  
EN ISO 5395-2:2013

*Published:*  
19 September, 2013

This document was published  
under the authority of the NSAI  
and comes into effect on:  
19 September, 2013

**ICS number:**  
65.060.70

**NSAI**  
1 Swift Square,  
Northwood, Santry  
Dublin 9

T +353 1 807 3800  
F +353 1 807 3838  
E standards@nsai.ie  
W NSAI.ie

**Sales:**  
T +353 1 857 6730  
F +353 1 857 6729  
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

I.S. EN ISO 5395-2:2013

EUROPEAN STANDARD

**EN ISO 5395-2**

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2013

ICS 65.060.70

Supersedes EN 836:1997+A4:2011

English Version

**Garden equipment - Safety requirements for combustion-engine-powered lawnmowers - Part 2: Pedestrian-controlled lawnmowers (ISO 5395-2:2013)**

Matériel de jardinage - Exigences de sécurité pour les tondeuses à gazon à moteur à combustion interne - Partie 2: Tondeuses à gazon à conducteur à pied (ISO 5395-2:2013)

Gartengeräte - Sicherheitsanforderungen für verbrennungsmotorisch angetriebene Rasenmäher - Teil 2: Handgeführte Rasenmäher (ISO 5395-2:2013)

This European Standard was approved by CEN on 19 July 2013.

CEN 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 CEN 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 CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

## **Contents**

Page

<b>Foreword.....</b>	<b>3</b>
<b>Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC on machinery amended by 2009/127/EC .....</b>	<b>4</b>

## **Foreword**

This document (EN ISO 5395-2:2013) has been prepared by Technical Committee ISO/TC 23 "Tractors and machinery for agriculture and forestry" in collaboration with Technical Committee CEN/TC 144 "Tractors and machinery for agriculture and forestry" the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2014, and conflicting national standards shall be withdrawn at the latest by September 2014.

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

This document supersedes EN 836:1997+A4:2011.

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

For relationship with EU Directive, see informative Annex ZA, which is an integral part of this document.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

### **Endorsement notice**

The text of ISO 5395-2:2013 has been approved by CEN as EN ISO 5395-2:2013 without any modification.

## **Annex ZA** (informative)

### **Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC on machinery amended by 2009/127/EC**

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements of the New Approach Directive 2006/42/EC amended by 2009/127/EC.

Once this standard is cited in the Official Journal of the European Union under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the relevant Essential Requirements of that Directive and associated EFTA regulations.

**WARNING** — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

**NOTE** Compliance with Part 2, together with Part 1, is necessary to achieve presumption of conformity with the Essential Requirements of Directive 2006/42/EC and associated EFTA regulations.

I.S. EN ISO 5395-2:2013

# INTERNATIONAL STANDARD

ISO  
5395-2

Second edition  
2013-09-01

---

---

## Garden equipment — Safety requirements for combustion-engine-powered lawnmowers —

### Part 2: Pedestrian-controlled lawnmowers

*Matériel de jardinage — Exigences de sécurité pour les tondeuses à  
gazon à moteur à combustion interne —*

*Partie 2: Tondeuses à gazon à conducteur à pied*



Reference number  
ISO 5395-2:2013(E)

© ISO 2013



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2013

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland



# Contents

Page

<b>Foreword</b>	<b>iv</b>
<b>Introduction</b>	<b>v</b>
<b>1 Scope</b>	<b>1</b>
<b>2 Normative references</b>	<b>1</b>
<b>3 Terms and definitions</b>	<b>2</b>
<b>4 Requirements for pedestrian-controlled lawnmowers</b>	<b>2</b>
4.1 General	2
4.2 Controls	2
4.3 Operator presence control (OPC)	5
4.4 Handle	6
4.5 Guards	8
4.6 Brakes	8
4.7 Transport position of the cutting-means assembly	10
4.8 Separate fan for grass collection	11
4.9 Hot surfaces	11
4.10 Exhaust fumes	11
4.11 Pressurized components of hydraulic systems	11
4.12 Liquid spillage	12
4.13 Electrical system	12
4.14 Electromagnetic immunity	13
4.15 Noise	13
4.16 Vibration	13
4.17 Additional requirements for a lawnmower with a sulky with a seat	14
<b>5 Particular requirements for pedestrian-controlled rotary lawnmowers</b>	<b>16</b>
5.1 Stopping time of the cutting means	16
5.2 Impact of the cutting means	17
5.3 Cutting-means enclosure	17
5.4 Structural integrity	22
5.5 Thrown objects	23
5.6 Grass catcher	23
<b>6 Particular requirements for pedestrian-controlled cylinder lawnmowers</b>	<b>23</b>
6.1 Throw line	23
6.2 Cutting-means enclosure	24
6.3 Stopping time of the cutting means	26
<b>7 Information for use</b>	<b>27</b>
7.1 Instruction handbook	27
7.2 Markings and warnings	30
<b>Annex A (informative) List of significant hazards</b>	<b>32</b>
<b>Bibliography</b>	<b>34</b>

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 5395-2 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 144, *Tractors and machinery for agriculture and forestry* in collaboration with ISO Technical Committee TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 13, *Powered lawn and garden equipment*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition of ISO 5395-2, together with ISO 5395-1 and ISO 5395-3, cancels and replaces ISO 5395:1990, which has been technically revised. These three parts also incorporate the Amendment ISO 5395:1990/Amd.1:1992.

ISO 5395 consists of the following parts, under the general title *Garden equipment — Safety requirements for combustion-engine-powered lawnmowers*:

- *Part 1: Terminology and common tests*
- *Part 2: Pedestrian-controlled lawnmowers*
- *Part 3: Ride-on lawnmowers with seated operator*

## **Introduction**

This document is a type-C standard as stated in ISO 12100.

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

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

**I.S. EN ISO 5395-2:2013**

# Garden equipment — Safety requirements for combustion-engine-powered lawnmowers —

## Part 2: Pedestrian-controlled lawnmowers

### 1 Scope

**1.1** This part of ISO 5395 specifies safety requirements and their verification for combustion-engine-powered pedestrian-controlled rotary lawnmowers and cylinder lawnmowers, including pedestrian-controlled mowers with a sulky having a seated operator (hereafter named “lawnmower”), and equipped with:

- 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 10 J or more.

This part of ISO 5395 does not apply to:

- robotic and remote-controlled lawnmowers, flail mowers, grassland mowers, sickle bar mowers, towed/semi-mounted grass-cutting machines, and scrub-clearing machines;
- electrically powered and battery-powered lawnmowers;
- pedestrian-controlled lawnmowers with a swing-over handle.

NOTE IEC 60335-1[2] together with IEC 60335-2-77,[3] give requirements for pedestrian-controlled walk-behind electrically powered lawnmowers.

**1.2** This part of ISO 5395 deals with all significant hazards, hazardous situations or events (see [Annex A](#)) relevant to lawnmowers when used as intended and under the conditions of misuse which are reasonably foreseeable by the manufacturer.

**1.3** It is not applicable to lawnmowers which are manufactured before the date of publication of this document.

### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 61032:1997, *Protection of persons and equipment by enclosures — Probes for verification*

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

ISO 5395-3:2013, *Garden equipment — Safety requirements for combustion-engine-powered lawnmowers — Part 3: Ride-on lawnmowers with seated operator*

ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction*

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- Looking for additional Standards? Visit Intertek Inform Infostore
  - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-