

# ILNAS

Institut luxembourgeois de la normalisation  
de l'accréditation, de la sécurité et qualité  
des produits et services

**ILNAS-EN 50260-1:2002**

## **Safety of hand-held battery-powered motor-operated tools and battery packs - Part 1: General requirements**

Sécurité des outils électroportatifs  
alimentés sur batterie et des blocs de  
batteries - Partie 1: Règles générales

Sicherheit für handgeführte  
akkubetriebene Elektrowerkzeuge und  
Akkublöcke - Teil 1: Allgemeine  
Anforderungen

**05/2002**



## National Foreword

This European Standard EN 50260-1:2002 was adopted as Luxembourgish Standard ILNAS-EN 50260-1:2002.

Every interested party, which is member of an organization based in Luxembourg, can participate for FREE in the development of Luxembourgish (ILNAS), European (CEN, CENELEC) and International (ISO, IEC) standards:

- Participate in the design of standards
- Foresee future developments
- Participate in technical committee meetings

<https://portail-qualite.public.lu/fr/normes-normalisation/participer-normalisation.html>

### **THIS PUBLICATION IS COPYRIGHT PROTECTED**

Nothing from this publication may be reproduced or utilized in any form or by any mean - electronic, mechanical, photocopying or any other data carries without prior permission!

**Safety of hand-held battery-powered motor-operated tools  
and battery packs  
Part 1: General requirements**

Sécurité des outils électroportatifs  
alimentés sur batterie  
et des blocs de batteries  
Partie 1: Règles générales

Sicherheit für handgeführte  
akkubetriebene Elektrowerkzeuge  
und Akkublöcke  
Teil 1: Allgemeine Anforderungen

This European Standard was approved by CENELEC on 2002-03-05. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

## CENELEC

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

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

## Foreword

This European Standard has been prepared by the Technical Committee CENELEC TC 61F, Hand-held and transportable electric motor-operated tools.

A first draft was submitted to the Unique Acceptance Procedure in August 1996 with positive results. A second draft incorporating the editorial comments received during the UAP and the modifications necessary to incorporate the mechanical requirements which have been agreed for hand-held tools, was submitted to the formal vote in November 1999 and was approved on 2000-08-01.

Based on comments received from directive consultants, a further draft was submitted to a 2 months' vote and was approved by CENELEC as EN 50260-1 on 2002-03-05.

The following dates were 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) 2003-03-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2005-03-01

Other standards referred to in this European Standard are listed in annex F. The annex lists the valid edition of those documents at the time of issue of this EN. All references are however to be understood as references to the latest edition.

This European Standard is divided into two parts:

- Part 1: General requirements which are common to most hand-held battery powered motor operated tools (for the purpose of this European Standard referred to simply as tools).
- Part 2: Requirements for particular types of tool which either supplement or modify the requirements given in Part 1 to account for the particular hazards and characteristics of these specific tools.

This European Standard has been prepared under a mandate given to CEN and CENELEC by the European Commission and the European Free Trade Association and supports the essential health and safety requirements of the Machinery Directive.

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

A relevant Part 2 is one in which the type of the tool or an accessory which is to be used with the tool is within the scope of that Part 2.

When a relevant Part 2 does not exist, Part 1 can help to establish the requirements for the tool, but will not by itself provide a means of conforming with the relevant essential health and safety requirements of the Machinery Directive.

**Warning:** Other requirements and other EC Directives can be applicable to the products falling within the scope of this standard.

Hand held motor-operated tools are covered by the EN 50144 series. In order to be consistent with the EN 50144 series, the same order of clauses has been kept; the missing clauses are considered void.

CEN Technical Committees have produced a range of standards dealing with a similar range of non-electrically powered tools. Where necessary normative references are made to these standards in the relevant Part 2.

This standard follows the overall requirements of EN 292-1 and EN 292-2.

NOTE In this standard the following print types are used:

- Requirements proper;
- *Test specifications*;
- Explanatory matter.

## Contents

1	Scope.....	5
2	Definitions .....	5
3	General requirements.....	7
4	General conditions for the tests.....	7
5	Rating .....	8
6	(void)	
7	Marking and information for use .....	8
8	Protection against electric shock .....	12
9	(void)	
10	(void)	
11	(void)	
12	(void)	
13	Environmental requirements.....	13
14	Moisture resistance .....	18
15	Insulation resistance and electric strength.....	19
16	(void)	
17	Abnormal operation.....	19
18	Mechanical hazards .....	20
19	Mechanical strength .....	21
20	Construction .....	22
21	Components.....	25
22	Internal wiring.....	26
23	(void)	
24	(void)	
25	(void)	
26	Screws and connections .....	27
27	Creepage distances, clearances and distances through insulation.....	28
28	Resistance to heat, fire and tracking .....	30
29	Resistance to rusting.....	31

Annex A (void)

Annex B (void)

Annex C (normative) Measurement of creepage distances and clearance ..... 39

Annex D (void)

Annex E (informative) Rules for routine tests..... 44

Annex F (normative) Normative references ..... 45

Annex G (void)

Figures ..... 32

## 1 Scope

This standard applies to hand-held rechargeable battery-powered, motor-operated or magnetically driven tools intended for indoor or outdoor use designed for use by one person and the battery packs for such tools including those intended to be charged from chargers with a non-isolated output with an output voltage of not more than 250 volts.

Battery operated tools which can be operated while connected to the mains shall also comply with EN 50144-1.

This Part 1 is to be used in conjunction with the appropriate Part 2, which contains clauses which supplement or modify the corresponding clauses in Part 1 to provide the complete requirement for each sort of tool.

It also applies, as far as is reasonable, to tools not mentioned in Part 2 and to those designed on basically new principles in which case additional requirements may be necessary.

This standard covers tools which can be used in a fixed support. Unless the requirement for such a support is given in a relevant Part 2, this standard alone will not be sufficient to ensure that the combination of tool and support is adequate.

Tools or battery packs incorporating battery chargers are also within the scope of this standard but such tools and packs are also required to comply with EN 60335-2-29.

This standard does not apply to:

- tools used for preparing or processing food;
- tools used in explosive atmospheres.

It does not apply to a general purpose battery that may be purchased and installed by the user.

It does not apply to battery chargers.

Battery chargers with an output at safety extra-low voltage are covered by EN 60335-2-29.

## 2 Definitions

### 2.1

#### **(hand-held) tool**

battery powered motor-operated or magnetically driven machine intended to do mechanical work and so designed that the motor and the machine form an assembly which together with its battery or battery pack can easily be brought to its place of operation and which is held in the hand during operation

### 2.2

#### **rated no-load speed**

no-load speed at rated voltage or at the upper limit of the rated voltage range, assigned to the tool by the manufacturer

### 2.3

#### **rated voltage**

voltage assigned to the tool or battery pack by the manufacturer

### 2.4

#### **rated voltage range**

voltage range assigned to the tool or battery pack by the manufacturer

**2.5****fully charged battery**

battery or battery pack which has been through at least two charge and discharge cycles with an interval of at least two hours between cycles and is then fully charged in accordance with the manufacturers instructions

**2.6****battery pack**

self contained assembly of one or more secondary cells which is detachable from the tool for recharging or replacement

**2.7****detachable part**

part which can be removed or opened without the aid of a tool or a part the manufacturer instructs the user to remove even if the use of a tool is needed for removal

**2.8****use of a tool; aid of a tool**

expression to indicate the use of a screwdriver, coin or any other object which may be used to operate a screw or other fixing means

**2.9****charger with non-isolated output**

battery charger in which the output voltage for charging a battery is not isolated from the mains supply by means of a safety isolating transformer

**2.10****safety isolating transformer**

transformer, the input winding of which is electrically separated from the output winding by an insulation at least equivalent to double or reinforced insulation and which is designed to supply an output voltage at safety extra-low voltage

**2.11****safety extra-low voltage**

voltage not exceeding 42 V between conductors and between conductors and earth, the no-load voltage not exceeding 50 V

**2.12****type 1 battery pack or tool**

construction where the battery is intended to be charged by means of a charger with non-isolated output

**2.13****type 2 battery pack or tool**

construction where the battery is intended to be charged from a battery charger where the output is isolated from the mains supply by means of a safety isolating transformer (see EN 60335-2-29)

**2.14****basic insulation**

insulation applied to live parts to provide basic protection against electric shock

NOTE Basic insulation does not necessarily include insulation used exclusively for functional purposes.

**2.15****supplementary insulation**

independent insulation applied in addition to the basic insulation, in order to provide protection against electric shock in the event of a failure of the basic insulation