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# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

## Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 2-130: Particular requirements for equipment intended to be used in educational establishments by children

## Exigences de sécurité pour appareils électriques de mesurage, de régulation et de laboratoire – Partie 2-130: Exigences particulières pour appareils destinés à une utilisation dans les établissements scolaires par des enfants:

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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# SAFETY REQUIREMENTS FOR ELECTRICAL EQUIPMENT FOR MEASUREMENT, CONTROL, AND LABORATORY USE –

## Part 2-130: Particular requirements for equipment intended to be used in educational establishments by children

## FOREWORD

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International Standard IEC 61010-2-130 has been prepared by IEC Technical Committee 66: Safety of measuring, control and laboratory equipment.

This first edition cancels and replaces IEC TS 62850, published in 2013.

This edition includes the following significant technical changes with respect to IEC TS 62850:

a) marking and documentation requirements;
b) stability and handling requirements.

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

| FDIS | Report on voting |
|---|---|
| 66/724/FDIS | 66/726/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 document has been drafted in accordance with the ISO/IEC Directives, Part 2 and taking into account ISO/IEC Guide 50:2014.

A list of all parts in the IEC 61010 series, published under the general title *Safety requirements for electrical equipment for measurement, control, and laboratory use*, can be found on the IEC website.

This document is to be used in conjunction with IEC 61010-1. It was established based on the third edition (2010) of IEC 61010-1, including its Amendment 1 (2016) hereinafter referred to as Part 1.

This document supplements or modifies the corresponding clauses in IEC 61010-1 to convert that publication into the IEC standard: *Particular requirements for equipment intended to be used in educational establishments by children*.

Where a particular subclause of Part 1 is not mentioned in this document, that subclause applies as far as is reasonable. Where this document states "addition", "modification", "replacement", or "deletion", the relevant requirement, test specification or note in Part 1 should be adapted accordingly.

In this standard, the following print types are used:

- requirements: in roman type;
- NOTES: in smaller roman type;
- *conformity assessment and test: in italic type*;
- terms defined used throughout this standard which have been defined in Clause 3: SMALL ROMAN CAPITALS.

Subclauses, figures, tables and notes which are additional to those in Part 1 are numbered starting from 101. Additional annexes are lettered starting from AA and additional list items are lettered from aa).

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://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.

# INTRODUCTION

This document specifies particular safety requirements for equipment and accessories intended to be used in educational establishment by PUPIL OPERATORS. PUPIL OPERATORS are for the sake of this document, children between the ages of 3 years and 16 years operating electrical equipment under supervision of a RESPONSIBLE BODY.

Equipment and accessories are considered intended for use in educational establishments, when it is either explicitly stated in accompanying documentation, or where sales and marketing materials indicate such intended use. This does not limit the use of other equipment for use in educational establishments, however equipment and accessories not evaluated to the requirements of this document may need additional precautions and attestation when used by PUPIL OPERATORS.

Readily predictable behaviour of PUPIL OPERATORS can include poking objects and materials associated with equipment and accessories, which poses additional challenges for determination of reasonably foreseeable misuse. Consequently, more stringent criteria for access to potentially hazardous parts are required for educational establishment equipment than for general laboratory use.

Moreover, the maximum temperatures of parts that may be touched by children should be lower than for equipment handled only by adults. Ergonomic considerations and mechanical risks need to be addressed with regard to the anthropomorphic dimensions of children instead of adults.

This document includes the following significant changes with respect to Part 1, as well as other changes:

a) a marking is added to indicate to the RESPONSIBLE BODY that the equipment is intended to be used by PUPIL OPERATORS under supervision;

b) accessibility requirements are enhanced to take into account the propensity of children to insert foreign objects wherever they can;

c) temperature limits have been decreased to take into account the greater sensitivity of a child's skin;

d) mechanical access dimensions have been reduced to take into account the smaller dimensions of a child's body;

e) limits for non-collimated optical radiation have been introduced;

f) limits for ionizing radiation have been reduced;

g) small detachable parts below certain dimensions have been prohibited;

h) manufacturers are required to consider the general unpredictability of the behaviour of PUPIL OPERATORS.

# SAFETY REQUIREMENTS FOR ELECTRICAL EQUIPMENT FOR MEASUREMENT, CONTROL, AND LABORATORY USE –

# Part 2-130: Particular requirements for equipment intended to be used in educational establishments by children

## 1 Scope and object

This clause of Part 1 is applicable except as follows:

### 1.1.1 Equipment included in scope

*Deletion: Delete paragraph 1.*

*Replacement:*

*Replace the second paragraph immediately before the lettered list, with the following:*

This part of IEC 61010 specifies particular safety requirements for the following types of equipment a), b) or c) and their accessories intended to be used in educational establishments by children under the supervision of the RESPONSIBLE BODY. It specifies general safety requirements for equipment intended to be used in educational establishments by persons between the age of 3 years and the age of 16 years under the supervision of a RESPONSIBLE BODY.

Children are considered as persons between the age of 3 years and 16 years.

It is recognized that pupils with additional educational or physical support needs may have needs beyond the level addressed in this document (see Clause 17 risk assessment).

NOTE 1 The term "children" used in this document does not match the definitions found in ISO/IEC Guide 50 and other documents.

It is possible that all or part of the equipment falls within the scope of one or more IEC 61010 Part 2 standards as well as within the scope of this document. In that case the requirements of those other Part 2 standards apply.

NOTE 2 In some countries, age limits can be different from those used in this document or can be replaced by capability requirements.

*Renumber the existing NOTE 1 and NOTE 2 as NOTE 3 and NOTE 4.*

### 1.1.3 Computing equipment

*Renumber NOTE as NOTE 1.*

*Addition:*

*Add the following note after the existing note.*

NOTE 2 General information technology equipment such as projector, tablet PC, monitor, electronic whiteboard, power supplies, etc. used by children in an educational establishment are excluded from the scope unless those are specifically designed for the type of equipment covered under the scope of IEC 61010-1 or any of its Part 2 standards.

### 1.2.1 Aspects included in scope

*Replace the existing note by the following notes:*

NOTE 1 Attention is drawn to the additional requirements that can be specified by national authorities responsible for health and safety in education. In particular, there can be limitations on the use of radioactive materials, X-ray and laser equipment and hazardous substances.

NOTE 2 Attention is also drawn to the existence of additional requirements that can be specified by national authorities responsible for the health and safety of children in education with special needs.

## 2 Normative references

This clause of Part 1 is applicable except as follows:

*Delete:*

IEC 61010-031, *Safety requirements for electrical equipment for measurement, control and laboratory use – Part 031: Safety requirements for hand-held probe assemblies for electrical measurement and test*