
Irish Standard
I.S. EN ISO 21178:2013

# Light conveyor belts - Determination of electrical resistances (ISO 21178:2013)

# I.S. EN ISO 21178:2013

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

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**I.S. EN ISO 21178:2013**

EUROPEAN STANDARD

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Supersedes EN ISO 21178:2006

English Version

# Light conveyor belts - Determination of electrical resistances (ISO 21178:2013)

Courroies transporteuses légères - Détermination des résistances électriques (ISO 21178:2013)

This European Standard was approved by CEN on 4 March 2013.



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

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# Foreword

This document (EN ISO 21178:2013) has been prepared by Technical Committee ISO/TC 41 "Pulleys and belts (including veebelts)" in collaboration with Technical Committee CEN/TC 188 “Conveyor belts” the secretariat of which is held by SNV.

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of an identical text or by endorsement, at the latest by October 2013, and conflicting national standards shall be withdrawn at the latest by October 2013.

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 ISO 21178:2006.

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The text of ISO 21178:2013 has been approved by CEN as EN ISO 21178:2013 without any modification.

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I.S. EN ISO 21178:2013

INTERNATIONAL STANDARD

**ISO 21178**

Second edition
2013-03-15

# Light conveyor belts — Determination of electrical resistances

*Courroies transporteuses légères — Détermination des résistances électriques*

Reference number
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# 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 21178 was prepared by Technical Committee ISO/TC 41, *Pulleys and belts (including veebelts)*, Subcommittee SC 3, *Conveyor belts*.

This second edition cancels and replaces the first edition (ISO 21178:2005), of which it constitutes a minor revision.

 

# Light conveyor belts — Determination of electrical resistances

## 1 Scope

This International Standard specifies test methods for determining the electrical resistances of light conveyor belts according to ISO 21183-1. The resistances are surface resistance, volume resistance perpendicular to the belt plane, and longitudinal and transverse volume resistance parallel to the belt plane. This International Standard also specifies two test methods for determining the surface resistivity and the volume resistivity.

## 2 Normative references

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

ISO 18573, *Conveyor belts — Test atmospheres and conditioning periods*

## 3 Symbols

| Symbol | Quantity | Unit |
|---|---|---|
| $R_{OA}$ | Electrical surface resistance, method A | Ω |
| $R_{OB}$ | Electrical surface resistance, method B | Ω |
| $R_{OG}$ | Electrical surface resistance for the determination of $\rho_s$ | Ω |
| $R_D$ | Electrical volume resistance perpendicular to the plane of the belt | Ω |
| $R_{Di}$ | Electrical volume resistance in longitudinal and transverse direction parallel to the plane of the belt | Ω |
| $\rho_s$ | Electrical surface resistivity | Ω |
| $\rho_D$ | Electrical volume resistivity | Ω·cm |
| $d_{1/2/3}$ | Diameter of electrode | cm |
| $d_m$ | Middle of the gap diameter | cm |
| $g$ | Width of the gap | cm |
| $A$ | Surface of the electrode | $cm^2$ |
| $h$ | Thickness of test piece | cm |

NOTE The SI unit of surface resistivity, $\rho_s$, is the ohm (Ω). In practice, this is sometimes referred to as "ohm/square" or "Ω/sq" or "Ω/□". The size of the square is immaterial.