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Standards

Irish Standard  
I.S. EN ISO 21178:2013

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

## I.S. EN ISO 21178:2013

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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.

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**Contents**

Page

**Foreword.....3**

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of an identical text or by endorsement, at the latest by October 2013, and conflicting national standards shall be withdrawn at the latest by October 2013.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

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

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**INTERNATIONAL**  
**STANDARD**

**ISO**  
**21178**

Second edition  
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**Light conveyor belts — Determination  
of electrical resistances**

*Courroies transporteuses légères — Détermination des résistances  
électriques*



Reference number  
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# Contents

	Page
<b>Foreword</b> .....	<b>iv</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Symbols</b> .....	<b>1</b>
<b>4 Electrical surface resistances</b> .....	<b>2</b>
4.1 Method A: measurement of surface resistance $R_{OA}$ omni-directionally .....	2
4.2 Method B: measurement of surface resistance $R_{OB}$ in longitudinal and transverse direction .....	5
<b>5 Electrical surface resistivity <math>\rho_S</math></b> .....	<b>7</b>
5.1 General .....	7
5.2 Principle .....	7
5.3 Apparatus .....	7
5.4 Preparation and preservation of test pieces prior to testing .....	9
5.5 Procedure .....	9
5.6 Expression of results .....	10
5.7 Test report .....	10
<b>6 Electrical volume resistances</b> .....	<b>10</b>
6.1 Volume resistance $R_D$ perpendicular to plane of belt .....	10
6.2 Volume resistance, $R_{Di}$ , in longitudinal and transverse direction parallel to plane of belt .....	15
<b>7 Electrical volume resistivity <math>\rho_D</math></b> .....	<b>18</b>
7.1 Procedure .....	18
7.2 Expression of results .....	18
7.3 Test report .....	18
<b>Annex A (informative) Comparative values for electrical resistances</b> .....	<b>19</b>
<b>Bibliography</b> .....	<b>20</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 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
$R_{0A}$	Electrical surface resistance, method A	$\Omega$
$R_{0B}$	Electrical surface resistance, method B	$\Omega$
$R_{0G}$	Electrical surface resistance for the determination of $\rho_s$	$\Omega$
$R_D$	Electrical volume resistance perpendicular to the plane of the belt	$\Omega$
$R_{Di}$	Electrical volume resistance in longitudinal and transverse direction parallel to the plane of the belt	$\Omega$
$\rho_s$	Electrical surface resistivity	$\Omega$
$\rho_D$	Electrical volume resistivity	$\Omega \cdot \text{cm}$
$d_{1/2/3}$	Diameter of electrode	cm
$d_m$	Middle of the gap diameter	cm
$g$	Width of the gap	cm
$A$	Surface of the electrode	$\text{cm}^2$
$h$	Thickness of test piece	cm

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

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