



NSAI
Standards

Irish Standard
I.S. EN ISO 21178:2013

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

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I.S. EN ISO 21178:2013

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

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

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Contents

Page

Foreword.....	3
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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of an identical text or by endorsement, at the latest by October 2013, and conflicting national standards shall be withdrawn at the latest by October 2013.

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**INTERNATIONAL
STANDARD**

**ISO
21178**

Second edition
2013-03-15

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

*Courroies transporteuses légères — Détermination des résistances
électriques*



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Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Symbols	1
4 Electrical surface resistances	2
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
5 Electrical surface resistivity ρ_s	7
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
6 Electrical volume resistances	10
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
7 Electrical volume resistivity ρ_D	18
7.1 Procedure.....	18
7.2 Expression of results.....	18
7.3 Test report.....	18
Annex A (informative) Comparative values for electrical resistances	19
Bibliography	20

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.

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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 ρ_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
ρ_s	Electrical surface resistivity	Ω
ρ_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	cm^2
h	Thickness of test piece	cm

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

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