
**Light conveyor belts — Determination
of the electrostatic field generated by
a running light conveyor belt**

*Courroies transporteuses légères — Détermination du champ
électrostatique engendré par une courroie transporteuse légère en
marche*

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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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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 21179 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 21179:2005), of which it constitutes a minor revision.

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Light conveyor belts — Determination of the electrostatic field generated by a running light conveyor belt

1 Scope

This International Standard specifies a test method for the determination of the electrostatic field generated by a running light conveyor belt according to ISO 21183-1.

This dynamic procedure is required because the antistatic behaviour of light conveyor belts cannot in many cases be sufficiently described by measurement of the electrical resistances in accordance with ISO 21178.

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 22, *Belt drives — Flat transmission belts and corresponding pulleys — Dimensions and tolerances*

ISO 4287, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters*

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

ISO 21181, *Light conveyor belts — Determination of the relaxed elastic modulus*

3 Principle

The test piece is run under specified conditions and produces an electrostatic field, the variation of which is recorded with time.

The test is carried out successively with both sides of the belt in contact with the pulleys.

4 Apparatus (see [Figure 1](#))

4.1 Pair of pulleys, as follows:

- a) electrically connected and earthed;
- b) made of steel;
- c) diameter 200 mm or larger, rim width 120 mm;
- d) raw, unplated surface roughness, maximum $Ra = 1,6 \mu\text{m}$, in accordance with ISO 4287;
- e) final coating of chromium plating;
- f) drive pulley, fixed, cylindrical;
- g) driven pulley moveable for tensioning, crowned in accordance with ISO 22 ($h = 0,6 \text{ mm}$).

4.2 Tensioning device, such that the test piece can be loaded according to the relevant $k_1 \%$ value given in [Table 1](#) to achieve uniform surface pressures.