INTERNATIONAL STANDARD

**ISO
9073-5**

First edition
2008-10-01

Textiles — Test methods for nonwovens —

Part 5:
Determination of resistance to mechanical penetration (ball burst procedure)

Textiles — Méthodes d'essai pour nontissés —

Partie 5: Détermination de la résistance à la pénétration mécanique (méthode d'éclatement à la bille)
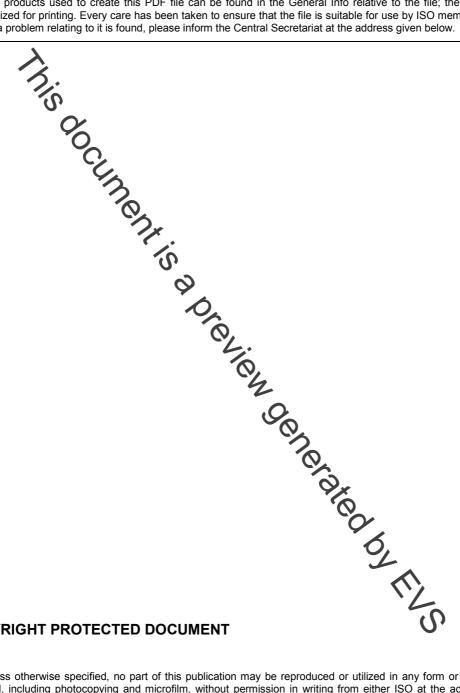

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Foreword

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 9073-5 was prepared by Technical Committee ISO/TC 38, *Textiles*.

ISO 9073 consists of the following parts, under the general title *Textiles — Test methods for nonwovens*:

— *Part 1: Determination of mass per unit area*

— *Part 2: Determination of thickness*

— *Part 3: Determination of tensile strength and elongation*

— *Part 4: Determination of tear resistance*

— *Part 5: Determination of resistance to mechanical penetration (ball burst procedure)*

— *Part 6: Absorption*

— *Part 7: Determination of bending length*

— *Part 8: Determination of liquid strike-through time (simulated urine)*

— *Part 9: Determination of drapability including drape coefficient*

— *Part 10: Lint and other particles generation in the dry state*

— *Part 11: Run-off*

— *Part 12: Demand absorbency*

— *Part 13: Repeated liquid strike-through time*

— *Part 14: Coverstock wetback*

— *Part 15: Determination of air permeability*

— *Part 16: Determination of resistance to penetration by water (hydrostatic pressure)*

— *Part 17: Determination of water penetration (spray impact)*

— *Part 18: Determination of breaking strength and elongation of nonwoven materials using the grab tensile test*

Textiles — Test methods for nonwovens —

Part 5:
Determination of resistance to mechanical penetration (ball burst procedure)

1 Scope

This part of ISO 9073 specifies a method for determining the resistance to mechanical penetration of nonwoven fabrics by a ball of a given diameter.

The method is primarily designed to be used on nonwovens with some degree of elasticity, for which a regular burst test is not applicable.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 139, *Textiles — Standard atmospheres for conditioning and testing*

ISO 186, *Paper and board — Sampling to determine average quality*

ISO 10012:2003, *Measurement management systems — Requirements for measurement processes and measuring equipment*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
nonwoven fabric
fabric made directly from a web of fibres, without the yarn preparation necessary for weaving and knitting

3.2
constant-rate-of-traverse (CRT) testing machine
testing machine in which the moving clamp moves at a uniform rate

3.3
bursting strength
force or pressure required to rupture a textile by distending it with a force, applied at right angles to the plane of the fabric, under specified conditions

3.4
elongation
distance the crosshead travels from the plane of the sample at the start of the test to the point of peak load