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**Rubber- or plastics-coated fabrics —  
Determination of tear resistance —**

**Part 2:**  
**Ballistic pendulum method**

*Supports textiles revêtus de caoutchouc ou de plastique — Détermination  
de la résistance au déchirement —*

*Partie 2: Méthode au mouton-pendule*



## 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.

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.

International Standard ISO 4674-2 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*.

Together with part 1 of ISO 4674, this first edition of ISO 4674-2 cancels and replaces the first edition of ISO 4674 (ISO 4674:1977), which has been technically revised.

ISO 4674 consists of the following parts, under the general title *Rubber- or plastics-coated fabrics — Determination of tear resistance*:

- *Part 1: Constant rate of tear methods*
- *Part 2: Ballistic pendulum method*

Annex A forms an integral part of this part of ISO 4674.

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## Introduction

Tearing is amongst the more usual ways of destruction for many thin materials such as paper, coated or uncoated textiles, plastics films and leather. Knowledge of the resistance of these materials to this type of behaviour is therefore very important.

In practice, tearing can result from very different circumstances; hence the large number of test methods that have been developed in order to predict the behaviour of materials in various situations.

The present International Standard deals with initiated tearing, i.e. the propagation of a tear from an initiating cut. It consists of the following two parts:

- Part 1: Constant rate of tear methods;
- Part 2: Ballistic pendulum method.

The first part describes two methods using a tensile-testing machine at constant rate of elongation. The second part describes a dynamic method using the kinetic energy of a falling pendulum.

Other methods, for example the "wounded burst test", are under consideration as possible further parts.

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# Rubber- or plastics-coated fabrics — Determination of tear resistance —

## Part 2: Ballistic pendulum method

**WARNING** — Persons using this part of ISO 4674 should be familiar with normal laboratory practice. This part of ISO 4674 does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

### 1 Scope

This part of this ISO 4674 describes a method for the determination of tear resistance based on the action of an active force applied to a notched test piece.

The test may be carried out on:

- test pieces that have been conditioned in a standard atmosphere, or
- test pieces that have undergone pre-treatment, e.g. water immersion.

The results obtained by this method are not to be compared with those obtained by methods involving constant rate of tear.

### 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 4674. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 4674 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 2231:1989, *Rubber- or plastics-coated fabrics — Standard atmospheres for conditioning and testing.*

ISO 2286-2:1998, *Rubber- or plastics-coated fabrics — Determination of roll characteristics — Part 2: Methods for determination of total mass per unit area, mass per unit area of coating and mass per unit area of substrate.*

### 3 Principle

A sudden force is applied to a notched test piece. This force is generated by a pendulum. The amplitude of the first oscillation enables the tearing force to be measured.