INTERNATIONAL STANDARD

ISO 4647

Second edition
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Rubber, vulcanized — Determination of static adhesion to textile cord — H-pull test

Caoutchouc vulcanisé — Détermination de l'adhérence statique au câblé textile — Essai d'arrachement en H

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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 4647 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 2, *Testing and analysis*.

This second edition cancels and replaces the first edition (ISO 4647:1982), which has been technically revised primarily concerning updating the references, including a reference to ISO 5893 for the apparatus, updating the test report format and the addition of a calibration schedule.

Rubber, vulcanized — Determination of static adhesion to textile cord — H-pull test

WARNING — Persons using this International Standard should be familiar with normal laboratory practice. This standard 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.

CAUTION — Certain procedures specified in this International Standard may involve the use or generation of substances, or the generation of waste, that could constitute a local environmental hazard. Reference should be made to appropriate documentation on safe handling and disposal after use.

1 Scope

This International Standard specifies a method for the determination of the static adhesion of textile cord to vulcanized rubber using the H-pull test. It is applicable to cords made from natural or man-made fibres.

The property levels obtained with this method are affected considerably by the history of the cord and the rubber compound. The method yields data, however, on which a judgement as to the service quality of the material can be based.

The method is primarily intended for use with tyre cord. However, it can be applied, if desired, to similar cords for use in other rubber products, but it is limited to cords of linear density not exceeding 800 mg/m (tex).

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 5893, *Rubber and plastics test equipment — Tensile, flexural and compression types (constant rate of traverse) — Specification*

ISO 18899:2004, *Rubber — Guide to the calibration of test equipment*

ISO 23529, *Rubber — General procedures for preparing and conditioning test pieces for physical test methods*

3 Principle

The adhesion between a rubber and textile cord is assessed by measuring the force required to pull a single cord from a block of vulcanized rubber, the force being applied along the longitudinal axis of the cord and the length of cord embedded in the rubber being fixed (see Figure 1).

The adhesion measured is essentially a shearing force acting at the cord-to-rubber interface. The two strips of rubber and the interconnecting cord form a test piece resembling the letter “H”, from which the test derives its name.