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BSI Standards Publication

## Conveyor belts - Drum friction testing

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## National foreword

This British Standard is the UK implementation of EN ISO 20238:2019. It is identical to ISO 20238:2018. It supersedes BS EN 1554:2012, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PRI/67, Conveyor belts.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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English Version

## Conveyor belts - Drum friction testing (ISO 20238:2018)

Courroies transporteuses - Essais de frottement au tambour (ISO 20238:2018)

Fördergurte - Prüfung der Trommelreibung (ISO 20238:2018)

This European Standard was approved by CEN on 21 February 2019.

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**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## European foreword

This document (EN ISO 20238:2019) 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of an identical text or by endorsement, at the latest by August 2019, and conflicting national standards shall be withdrawn at the latest by August 2019.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1554:2012.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

### Endorsement notice

The text of ISO 20238:2018 has been approved by CEN as EN ISO 20238:2019 without any modification.

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 41, *Pulleys and belts (including veebelts)*, Subcommittee SC 3, *Conveyor belts*.

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## **Introduction**

The purpose of this document is to provide a method of testing that will assist conveyor belt users in assessing the degree of risk which can be anticipated from the hazard caused when a conveyor belt stalls and the drive mechanism of the conveyor system continues to operate, causing localized heating of the conveyor belt through contact with the driving drum or other frictional heat source.

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# Conveyor belts - Drum friction testing

## 1 Scope

This document specifies a method of testing to determine the propensity of a conveyor belt to generate heat flame or glow when held stationary, under a given tension, in surface contact around a rotating driven steel drum.

It describes means of varying the conveyor belt tension.

**NOTE** For conveyor belts containing steel reinforcement, it may not be possible to conduct this test in full due to the inability of the conveyor belt to comply with the requirements of 7.2. In this case, premature termination according to 7.3 can be necessary.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 65, *Carbon steel tubes suitable for screwing in accordance with ISO 7-1*

ISO 7590, *Steel cord conveyor belts — Methods for the determination of total thickness and cover thickness*

ISO 9329-1, *Seamless steel tubes for pressure purposes — Technical delivery conditions — Part 1: Unalloyed steels with specified room temperature properties*

ISO 9330-1, *Welded steel tubes for pressure purposes — Technical delivery conditions — Part 1: Unalloyed steel tubes with specified room temperature properties*

EN 60584-1, *Thermocouples — Part 1: EMF specifications and tolerances*

## 3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

## 4 Principle

A test piece of conveyor belt, suitably mounted and tensioned, is wrapped halfway around a rotating steel drum, simulating a stalled belt. The test is continued at specified tensions for a given time period, or until the belt parts or breaks. The presence, or absence, of flame or glow is noted and reported and the maximum temperature of the drum is recorded. The test is conducted in still air and/or in moving air. Two options on arc of contact are given. The reduced arc of contact test (135° of contact) with increased initial load is considered equivalent to the 180° arc of contact test.