

**ISO 7263-1:2018**



**EN ISO 7263-1:2019**

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**Corrugating medium - Determination of the flat crush resistance after laboratory fluting - Part 1: A-flute (ISO 7263-1:2019)**

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**Corrugating medium - Determination of the flat crush  
 resistance after laboratory fluting - Part 1: A-flute (ISO  
 7263-1:2018)**

Papier cannelure - Détermination de la résistance à la  
 compression à plat après cannelage en laboratoire -  
 Partie 1: Cannelure A (ISO 7263-1:2018)

Wellenrohpapier - Bestimmung des  
 Flachstauchwiderstandes an labormäßig gewelltem  
 Wellenpapier - Teil 1: A-Welle (ISO 7263-1:2018)

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**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

**EN ISO 7263-1:2019 (E)**

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## European foreword

This document (EN ISO 7263-1:2019) has been prepared by Technical Committee ISO/TC 6 "Paper, board and pulps" in collaboration with Technical Committee CEN/TC 172 "Pulp, paper and board" the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by July 2019, and conflicting national standards shall be withdrawn at the latest by July 2019.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 ISO 7263:2011.

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 7263-1:2018 has been approved by CEN as EN ISO 7263-1:2019 without any modification.

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**Corrugating medium — Determination  
of the flat crush resistance after  
laboratory fluting —**

Part 1:  
**A-flute**

*Papier cannelure — Détermination de la résistance à la compression  
à plat après cannelage en laboratoire —*

*Partie 1: Cannelure A*



# ISO 7263-1:2018(E)



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# ISO 7263-1:2018(E)

## 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 of 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 [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 6, *Paper, board and pulps*, Subcommittee SC 2, *Test methods and quality specifications for paper and board*.

This document cancels and replaces ISO 7263:2011, which has been technically revised.

The main changes compared with ISO 7263:2011 are as follows:

- ISO 7263 has been divided into two parts due to technical developments to allow both A-flute (Part 1) and B-flute (Part 2) performance to be tested;
- [Clause 1](#): editorial changes have been made to the scope;
- [Clause 2](#): normative references have been updated;
- [Clause 7](#): this document requires conditioning of samples where testing will be carried out immediately after fluting, not only where test pieces will be reconditioned before testing;
- [9.2](#): for testing immediately after fluting the time between fluted test piece discharge and initial application of force has been increased to a more realistic level;
- [Clause 11](#): precision with more detailed description of precision data according to ISO/TR 24498 and TAPPI T 1200 has been moved to informative [Annex B](#);
- Test report is now [Clause 11](#) and has been updated;
- [Annex B](#): precision data according to ISO/TR 24498 and TAPPI T 1200 has been added.

A list of all parts in the ISO 7263 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

The flat crush resistance of laboratory-fluted corrugating medium is regarded as a property indicating the potential flat crush resistance of corrugated fibreboard made from that medium. The corrugated medium is fluted by passing it between heated rollers. Two different test procedures are used:

- a) the fluted corrugating medium is compressed immediately after fluting (i.e. 15 s to 25 s after fluting);
- b) the fluted corrugating medium is conditioned for 30 min to 35 min under standard laboratory test conditions before being compressed.

Since considerable advantages are claimed for both procedures and both are widely used, the ISO 7263 series describes both procedures. Procedure a) generally gives considerably higher results than those obtained with procedure b). The differences in results are claimed to be caused by the lower moisture content (and thus higher stiffness) of the unconditioned fluted corrugating medium, and/or the change in flute profile which occurs during the conditioning period.

This document describes the testing method for the A-flute geometry.

ISO 7263-2<sup>[6]</sup> describes the testing method for the B-flute geometry.

The option of using an A- or B-flute geometry is determined by the producer and/or the end-use customer; it is not required for any particular flute structure.

A method for determining the flat crush resistance of manufactured corrugated fibreboard is given in ISO 3035<sup>[3]</sup>.



# Corrugating medium — Determination of the flat crush resistance after laboratory fluting —

## Part 1: A-flute

### 1 Scope

This document describes a method for the determination of the flat crush resistance of a corrugating medium after laboratory fluting using an A-flute geometry.

The procedure is applicable to any corrugating medium intended to be used, after fluting, in the manufacture of corrugated board.

NOTE ISO 7263-2 describes a method to determine the flat crush resistance using a B-flute geometry.

### 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 187, *Paper, board and pulps — Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples*

ISO 13820, *Paper, board and corrugated fibreboard — Description and calibration of compression-testing equipment*

### 3 Terms and definitions

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

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/>

#### 3.1

##### **flat crush resistance**

maximum force that a corrugated test piece will withstand before the flutes collapse under an increasing force applied perpendicular to its surface

Note 1 to entry: The flat crush resistance is expressed in newtons (N).

#### 3.2

##### **flat crush resistance index**

*flat crush resistance* (3.1) divided by the grammage of the paper

Note 1 to entry: The result is expressed in newton square metres per gram (Nm<sup>2</sup>/g).