



Institut luxembourgeois de la normalisation
de l'accréditation, de la sécurité et qualité
des produits et services

ILNAS-EN ISO 6603-2:2023

Plastics - Determination of puncture impact behaviour of rigid plastics - Part 2: Instrumented impact testing (ISO 6603-2:2023)

Kunststoffe - Bestimmung des
Durchstoßverhaltens von festen
Kunststoffen - Teil 2: Instrumentierter
Schlagversuch (ISO 6603-2:2023)

Plastiques - Détermination du
comportement des plastiques rigides
perforés sous l'effet d'un choc - Partie 2:
Essais de choc instrumentés (ISO

06/2023



National Foreword

This European Standard EN ISO 6603-2:2023 was adopted as Luxembourgish Standard ILNAS-EN ISO 6603-2:2023.

Every interested party, which is member of an organization based in Luxembourg, can participate for FREE in the development of Luxembourgish (ILNAS), European (CEN, CENELEC) and International (ISO, IEC) standards:

- Participate in the design of standards
- Foresee future developments
- Participate in technical committee meetings

<https://portail-qualite.public.lu/fr/normes-normalisation/participer-normalisation.html>

THIS PUBLICATION IS COPYRIGHT PROTECTED

Nothing from this publication may be reproduced or utilized in any form or by any mean - electronic, mechanical, photocopying or any other data carries without prior permission!

ILNAS-EN ISO 6603-2:2023

EUROPEAN STANDARD **EN ISO 6603-2**

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2023

ICS 83.080.01

Supersedes EN ISO 6603-2:2000

English Version

**Plastics - Determination of puncture impact behaviour of
rigid plastics - Part 2: Instrumented impact testing (ISO
6603-2:2023)**

Plastiques - Détermination du comportement des
plastiques rigides perforés sous l'effet d'un choc -
Partie 2: Essais de choc instrumentés (ISO 6603-
2:2023)

Kunststoffe - Bestimmung des Durchstoßverhaltens
von festen Kunststoffen - Teil 2: Instrumentierter
Schlagversuch (ISO 6603-2:2023)

This European Standard was approved by CEN on 26 May 2023.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

Contents	Page
European foreword.....	3

European foreword

This document (EN ISO 6603-2:2023) has been prepared by Technical Committee ISO/TC 61 "Plastics" in collaboration with Technical Committee CEN/TC 249 "Plastics" the secretariat of which is held by SIS.

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 December 2023, and conflicting national standards shall be withdrawn at the latest by December 2023.

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 6603-2:2000.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Endorsement notice

The text of ISO 6603-2:2023 has been approved by CEN as EN ISO 6603-2:2023 without any modification.

**Plastics — Determination of puncture
impact behaviour of rigid plastics —****Part 2:
Instrumented impact testing**

*Plastiques — Détermination du comportement des plastiques rigides
perforés sous l'effet d'un choc —*

Partie 2: Essais de choc instrumentés



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2023

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Principle	7
5 Apparatus	7
6 Test specimens	11
6.1 Shape and dimensions	11
6.2 Preparation of test specimens	11
6.3 Non-homogeneous test specimens	12
6.4 Checking the test specimens	12
6.5 Number of test specimens	12
6.6 Conditioning of test specimens	12
6.7 Pre-cooling	12
7 Procedure	13
7.1 Test atmosphere	13
7.1.1 General	13
7.1.2 Ambient temperature testing	13
7.1.3 Low temperature testing	13
7.2 Measurement of thickness	13
7.3 Clamping the test specimen	13
7.4 Lubrication	13
7.5 Puncture test procedure	14
8 Calculations	14
8.1 Expression of results	14
8.2 Calculation of deflection	14
8.3 Calculation of energy	15
8.4 Statistical parameters	15
8.5 Significant figures	16
9 Precision	16
10 Test report	16
Annex A (informative) Interpretation of complex force-deflection curves	18
Annex B (informative) Friction between striker and specimen	21
Annex C (informative) Clamping of specimens	24
Annex D (informative) Tough/brittle transitions	25
Annex E (informative) Influence of specimen thickness	26
Annex F (informative) Guidance for the classification of the type of failure	28
Annex G (informative) Precision data	33
Bibliography	35