



**ISO 899-2**

**Plastics — Determination of creep  
behaviour —**

Part 2:  
**Flexural creep by three-point loading**

*Plastiques — Détermination du comportement au fluage —  
Partie 2: Fluage en flexion par mise en charge en trois points*

**Third edition  
2024-10**

This is a preview of ISO 899-2:2024. [Click here to purchase the full version from the ANSI store.](#)



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2024

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](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

This is a preview of ISO 899-2:2024. [Click here to purchase the full version from the ANSI store.](#)

|   |           |
|---|-----------|
| <b>Foreword</b> .....   | <b>iv</b> |
| <b>1 Scope</b> .....  | <b>1</b>  |
| <b>2 Normative references</b> .....   | <b>1</b>  |
| <b>3 Terms and definitions</b> .....  | <b>1</b>  |
| <b>4 Apparatus</b> .....  | <b>3</b>  |
| <b>5 Test specimens</b> .....   | <b>4</b>  |
| 5.1 Shape and dimensions.....   | 4         |
| 5.2 Preferred specimen type.....  | 4         |
| 5.3 Other test specimens.....   | 5         |
| <b>6 Procedure</b> .....  | <b>5</b>  |
| 6.1 General.....  | 5         |
| 6.2 Conditioning and test atmosphere.....   | 5         |
| 6.3 Measurement of test-specimen dimensions and distance between supports.....      | 5         |
| 6.4 Mounting the test specimens.....  | 6         |
| 6.5 Selection of stress value.....  | 6         |
| 6.6 Loading procedure.....  | 6         |
| 6.6.1 Preloading.....   | 6         |
| 6.6.2 Loading.....  | 6         |
| 6.7 Deflection-measurement schedule.....  | 6         |
| 6.8 Time measurement.....   | 7         |
| 6.9 Temperature and humidity control.....   | 7         |
| 6.10 Measurement of recovery rate (optional).....                                   | 7         |
| <b>7 Expression of results</b> .....  | <b>7</b>  |
| 7.1 Method of calculation.....  | 7         |
| 7.1.1 Flexural-creep modulus.....   | 7         |
| 7.1.2 Flexural-creep compliance.....  | 7         |
| 7.1.3 Flexural stress.....  | 8         |
| 7.1.4 Flexural-creep strain.....  | 8         |
| 7.1.5 Time to rupture.....  | 8         |
| 7.1.6 Creep-strength limit.....   | 8         |
| 7.2 Presentation of results.....  | 9         |
| 7.2.1 Creep curves.....   | 9         |
| 7.2.2 Creep-modulus/time curves.....  | 9         |
| 7.2.3 Isochronous stress-strain curves.....   | 10        |
| 7.2.4 Three-dimensional representation.....   | 10        |
| 7.2.5 Creep-to-rupture curves.....  | 10        |
| 7.3 Precision.....  | 11        |
| <b>8 Test report</b> .....  | <b>11</b> |
| <b>Annex A (informative) Physical-ageing effects on the creep of polymers</b> ..... | <b>12</b> |
| <b>Bibliography</b> .....   | <b>16</b> |

This is a preview of ISO 899-2:2024. [Click here to purchase the full version from the ANSI store.](#)

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 document 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)).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at [www.iso.org/patents](http://www.iso.org/patents). ISO shall not be held responsible for identifying any or all such patent rights.

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 61, *Plastics*, Subcommittee SC 2, *Mechanical behavior*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 249, *Plastics*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 899-2:2003), which has been technically revised. It also incorporates the Amendment ISO ISO 899-2:2003/Amd. 1:2015.

The main changes are as follows:

- the accuracy requirements for the deflection measurement device have been updated;
- the normative references have been updated;
- the definition of "creep" has been adapted for clarity;
- the definitions for shape and dimensions of test specimens were adapted from ISO 178:2019;
- identified inconsistencies and mistakes have been corrected.

A list of all parts in the ISO 899 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).