



BSI Standards Publication

Fine ceramics (advanced ceramics, advanced technical ceramics) — Methods of tests for reinforcements — Determination of the tensile properties of ceramic filaments at elevated temperature in air using the hot grip technique

National foreword

This British Standard is the UK implementation of ISO 17590:2025.

The UK participation in its preparation was entrusted to Technical Committee RPI/13, Advanced technical ceramics.

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

Contractual and legal considerations

This publication has been prepared in good faith, however no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability is or will be accepted by BSI in relation to the adequacy, accuracy, completeness or reasonableness of this publication. All and any such responsibility and liability is expressly disclaimed to the full extent permitted by the law.

This publication is provided as is, and is to be used at the recipient's own risk.

The recipient is advised to consider seeking professional guidance with respect to its use of this publication.

This publication is not intended to constitute a contract. Users are responsible for its correct application.

© The British Standards Institution 2025
Published by BSI Standards Limited 2025

ISBN 978 0 539 23235 6

ICS 81.060.30

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 July 2025.

Amendments/corrigenda issued since publication

Date	Text affected
------	---------------



International
Standard

ISO 17590

**Fine ceramics (advanced ceramics,
advanced technical ceramics) —
Methods of tests for reinforcements
— Determination of the tensile
properties of ceramic filaments at
elevated temperature in air using
the hot grip technique**

*Céramiques techniques — Méthodes d'essais pour renforts
— Détermination des propriétés en traction des filaments à
température élevée par la technique des mors chauds*

**First edition
2025-07**

Reference number
ISO 17590:2025(en)

Full document details: BS ISO 17590:2025

© ISO 2025  **Documents**
Document Sharing Hub



COPYRIGHT PROTECTED DOCUMENT

© ISO 2025

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	1
4 Principle	2
5 Apparatus	3
5.1 Tensile testing machine	3
5.2 Grip system	3
5.3 Specimen holding device	3
5.4 Adhesive	4
5.5 Thermocouples	4
5.6 Heating device	4
6 Test specimen gauge length	5
7 Test specimen preparation	5
7.1 Size removal	5
7.2 Test specimen assembly	5
7.3 Filament selection	6
7.4 Filament gluing	7
7.5 Filament initial cross-section area determination	7
7.6 Number of test specimens	7
8 Test procedure	7
8.1 Load cell	7
8.2 Specimen mounting	7
8.3 Specimen adjusting	7
8.4 Furnace heating	7
8.5 Displacement rate setting	8
8.6 Measurement	8
8.7 Test validity	8
9 Calculation of results	8
9.1 Tensile strength	8
9.2 Total compliance	8
9.3 Load train compliance	9
9.4 Young's modulus	10
9.5 Fracture strain	10
10 Test report	11
Bibliography	12

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 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).

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. 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.

This document was prepared by Technical Committee ISO/TC 206, *Fine Ceramics*.

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.