



JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS R 1631 : 1998

**Test method for tensile creep of fine
ceramics**

ICS 81.060.01

Descriptors : ceramics, special ceramics, hardness, strength of materials, non-metals, chemical elements and inorganic compounds, tensile testing, creep testing

Reference number : JIS R 1631 : 1998 (E)

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Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of International Trade and Industry through deliberations at Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law.

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Date of Establishment: 1998-01-20

Date of Public Notice in Official Gazette: 1998-01-20

Investigated by: Japanese Industrial Standards Committee
Divisional Council on Ceramics

JIS R 1631:1998, First English edition published in 1998-12

Translated and published by: Japanese Standards Association
4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

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Printed in Japan

Test method for tensile creep of fine ceramics

1 Scope This Japanese Industrial Standard specifies the method to measure the strain of the high temperature tensile creep and the breaking time of fine ceramics to be used as the high-strength material such as mechanical parts and structural materials under the continuous conditions of the constant temperature and the constant load.

2 Normative references The following standards contain provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent editions of the standards indicated below shall be applied.

JIS B 0601 *Surface roughness – Definitions and designation*

JIS B 7502 *Micrometer callipers*

JIS B 7507 *Vernier, dial and digital callipers*

JIS B 7741 *Extensometers used in metallic material tensile testing*

JIS C 1602 *Thermocouples*

JIS R 1600 *Glossary of terms relating to fine ceramics*

JIS Z 8704 *Temperature measurement – Electrical methods*

3 Definitions For the main terms used in this Standard the definitions in JIS R 1600 apply, and the rest of the terms are as follows.

- a) **tensile creep** Deformation of the test piece to the temporal elapse when the constant tensile load is applied to the test piece.
- b) **load stress** The value (Pa) of the tensile load applied to the test piece divided by the sectional area of the gauge part when the creep test is started.
- c) **gauge part** The part between gauge marks to measure the elongation of the test piece.
- d) **grip section** The part to be gripped by the gripping device of the creep test apparatus at the end part of the test piece.
- e) **flange part** The projected part at each end of the gauge section to measure the elongation of the gauge section of the test piece.
- f) **radius of shoulder part** The radius (mm) of the arc part to be provided between the gauge part and the grip section to uniformly distribute the stress at the gauge part.
- g) **gripping device** The device to grip the end parts of the test piece and apply the uniaxial load to the test piece in the creep test.
- h) **elongation measuring device** The device to measure, indicate or record the elongation of the test piece.
- i) **strain gauge** The (foil) strain gauge to be used in measuring the bending strain