

JIS

JAPANESE INDUSTRIAL STANDARD

**Test method for tensile
properties of fiber
reinforced metals**

JIS H 7405^{—1993}

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by

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In the event of any doubt arising,
the original Standard in Japanese is to be final authority.

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Test method for tensile properties
of fiber reinforced metals

H 7405-1993

1. Scope This Japanese Industrial Standard specifies the test method for tensile properties at room temperature and at a high temperature of metal matrix composites reinforced by continuous fiber.

Remarks 1. The test method for tensile properties at a high temperature of fiber reinforced metals shall be in accordance with Annex.

2. The following standards are cited in this Standard:

JIS B 7502 Micrometer callipers for external measurement

JIS B 7507 Vernier, dial and digital callipers

JIS B 7721 Tensile testing machines

JIS B 7741 Extensometers used in metallic material tensile testing

JIS C 1602 Thermocouples

JIS H 7006 Glossary of terms used in metal matrix composites

JIS Z 2241 Method of tensile test for metallic materials

JIS Z 8401 Rules for rounding off of numerical values

2. Definitions For the main terms used in this Standard the definitions in JIS H 7006 and JIS Z 2241 apply, and the rest of the terms shall be as follows:

- (1) tensile stress Is a value obtained by dividing tensile load applied to a test piece at any point of time by the original sectional area of the gage part of the test piece.
- (2) tensile strength Is the maximum tensile stress applied to a test piece in a tension test.
- (3) strain Is a dimensionless quantity obtained by dividing the variation in the gage length of a test piece by the original gage length.
- (4) fracture strain Is the maximum strain applied to a test piece in a tension test.
- (5) longitudinal elastic modulus under tension
 - (a) A value obtained from the initial gradient part in a tensile load – strain diagram or a tensile stress – strain diagram. Its quantity symbol shall be E_1 (see Fig. 1).
 - (b) A value obtained from the gradient part of the tangent drawn to a tensile load – strain diagram or a tensile stress – strain diagram at 0.5 % in strain. Its quantity symbol shall be E_2 (see Fig. 1).