

JIS

JAPANESE INDUSTRIAL STANDARD

**Test method for preferred fiber
orientation parameter in fiber
reinforced metals**

JIS H 7403—1993

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Test method for preferred fiber orientation
parameter in fiber reinforced metals

H 7403-1993

1. Scope This Japanese Industrial Standard specifies the test method for preferred fiber orientation parameter in fiber reinforced metals reinforced unidirectionally by short fibers.

Remarks 1. This Standard may apply to short fiber reinforced metals having no orientation. In that case, the reference axis may be determined in an optional direction.

2. The following standards are cited in this Standard.

JIS H 7006 Glossary of terms used in metal matrix composites

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 apply, and the rest of the terms shall be as follows:

- (1) reference axis Is the fiber direction of fiber reinforced metals reinforced unidirectionally. For materials which plastic working is applied to, it is the direction which plastic working is applied to.
- (2) projected reference axis Is the reference axis on the observed surface in the case where the reference axis is projected on the observed surface.
- (3) projected fiber direction Is the fiber direction on the observed surface in the case where a fiber is projected on the observed surface.
- (4) projected orientation angle Is the angle made between a projected fiber direction and a projected reference axis.
- (5) fiber orientation parameter Is an index which indicates the degree of a projected orientation angle for many fibers. In this Standard, it is expressed by the absolute value and standard deviation of the average of the projected orientation angle.

3. Test piece

3.1 Sampling position and measuring surface A test piece shall be sampled from the central part of a specimen avoiding the working started part and the working finished part.

Further, the measuring surface shall be a surface normal to the reference axis.

3.2 Shape and dimensions The shape of a test piece shall be any one of a round bar, a square bar or a plate state. The diameter of a round bar test piece and the lengthwise and crosswise sizes of a square bar or a plate state test piece shall be at least 500 times the diameter of a fiber.

4. Procedure of measurement The procedure of measurement shall be as follows: