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**High deformation rate testing by  
split Hopkinson bar method**

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## **Foreword**

This Japanese Industrial Standard has been established by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee according to the proposal for establishment of Japanese Industrial Standard submitted by High Pressure Institute of Japan (HPI)/Japanese Standards Association (JSA) with a draft being attached, based on the provision of Article 12, paragraph (1) of the Industrial Standardization Act.

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# High deformation rate testing by split Hopkinson bar method

## 1 Scope

This Japanese Industrial Standard specifies the procedures for compression, tensile and bending tests conducted by the high deformation rate testing using split Hopkinson bar method.

Where compression, tensile and bending test methods are specified in the individual product standards, e.g. of metallic materials or non-metallic materials, those methods shall apply instead of the methods specified in this Standard.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS G 0202 *Glossary of terms used in iron and steel (Testing)*

JIS G 4805 *High carbon chromium bearing steels*

JIS H 4040 *Aluminium and aluminium alloy bars and wires*

JIS H 4080 *Aluminium and aluminium alloy extruded tubes and cold-drawn tubes*

JIS Z 2241 *Metallic materials—Tensile testing—Method of test at room temperature*

## 3 Terms and definitions

For the purpose of this Standard, the terms and definitions given in **JIS G 0202** and **JIS Z 2241**, and the following apply.

### 3.1

#### **stress wave, strain wave**

propagated wave of stress or strain

Stress and strain waves that propagate in the elastic deformation area are called elastic stress wave and elastic strain wave, respectively. In the calculation of stress and strain of a specimen, they are treated as one-dimensional longitudinal elastic stress wave and one-dimensional longitudinal elastic strain wave.

### 3.2

#### **input bar**

bar that is a component of a test apparatus for the split Hopkinson bar method, used for giving an elastic stress wave to the specimen

### 3.3

#### **output bar**

bar that is a component of a test apparatus for the split Hopkinson bar method, used for capturing an elastic stress wave that propagates due to deformation of the specimen