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Plastics—Determination of puncture impact behaviour of rigid plastics—Part 1 : Non-instrumented impact testing

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Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee according to the proposal of establishing a Japanese Industrial Standard from The Japan Plastics Industry Federation (JPIF)/Japanese Standards Association (JSA), with a draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law.

This Standard has been made based on **ISO 6603-1** : 2000 *Plastics—Determination of puncture impact behaviour of rigid plastics—Part 1 : Non-instrumented impact testing* for the purposes of making it easier to compare this Standard with International Standard; to prepare Japanese Industrial Standard conforming with International Standard; and to propose a draft of an International Standard which is based on Japanese Industrial Standard.

Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have technical properties. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have the said technical properties.

JIS K 7211 consists of the following 2 parts, under the general title "*Plastics—Determination of puncture impact behaviour of rigid plastics*":

Part 1 : Non-instrumented impact testing
Part 2 : Instrumented impact testing

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In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

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Plastics—Determination of puncture impact behaviour of rigid plastics—Part 1 : Non-instrumented impact testing

Introduction This Japanese Industrial Standard has been prepared based on the second edition of **ISO 6603-1** *Plastics—Determination of puncture impact behaviour of rigid plastics—Part 1 : Non-instrumented impact testing* published in 2000 without modifying the technical contents for the corresponding parts (dimensions and shape) and adding some requirements not given in the original International Standard that are unique to **JIS**.

The portions given continuous sidelines or dotted underlines are the matters not included in the original International Standard. A list of modifications with explanations is shown in Annex 1 (informative).

1 Scope This part of **JIS K 7211** specifies methods for the determination of puncture-impact properties of rigid plastics in the form of flat test specimens, such as discs or square pieces, under defined conditions. Specimens may be moulded directly, cut from sheets or taken from finished products. Different types of test specimens and test conditions are defined.

These falling-dart methods are used to investigate the behaviour of plastic sheeting or moulding under the impact of a striker applied perpendicular to the plane of the specimen.

This part of **JIS K 7211** can be used if it is sufficient to characterize the impact behaviour of plastics by a threshold value of impact-failure energy based on many test specimens. **JIS K 7211-2** is used if a force-deflection or force-time diagram, recorded at nominally constant striker velocity, is necessary for detailed characterization of the impact behaviour.

These test methods are applicable to specimens with a thickness between 1 mm and 4 mm.

NOTE : For thicknesses less than 1 mm, **JIS K 7124-1** and **JIS K 7124-2** should preferably be used. Thicknesses greater than 4 mm may be tested if the equipment is suitable, but the test falls outside the scope of this part of **JIS K 7211** and **JIS K 7211-2**.

These methods are suitable for use with the following types of material:

— rigid thermoplastic moulding and extrusion materials, including filled, unfilled and reinforced compounds and sheets;

— rigid thermosetting moulding and extrusion materials, including filled and reinforced compounds, sheets and laminates;

— fibre-reinforced thermoset and thermoplastic composites incorporating unidirectional or non-unidirectional reinforcements such as mats, woven fabrics, woven rovings, chopped strands, combination and hybrid reinforcements, rovings, milled fibres and sheets made from pre-impregnated materials (prepregs).

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