



JAPANESE
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STANDARD

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JIS K 5600-5-2 : 1999

(ISO 1520 : 1973)

**Testing methods for paints—
Part 5 : Mechanical property
of film—
Section 2 : Cupping test**

ICS 87.040

Descriptors : paints, film-forming capacity, cross-cut test, painting, membranes,
cupping tests, cracking, adhesion, mechanical testing

Reference number : JIS K 5600-5-2 : 1999 (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 the Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law.

JIS K 5400 corresponding to this Standard will be withdrawn and replaced with this Standard in April 2002, at the time of three years passed after establishment of this Standard.

Consequently it is recommended to comply with this Standard.

JIS K 5600 consists of the following parts.

- JIS K 5600 Part 1 Section 1 to Section 8 *General rule*
- JIS K 5600 Part 2 Section 1 to Section 7 *Characteristics and stability of paints*
- JIS K 5600 Part 3 Section 1 to Section 6 *Film formability*
- JIS K 5600 Part 4 Section 1 to Section 7 *Visual characteristics of film*
- JIS K 5600 Part 5 Section 1 to Section 11 *Mechanical property of film*
- JIS K 5600 Part 6 Section 1 to Section 3 *Chemical property of film*
- JIS K 5600 Part 7 Section 1 to Section 8 *Long-period performance of film*
- JIS K 5600 Part 8 Section 1 to Section 6 *Evaluation of degradation of paint coatings*

JIS K 5600-5 consists of the following sections under the title of "Testing methods for paints—Part 5 : Mechanical property of film".

- JIS K 5600 Part 5 Section 1 *Bend test (cylindrical mandrel)*
- JIS K 5600 Part 5 Section 2 *Cupping test*
- JIS K 5600 Part 5 Section 3 *Falling-weight test*
- JIS K 5600 Part 5 Section 4 *Scratch hardness (Pencil method)*
- JIS K 5600 Part 5 Section 5 *Scratch hardness (Stylus method)*
- JIS K 5600 Part 5 Section 6 *Adhesion test (Cross-cut test)*
- JIS K 5600 Part 5 Section 7 *Adhesion test (Pull-off methods)*
- JIS K 5600 Part 5 Section 8 *Abrasion resistance (Rotating abrasive-paper-covered wheel method)*
- JIS K 5600 Part 5 Section 9 *Abrasion resistance (Rotating abrasive rubber wheel method)*
- JIS K 5600 Part 5 Section 10 *Abrasion resistance (Reciprocating test panel method)*
- JIS K 5600 Part 5 Section 11 *Washability*

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Testing methods for paints— Part 5 : Mechanical property of film— Section 2 : Cupping test

Introduction This Japanese Industrial Standard has been prepared based on ISO 1520 *Paints and varnishes—Cupping* issued in 1973 as the first edition without changing the technical contents.

This Standard is one of a series dealing with the sampling and testing of paints, varnishes and related products.

This information shall be derived from the national standard or other document for the product under test or, where appropriate, shall be the subject of agreement between the interested parties.

- a) Nature, thickness and surface preparation of substrate.
- b) Method of application of test coating to substrate.
- c) Thickness, in micrometres, of the dry coating, including method of measurement, and whether it is a single coating or a multicoat system.
- d) Duration and conditions of drying of the coated panel before testing (or conditions of stoving and ageing, if applicable).
- e) The specified depth of indentation, if applicable, at which the test is to be carried out.

The portions underlined with dots in this Standard are not stated in the original International Standard.

1 Scope This Standard is one of a series dealing with the sampling and testing of paints, varnishes and related products.

1.1 This Standard specifies an empirical test procedure for assessing the resistance of a coating of paint, varnish or related product to cracking and/or detachment from a metal substrate when subjected to gradual deformation by indentation under standard conditions (the difference from DuPont method exists in 35 mm gap between tup and die).

1.2 For a multicoat system, each coat may be tested separately or the complete system may be tested.

1.3 The method specified may be carried out either as a “go/no go” test, by testing to a specified depth of indentation to assess compliance with a particular requirement; or by gradually increasing the depth of indentation to determine the minimum depth at which the coating cracks and/or becomes detached from the substrate.

2 Normative references The following standards contain provisions which, through reference in this Standard, constitute provisions of this Standard. If the indication of the year of coming into effect is given to this referred standard, only the edition of indicated year constitutes the provision of this Standard but the revision and