



JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS K 5600-5-3 : 1999

**Testing methods for paints—
Part 5 : Mechanical property
of film—
Section 3 : Falling-weight test**

ICS 87.040

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

Reference number : JIS K 5600-5-3 : 1999 (E)

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JIS K 5400 corresponding to this Standard will be withdrawn and replaced with this Standard in April 2002, at the time of three years passed after establishment of this Standard.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

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Testing methods for paints— Part 5 : Mechanical property of film— Section 3 : Falling-weight test

Introduction This Japanese Industrial Standard has been prepared based on the first edition of *ISO 6272 Paints and varnishes—Falling-weight test*, published in 1993, without any modification in technical content, except additionally included specification on testing methods which were not hitherto specified in the corresponding International Standard.

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

1 Scope This Japanese Industrial Standard is one of a series of standards dealing with the sampling and testing of paints and their related products. This Standard specifies the test method for evaluating the resistance of a dry film of coating to cracking or peeling from a substrate when it is subjected to a deformation caused by a falling-weight, dropped under the specified conditions.

Remarks 1 The term “impact test” has been omitted intentionally from this Standard because a rapid deformation should be produced than a true impact in the falling-weight apparatus used in this Standard.

The following methods shall be applied:

- the test to judge of pass or fail with using of a specified weight from one drop height so as to test the compliance with a particular specification; or
- the classification test to determine the minimum mass and/or drop height for which the coating film crack or peel from its substrate by gradually increasing the drop height and/or the mass.

Remarks : The corresponding International Standard to this Standard is as follows:

ISO 6272 : 1993 *Paints and varnishes—Falling-weight test*

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 these referred standards, only the edition of indicated year constitutes the provision of this Standard but the revision and amendment made thereafter are not applied. The normative references without the indication of the year of coming into effect apply limiting only to the most recent edition (including the amendment).

JIS B 1501 *Steel balls for ball bearings*

JIS K 5600-1-2 *Testing methods for paints—Part 1 : General rule—Section 2 : Sampling of products*

Remarks : *ISO 1512 : 1991 Paints and varnishes—Sampling of products in liquid or paste form* is identical with the said standard.