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STANDARD

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JIS K 5600-2-5 : 1999

(ISO 1524 : 1983)

**Testing methods for paints—
Part 2 : Characteristics and
stability of paints—
Section 5 : Fineness of grind**

ICS 87.040

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(chemical technology), dispersions (chemical)

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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JIS K 5400 corresponding to this Standard will be withdrawn and replaced with this Standard in April 2002, at the time of three years passed after establishment of this Standard.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	<i>General rule</i>
JIS K 5600 Part 2 Section 1 to Section 7	<i>Characteristics and stability of paints</i>
JIS K 5600 Part 3 Section 1 to Section 6	<i>Film formability</i>
JIS K 5600 Part 4 Section 1 to Section 7	<i>Visual characteristics of film</i>
JIS K 5600 Part 5 Section 1 to Section 11	<i>Mechanical property of film</i>
JIS K 5600 Part 6 Section 1 to Section 3	<i>Chemical property of film</i>
JIS K 5600 Part 7 Section 1 to Section 8	<i>Long-period performance of film</i>
JIS K 5600 Part 8 Section 1 to Section 6	<i>Evaluation of degradation of paint coatings</i>

JIS K 5600-2 consists of the following sections under the title of "*Testing methods for paints—Part 2 : Characteristics and stability of paints*".

JIS K 5600 Part 2 Section 1	<i>Colour number (Gardner method)</i>
JIS K 5600 Part 2 Section 2	<i>Viscosity</i>
JIS K 5600 Part 2 Section 3	<i>Viscosity (Corn and plate methods)</i>
JIS K 5600 Part 2 Section 4	<i>Density</i>
JIS K 5600 Part 2 Section 5	<i>Fineness of grind</i>
JIS K 5600 Part 2 Section 6	<i>Pot life</i>
JIS K 5600 Part 2 Section 7	<i>Storage stability</i>

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Testing methods for paints— Part 2 : Characteristics and stability of paints— Section 5 : Fineness of grind

Introduction This Japanese Industrial Standard has been prepared based on ISO 1524 *Paints and varnishes—Determination of fineness of grind* issued in 1983 without changing the technical contents.

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

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

This Standard specifies a method for determining the fineness of grind of paints and related products by the use of a suitable gauge graduated in micrometers.

Note : Certain fineness-of-grind gauges that are used in industry are graduated in non-SI units (see Annex A). Use of these units is not recommended.

This Standard is applicable to all types of liquid paints and related products. Of the four gauges referred to in 5.1, the 100 μm gauge is suitable for general use, but the 50 μm gauge and especially the 15 and 25 μm gauges will only provide reliable results in the hands of skilled laboratory personnel. Particular caution is necessary in interpreting readings of less than 10 μm .

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

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

JIS K 5600-1-3 Testing methods for paints—Part 1 : General rule—Section 3 : Examination and preparation of samples for testing

ISO 1513 : 1992 Paints and varnishes—Examination and preparation of samples for testing is identical with the said standard.

3 Definition For the purposes of this Standard, the following definition applies.

fineness of grind The reading obtained on a standard gauge under specified conditions of test, indicating the depth of the groove(s) of the gauge at which discrete solid particles in the product are readily discernible.

4 Apparatus

4.1 Gauge Consisting of a block of hardened steel approximately 175 mm long, 65 mm wide and 13 mm thick.

Note : It is recommended that, at least for use with water-dilutable paints, a block of stainless steel should be used.

The top surface of the block shall be both plane and ground smooth and shall contain one or two grooves approximately 140 mm long and 12.5 mm wide parallel to the longer sides of the block. The depth of each groove shall be uniformly tapered along its length from a suitable depth (for example 15, 25, 50 or 100 μm) at one end to zero depth at the other end and shall be graduated as specified in the table. Diagrams of typical gauges are given in Fig. 1.

The depth of the groove at any position along its length shall not depart from its nominal value at any position across the groove by more than 2.5 μm . A method for checking the groove depth is described in Annex B.

The top surface of the block shall be finished by fine grinding or lapping; it shall be flat so that all points lie between two parallel planes 12 μm apart and, in addition, at every position along the surface, the transverse generator (Informative reference : the instrument for ensuring the parallelism between two straight lines) shall be straight so that all points along it lie between two parallel straight lines 1 μm apart.

Notes 1 Steel gauges of the approximate dimensions stated are suitable for the test, but other gauges giving similar results may be used (see Annex A).

2 The precision of the fineness-of-grind determination depends in part on which gauge is used (see clause 7). Therefore it is essential to identify the gauge (100, 50, 25, or 15 μm) when reporting results or specifying requirements.

Table Graduation of typical gauges and the ranges for which gauges are recommended

Maximum depth of groove	Interval of graduations	Recommended range
μm	μm	μm
100	10	40 to 90
50	5	15 to 40
25	2.5	5 to 15
15	1.5	1.5 to 12

4.2 Scraper Consisting of a single- or double-edged steel blade approximately 90 mm long, 40 mm wide and 6 mm thick. The edge(s) on the long side(s) shall be straight and rounded to a radius of approximately 0.25 mm. A drawing of a suitable scraper is shown in Fig. 2.

The scraper shall be periodically checked for wear, damage or warpage by placing the edge of the scraper on the reference plane surface (see Annex B.2.3) and inspecting the contact edge against a strong light. Reject the scraper if poor contact