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STANDARD

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JIS K 5600-4-1 : 1999
(ISO/FDIS 6504-3 : 1998)

**Testing methods for paints—
Part 4 : Visual characteristics
of film—
Section 1 : Hiding power
(for light-coloured paints)**

ICS 87.040

Descriptors : paints, painting, membranes, visual perception, determination of content, thickness

Reference number : JIS K 5600-4-1 : 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JIS K 5400 corresponding to this Standard will be withdrawn and replaced with this Standard in April 2002, at the time of three years passed after establishment of this Standard.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	<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 5600-4 consists of the following sections under the title of "Testing methods for paints—Part 4 : Visual characteristics of film".

JIS K 5600 Part 4 Section 1	<i>Hiding power (for light-coloured paints)</i>
JIS K 5600 Part 4 Section 2	<i>Hiding power (for dark-coloured paints)</i>
JIS K 5600 Part 4 Section 3	<i>Visual comparison of the colour of paints</i>
JIS K 5600 Part 4 Section 4	<i>Colorimetry (Principles)</i>
JIS K 5600 Part 4 Section 5	<i>Colorimetry (Measurement)</i>
JIS K 5600 Part 4 Section 6	<i>Colorimetry (Calculation of colour differences)</i>
JIS K 5600 Part 4 Section 7	<i>Specular gloss</i>

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**Testing methods for paints—
Part 4 : Visual characteristics of film—
Section 1 : Hiding power
(for light-coloured paints)**

Introduction This Japanese Industrial Standard has been prepared based on ISO/FDIS 6504-3 *Paints and Varnishes—Determination of hiding power—Part 3 : Determination of contrast ratio (opacity) of light-coloured paints at a fixed spreading rate* issued in 1998 without changing the technical contents.

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

For determining the contrast ratio of paints, two alternative techniques for test film preparation and measurement are available:

- a) application to colourless, transparent polyester foil, the coated foil being subsequently placed in turn over black and white glass panels;
- b) direct application to black and white charts, for example hiding-charts or Morest charts.

Because different operators using the same draw-down device will obtain paint films differing significantly in thickness, an absolute method for the determination of opacity is required. Collaborative trials between groups of experts from a number of countries have shown that reproducible results can be obtained by determination of the contrast ratio corresponding to a precisely fixed spreading rate by interpolation between measurements at two or more measured film thicknesses. The spreading rate selected in this standard is 20 m²/l (wet film thickness 50 µm), considered an average for brush application of a free-flowing paint on a smooth, non-porous surface. However, for particular types of paint normally used at other film thickness ranges, for example industrial enamels and printing inks, the interested parties may agree another spreading rate.

Further collaborative trials indicated that a higher reproducibility was obtained with films spread on polyester foil than with films spread on a black and white chart, although the latter technique was simpler to operate. This Standard provides for both these options.

1 Scope This Standard is one of a series of standards dealing with the sampling and testing of paints, varnishes and related products. It specifies methods for determining the opacity (by contrast ratio measurement) given by paint films of white or light colours of tristimulus value *Y* greater than 25, applied at a spreading rate of 20 m²/l to an agreed black and white chart or to colourless transparent polyester foil, in the latter case the tristimulus value *Y* being measured subsequently over agreed black and white glass panels.

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 standard, only the edition of indicated year constitutes the provision of this Standard but the revision and