



JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS K 5660 : 2008

(JPMA/JSA)

Glossy synthetic resin emulsion paint

ICS 83.140.99 ; 87.040 ; 91.180

Reference number : JIS K 5660 : 2008 (E)

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K 5660 : 2008

Date of Establishment: 1989-03-01

Data of Revision: 2008-12-20

Date of Public Notice in Official Gazette: 2008-12-22

Investigated by: Japanese Industrial Standards Committee

Standards Board

Technical Committee on Chemical Products

JIS K 5660 : 2008, First English edition published in 2009-07

Translated and published by: Japanese Standards Association
4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by Japan Paint Manufacturers Association (JPMA) / Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently, **JIS K 5660:2003** is replaced with this Standard.

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Glossy synthetic resin emulsion paint

1 Scope

This Japanese Industrial Standard specifies the glossy synthetic resin emulsion paint (hereafter referred to as “the paint”), which is used on concrete or cement mortar inside or outside of buildings and structures. The paint shall not contain any of urea resins, melamine resins, urea and melamine cocondensation resins, phenol resins, resorcinol resins and formaldehyde based preservations.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS A 5430 *Fiber reinforced cement boards*

JIS K 3302 *Laundry bar soaps*

JIS K 5500 *Glossary of terms for coating materials*

JIS K 5582 *Vinyl chloride resin enamel*

JIS K 5600-1-1 *Testing methods for paints — Part 1 : General rule — Section 1 : General test methods (conditions and methods)*

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

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

JIS K 5600-1-4 *Testing methods for paints — Part 1 : General rule — Section 4 : Standard panels for testing*

JIS K 5600-1-5 *Testing methods for paints — Part 1 : General rule — Section 5 : Coating of test panel (brush application)*

JIS K 5600-1-6 *Testing methods for paints — Part 1 : General rule — Section 6 : Temperatures and humidities for conditioning and testing*

JIS K 5600-1-7 *Testing methods for paints — Part 1 : General rule — Section 7 : Determination of film thickness*

JIS K 5600-1-8 *Testing methods for paints — Part 1 : General rule — Section 8 : Reference sample*

JIS K 5600-2-7 *Testing methods for paints — Part 2 : Characteristics and stability of paints Section 7 : Storage stability*

- JIS K 5600-3-2 *Testing methods for paints — Part 3 : Film formability — Section 2 : Surface-drying test (Ballotini method)*
- JIS K 5600-4-1 *Testing methods for paints — Part 4 : Visual characteristics of film — Section 1 : Hiding power (for light-coloured paints)*
- JIS K 5600-4-3 *Testing methods for paints — Part 4 : Visual characteristics of film — Section 3 : Visual comparison of the colour of paints*
- JIS K 5600-4-6 *Testing methods for paints — Part 4 : Visual characteristics of film — Section 6 : Colorimetry (Calculation of colour differences)*
- JIS K 5600-4-7 *Testing methods for paints — Part 4 : Visual characteristics of film — Section 7 : Specular gloss*
- JIS K 5600-5-11 *Testing methods for paints — Part 5 : Mechanical property of film — Section 11 : Washability*
- JIS K 5600-6-1 *Testing methods for paints — Part 6 : Chemical property of film — Section 1 : Resistance to liquids (General methods)*
- JIS K 5600-7-4 *Testing methods for paints — Part 7 : Long-period performance of film — Section 4 : Humidity and cool-heat cycling test*
- JIS K 5600-7-6 *Testing methods for paints — Part 7 : Long-period performance of film — Section 6 : Natural weathering*
- JIS K 5600-7-7 *Testing methods for paints — Part 7 : Long-period performance of film — Section 7 : Accelerated weathering and exposure to artificial radiation (Exposure to filtered xenon-arc radiation)*
- JIS K 5600-8-2 *Testing methods for paints — Part 8 : Evaluation of degradation of paint coatings — Section 2 : Designation of degree of blistering*
- JIS K 5600-8-4 *Testing methods for paints — Part 8 : Evaluation of degradation of paint coatings — Section 4 : Designation of degree of cracking*
- JIS K 5600-8-5 *Testing methods for paints — Part 8 : Evaluation of degradation of paint coatings — Section 5 : Designation of degree of flaking*
- JIS K 5600-8-6 *Testing methods for paints — Part 8 : Evaluation of degradation of paint coatings — Section 6 : Rating of degree of chalking*
- JIS K 5663 *Synthetic resin emulsion paint & sealer*
- JIS K 6734 *Plastics — Unplasticized poly (vinyl chloride) sheets — Types, dimensions and characteristics — Part 2 : Sheets of thickness less than 1 mm*
- JIS K 8575 *Calcium hydroxide*
- JIS Z 1524 *Pressure sensitive adhesive cloth tapes for packaging*
- JIS Z 1525 *Pressure sensitive adhesive polyvinyl chloride tapes for packaging*
- JIS Z 8401 *Guide to the rounding of numbers*
- JIS Z 8721 *Colour specification — Specification according to their three attributes*

JIS Z 8722 *Methods of colour measurement — Reflecting and transmitting objects*

3 Terms and definitions

For the purposes of this Standard, the terms and definitions given in JIS K 5500 shall apply.

4 Classification of formaldehyde emission grade

The classification of formaldehyde emission grade of the paint shall be F☆☆☆☆.

NOTE 1 The classification of formaldehyde emission grade shall be in accordance with Building Standards Law.

NOTE 2 F☆☆☆☆ shows that the emission is 0.12 mg/L or lower when 7 days have elapsed after the application of 7.3 b) 4) in accordance with clause 3 (Desiccator method) of JIS K 5601-4-1.

5 Quality

The quality shall conform to table 1 when tested in accordance with clause 7.

NOTE : The materials, dimensions and the number of test panels, and the number of test days necessary for the test of items given in table 1 are given in Annex B. The volume of sample needed for this test is approximately 1 600 ml.

Table 1 Quality

Item		Quality	Subclause
Condition inside container		Uniform without any hard lumps when stirred.	7.4
Application workability		No impediment.	7.5
Appearance of paint film		Normal.	7.6
Low-temperature stability (– 5 °C)		No deterioration.	7.7
Surface-drying property	Ordinary temperature drying	Surface-drying within 2 h.	7.8
	Low temperature drying	Surface-drying within 4 h.	
Hiding power % [white and tint ^{a)}]		95 min.	7.9
Specular gloss (60 °)		70 min.	7.10
Water resistance		No abnormality.	7.11
Alkali resistance		No abnormality.	7.12
Washability		Withstand washing.	7.13
Humidity and cool-heat cycling resistance		Withstand humidity and cool-heat cycling.	7.14
Accelerated weather resistance		Gloss retention ratio is 60 % or over and degree of chalking is 1 or 0 and degree of colour change is little compared with evaluation sample	7.15
Natural weathering resistance		Degree of chalking is 2, 1 or 0. There shall be no cracking, peeling, swelling and pin-hole, and the degree of colour change and gloss change are little compared with evaluation sample	7.16
Note ^{a)} Tint means light colour such as gray, pink, cream, light green and light blue appeared on the paint film which is manufactured by using white enamel as its main component. The lightness <i>V</i> in accordance with JIS Z 8721 shall be 6 or over to and excluding 9.			

6 Evaluation sample

The evaluation sample shall be as shown in table 2 in accordance with 4.1.2 a) of JIS K 5600-1-8.

Table 2 Evaluation sample

Test item	Item to be observed	Classification of evaluation sample		
		Form	Approval system	Quality level
Low-temperature stability	Brush mark and change of colour	Paint sample	Manufacturer's sample	Boundary sample
Appearance of paint film				
Accelerated weather resistance	Change of colour			
Natural weathering resistance	Change of colour and gloss			