KES

Measuring Test for Color of Paint (I) – Regulations for Color of Paint

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Additional Rule

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1. Scope of Application

This standard shall regulate an indicating method for a color by XYZ color index (Decided by International Lightness Association).

2. Definition

2.1 Color tone : Appearance characteristics of testing plate, measured by a spectral distribution value from source of light. Spectral tristimulus value of relative radiance factor of CIE standard measurer ([1]) of the testing plate.

Note ([1]) Standard measurer is a person, who is selected by the International Lightness Association for a normal sight.

2.2 Luminosity : Luminous efficiency function of the CIE standard measurer, which is radiation energy measured along y.

2.3 Relative spectral radiance factor : Ratio of sample light on collected light of spectral reflection and standard light under regulated conditions.

Relative spectral radiance factor of the reflection of the testing plate is the spectral radiance factor, and relative spectral radiance factor of the transmission of the sample is spectral transmission factor.

2.4 Relative luminance factor : Ratio of regulated geometric irradiation of brightness of the testing plate and standard brightness of the collection light.

If the standard brightness is monochromatic light, the relative luminance factor is Y of the tristimulus value.

3. Equipment

(1) Photometric machine is used to measure the relative spectral radiance factor of the testing plate by visible spectrum.

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(2) Irradiation and collection light direction for irradiation surface of the testing plate are should be within 10 ° of regulated angles regulated in Table 1.

Table 1 Geometric conditions of irradiation and collection light

Measurement	Geometric conditions	
	Irradiation	Collection light
Transmission ratio	0 °	180 °
Reflection ratio	0 °	45 °
	0 °	Diffusion

4. Standard Source of Light

There are three kinds, A, B, and C, of standard source of light as shown in Table 2, and the main source of light should be the standard source of light C.

From relative spectral irradiance H_λ and spectral tristimulus values of the standard source of lights A and C, values in Table 3 and 4 are calculated.

Table 2 Characteristics of standard source of light

Standard source of light	Characteristics
Standard source of light A	It represents light from Tungsten light bulb filled with gas.
Standard source of light B	It represents direct ray of light of the sun.
Standard source of light C	It represents daylight.

5. Standard Product

Standard for transparent sample is the source of light itself, and for the standard for opaque testing plate, use new magnesia layer, which thickness is larger than 0.5 mm.

6. Operation

6.1 Calibration

(1) Calibrate the photometric machine often.

(2) Calibrate the filter often using the spectral source of light or didymium filter while measuring.

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