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(SWTF/JSA)

**Test methods for colour fastness to
xenon arc lamp light**

ICS 59.080.01

Reference number : JIS L 0843 : 2006 (E)

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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 Suga Weathering Technology Foundation (SWTF) / 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 L 0843:1998** is replaced with this Standard.

This Standard has been made based on **ISO 105-B02 : 1994** *Textiles—Tests for colour fastness—Part B02: Colour fastness to artificial light: Xenon arc fading lamp test*, Amendment 1 (1998) and Amendment 2 (2000), and **ISO 105-B06 : 1998** *Textiles—Tests for colour fastness—Part B06: Colour fastness and ageing to artificial light at high temperatures: Xenon arc fading lamp test* and Amendment 1 (2002) for the purpose of making it easier to compare this Standard with International Standard; to prepare Japanese Industrial Standard conforming with International Standard; and to propose a draft of an International Standard which is based on Japanese Industrial Standard.

Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have technical properties. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have the said technical properties.

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the original JIS is to be the final authority.

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Test methods for colour fastness to xenon arc lamp light

Introduction This Japanese Industrial Standard has been prepared based on the fourth edition of **ISO 105-B02 Textiles—Tests for colour fastness—Part B02: Colour fastness to artificial light: Xenon arc fading lamp test** published in 1994, Amendment 1 published in 1998 and Amendment 2 published in 2000, and the second edition of **ISO 105-B06 Textiles—Tests for colour fastness—Part B06: Colour fastness and ageing to artificial light at high temperatures: Xenon arc fading lamp test** published in 1998 and Amendment 1 published in 2002 with some modifications of the technical contents.

The portions given sidelines or dotted underlines are the matters in which the contents of the original International Standards have been modified. A list of modifications with the explanations is given in Annex (informative).

1 Scope This Standard specifies the test methods for colour fastness of dyed textiles to xenon arc lamp light.

NOTE : The International Standards corresponding to this Standard are as follows.

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standards and **JIS** are IDT (identical), MOD (modified), and NEQ (not equivalent) according to **ISO/IEC Guide 21**.

ISO 105-B02 : 1994 *Textiles—Tests for colour fastness—Part B02: Colour fastness to artificial light: Xenon arc fading lamp test*, Amendment 1: 1998, Amendment 2: 2000 (MOD)

ISO 105-B06 : 1998 *Textiles—Tests for colour fastness—Part B06: Colour fastness and ageing to artificial light at high temperatures: Xenon arc fading lamp test*, Amendment 1: 2002 (MOD)

2 Normative references The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. If the indication of the year of publication is given to these referred standards, only the edition of the indicated year constitutes the provision of this Standard but the revision and amendment made thereafter do not apply. The normative references without the indication of the year of coming into effect apply only to the most recent editions (including amendments).

JIS L 0801 *General principles of testing methods for colour fastness*

NOTE : **ISO 105-A01:1994 Textiles—Tests for colour fastness—Part A01: General principles of testing** is equivalent to the said standard.

JIS L 0804 *Grey scale for assessing change in colour*

NOTE : **ISO 105-A02** : 1993 *Textiles—Tests for colour fastness—Part A02: Grey scale for assessing change in colour* is equivalent to the said standard.

JIS L 0809 *Instrumental determination of colour fastness — Change in colour and staining*

JIS L 0841 *Test methods for colour fastness to daylight*

NOTE : **ISO 105-B01**:1994 *Textiles—Tests for colour fastness—Part B01: Colour fastness to light: Daylight* is equivalent to the said standard.

JIS L 0886 *Test methods for the detection and assessment of photochromism*

NOTE : **ISO 105-B05**:1993 *Textiles—Tests for colour fastness—Part B05: Detection and assessment of photochromism* is equivalent to the said standard.

ISO 5631 : 2000 *Paper and board—Determination of colour (C/2 degrees)—Diffuse reflectance method*

3 Summary A specimen is exposed to xenon arc lamp light along with blue scales in accordance with the specified method or it is exposed to the specified energy, and the colour fastness is assessed according to the change in colour of the specimen.

4 Classification of tests The test shall be classified into two types, method A (ordinary temperature method) and method B (high temperature method), and they shall be as shown in table 1. The test shall be performed by selecting the method suitable for the purpose. Other test conditions shall be in accordance with the agreement between the purchaser and the supplier.

Exposure shall be continuously performed, and for the temperature, the temperature within a chamber shall be adjusted so that the indication of a black panel thermometer becomes the specified value at the time of exposure. The irradiance shall be adjusted within 300 nm to 400 nm.

Table 1 Classification of tests and test conditions

Classification	Test conditions			
	Black-panel temperature °C	Temperature within chamber (informative) °C	Relative humidity %	Irradiance ⁽¹⁾ W/m ² (300 nm to 400 nm)
Method A	63±2	38±3	50±5	50
Method B	89±3	45±4	50±5	162

Note ⁽¹⁾ The irradiance is normally measured on the energy (irradiance) of a range of wavelength 300 nm to 400 nm. If measured on the energy of a range of wavelength 300 nm to 700 nm or a specific wavelength (420 nm, 340 nm, etc.), the irradiance shall be measured and displayed after the calibration. Furthermore, the irradiance may be selected from a range of 30 W/m² to 180 W/m². In this case, the temperature within the chamber and relative humidity shall be selected as appropriate.

5 Apparatus and materials The apparatus and materials shall be as follows.

- a) **Blue scale** As specified in JIS L 0841.
- b) **Grey scale for assessing change in colour** As specified in **JIS L 0804**.
- c) **Opaque cover** This shall be a white cardboard perfectly opaque to light. When other thin opaque material such as a paperboard laminated with aluminium foil is used, it shall be stated in record.

NOTE : Normally, a frame of the specimen holder should not be expected to serve the function of an opaque covering.

- d) **White cardboard** This shall be a white cardboard which is 0.5 mm to 1.0 mm in thickness and not less than 70 % in Y-value, and which normally contains no fluorescence.
- e) **Surrounding field and mask** As specified in JIS L 0801.
- f) **Standard light source for assessment** As specified in **10 a) 1)** of **JIS L 0801**.
- g) **Light-exposure apparatus** The light exposure apparatus shall be as follows. An example is as shown in attached figure 1.

- 1) The light source shall be the water-cooled type or the air-cooled type xenon lamp and the long arc system of 5 000 K to 6 000 K in correlated colour temperature. An example of spectral distribution is as shown in attached figure 2.
- 2) Although the water-cooled or the air-cooled type xenon lamp includes various types of which the capacity differs, any of them shall be selected to use.
- 3) The optical filter shall be of quartz, borosilicate glass, soda lime glass, etc. and for any purpose, any of them shall be used by combining them as the inner filter and the outer filter. Normally, they should be used by combining quartz and soda lime glass (or borosilicate glass). The types of the used optical filters shall be recorded.

An example of the transmittance of each optical filter and the combination of filters is as shown in attached figure 3.

- 4) The temperature controller shall adjust the chamber temperature at a fixed temperature during lighting of a light source and record the temperature of a black panel thermometer (may be abbreviated as BPT).
- 5) The black panel thermometer which consists of a metal plate and stem finished by baking spray-coat of light resistant black enamel twice and is of the reflectance of not more than 5 % (see informative attached figure 1) shall be used. An example is as shown in attached figure 4. Since the black panel thermometer deteriorates due to light and temperature with the use and due to high humidity, calibration shall be performed at an appropriate time. Normally, two black panel thermometers shall be prepared, one of them is used for measuring and the other is for calibrating the black panel thermometer for measuring ⁽²⁾. Both black panel thermometers shall be mounted on the same place as the specimen and the calibration shall be performed under the light-exposure condition.

A black standard thermometer (is occasionally abbreviated as BST) may be used instead of the black panel thermometer. The black standard thermometer shall be so structured that the thermal sensor part of which is fixed to the centre of the back side of the metal plate finished by baking spray-coat of light resistant black enamel twice, and further the heat insulating material (polyvinylidene fluoride) is stuck to it, and the temperature is normally displayed digitally. When the black standard thermometer is used, the relation with the temperature when the black panel thermometer is used shall be obtained beforehand, and it shall be used at the corresponding temperature. An example is as shown in attached figure 5.

Note (2) The black panel thermometer for measuring should be taken out and kept after it is confirmed that the temperature meets the specified value when the light source and temperature are stabilized.

- 6) The light energy measuring instrument for the measurement of irradiance or radiant exposure (also called the irradiance meter) or the light energy measuring instrument equipped with an adjustment function shall be calibrated by the energy standard light source which has been calibrated officially.
- 7) The specimen holder to be used shall be made of aluminium to which a suitable anti-corrosion treatment is applied, or stainless steel. An example is as shown in attached figure 6.

When the backing of the specimen is used, the suitable backing shall be used according the purpose.

- h) **Backing** The backing is a material which is stuck to the back side of the specimen according to the use condition of material.

6 Preparation of specimen

6.1 Specimen of fabric The dimensions of specimen shall be at least approximately 10 mm × 40 mm capable of assessing the fastness and should be preferably approximately 67 mm × 150 mm ⁽³⁾, approximately 65 mm × 55 mm or the like.

Note (3) It is used in common for the test of textile other than the fastness test, for example, a tensile test, etc.

6.2 Specimen of yarns Yarns shall be wound closely on a white cardboard equivalent to the dimensions of the specimen in **6.1** parallel to the long side direction.

6.3 Specimen of loose fibre The loose fibres shall be combed and compressed, and mount them on a white cardboard in a layer as thin as unable to see the white cardboard equivalent to the dimensions of the specimen in **6.1**.

7 Operation The operation shall be as follows.

7.1 Operation of testing machine The operation of a testing machine shall be as follows.

- a) Fix a specimen and a blue scale to a white cardboard respectively, and mount them on a specimen holder.

Tightly hold the portions of the specimen holder other than the window-opening with the holding metal from back and front in order to make definite boundary between the light-exposed area and the unexposed area covered by the opaque cover. When there is unevenness on the specimen surface of window parts, convex parts may give a strong change in colour and concave parts a weak change in colour, therefore eliminate wave or unevenness as far as possible.

- b) Mount the specimen holder to which a specimen has been attached on the specimen revolving rack leaving no clearance. If there are specimen holders without specimen attached, mount white cardboards to all of them.
- c) Operate the testing machine. Take this time as the test starting time. Adjust to the specified irradiance.
- d) Adjust the chamber-temperature using the temperature controller, and record the temperature when the indication of the black panel thermometer becomes stable. After confirming the temperature, take out the black panel thermometer and keep it.
- e) Perform the procedure after starting the operation according to **7.2**.

7.2 Exposure method The exposure methods include exposure method 1 to exposure method 4 using the blue scale and exposure method 5 of the energy method, and each of them shall be as follows.

- a) **Exposure method 1** Exposure method 1 is the most basic method for assessing the fastness of a specimen, and a specimen is exposed to light along with a set of blue scales as follows.

- 1) Arrange and fix the specimen and the blue scale on a white cardboard as shown in figure 1, and cover by using the covers AA' and BB', respectively ⁽⁴⁾.

Note ⁽⁴⁾ To facilitate operation, it is recommended that the respective covers are made so as to bend at the part of XX'.

- 2) After starting the exposure, raise the cover of the specimen AA' periodically and inspect the exposed part of the specimen by using the grey scale for assessing change in colour.
- 3) When the specimen has reached the standard fading (which means that the difference in colour between the exposed part and the unexposed part has become equal to the difference in colour of No.4 of grey scale for assessing change in colour), raise the cover of the blue scale BB', inspect the blue scale, and take the grade of blue scale of standard fading as the fastness of the specimen.
- 4) When the specimen has not reached the standard fading even if Grade 8 blue scale has reached the standard fading, assess the fastness of the specimen as "Grade 8 or superior", and finish the exposure.

NOTE : The photochromism of the specimen shall be in accordance with **JIS L 0886**.

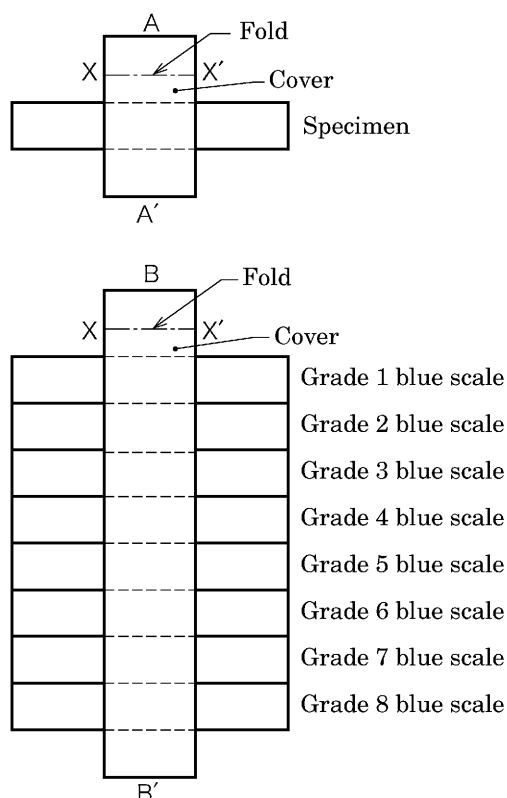


Figure 1 Exposure method 1

b) **Exposure method 2** Exposure method 2 is the method for exposing more than one specimen simultaneously and assessing the fastness of the specimen respectively, and more than one specimen is exposed to light along with a set of blue scale as follows.

- 1) Arrange and fix the specimens and the blue scale on a white cardboard as shown in figure 2, and cover approximately one-fourth of the whole length of them by using the covers AA', BB', CC' and DD', respectively ⁽⁴⁾.
- 2) After starting the exposure, raise the cover of the blue scale BB' periodically and inspect the exposed part of Grade 2 of the blue scale. When the exposed part has reached the standard fading, raise the cover of the specimen AA', and if any specimen has reached the standard fading, (for example, it is No.1 specimen and No.3 specimen) assess the fastness of No.1 specimen and No.3 specimen as Grade 2, remove these specimens and Grade 2 of the blue scale and store them.

And, when the specimen has faded equally to or more than the standard fading, assess it as "Grade 1 or inferior".

- 3) Put the covers back on, continue the exposure and repeat the operation in 2) successively from Grade 3 to Grade 8 of the blue scale. When the assessment of the fastness of all specimens has finished, finish the exposure.
- 4) If the specimen has not reached the standard fading even when Grade 8 of

the blue scale has reached the standard fading, finish the exposure, and assess the fastness of these specimens as "Grade 8 or superior".

In addition, when the comparison is difficult because the boundary between the unexposed parts covered with the covers AA' and BB' and the exposed part has become indistinct due to the frequent raising of the cover, the comparison may be done between the parts covered by the covers CC' and DD', respectively and the unexposed part.

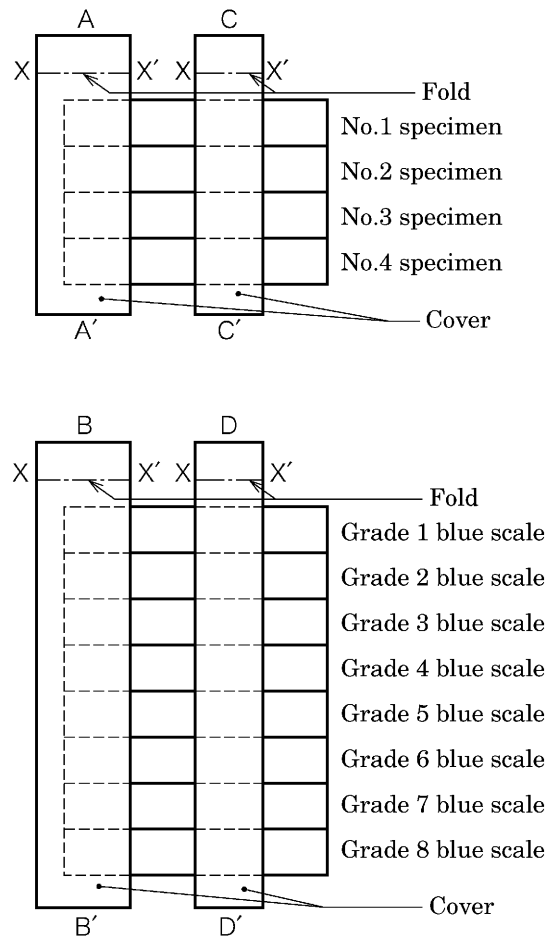


Figure 2 Exposure method 2

- c) **Exposure method 3** Exposure method 3 is the method for assessing whether the specimen has the fastness equivalent to the objective blue scale or not, and one or more than one specimen is exposed to light along with the objective blue scale and a blue scale one grade lower than the objective blue scale as follows.
- 1) Arrange and fix the specimens and the blue scale on a white cardboard as shown in figure 3, and cover approximately one-half of them by using the covers AA' and BB', respectively ⁽⁴⁾.
 - 2) After starting the exposure, raise the cover of the blue scale BB' periodically,

inspect the fading of the objective blue scale as referring to the fading of the blue scale one grade lower, and when the objective blue scale has reached the standard fading, raise the cover of the specimens AA', inspect the fading of the specimen and assess them.

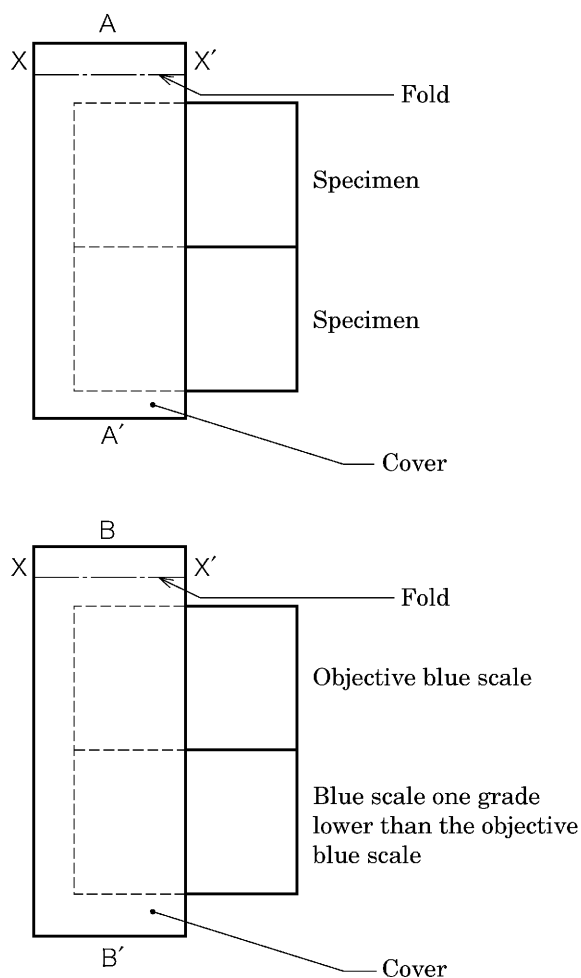


Figure 3 Exposure method 3

d) **Exposure method 4** Exposure method 4 is the method for assessing whether

the specimen has the fastness equivalent to the objective blue scale or not, and one or more than one specimen is exposed to light along with the objective blue scale ⁽⁵⁾ as follows.

Note ⁽⁵⁾ The specification sample of which the fastness is known may be used instead of the blue scale.

- 1) Arrange and fix the specimens and the blue scale on a white cardboard as shown in figure 4, and cover approximately one-third of the whole length by using the covers AA' and BB', respectively ⁽⁴⁾.
- 2) After starting the exposure, raise the cover of the blue scale BB' periodically, and when the objective blue scale has reached the standard fading, place the covers CC' and DD' on the specimens and the blue scale, respectively, and continue the exposure.
- 3) When the part of the blue scale exposed from the beginning has reached the fading equivalent to No. 3 of the grey scale for assessing change in colour, inspect the fading of the part of the specimen covered by using the cover CC' as referring to the degree of this fading and assess them.

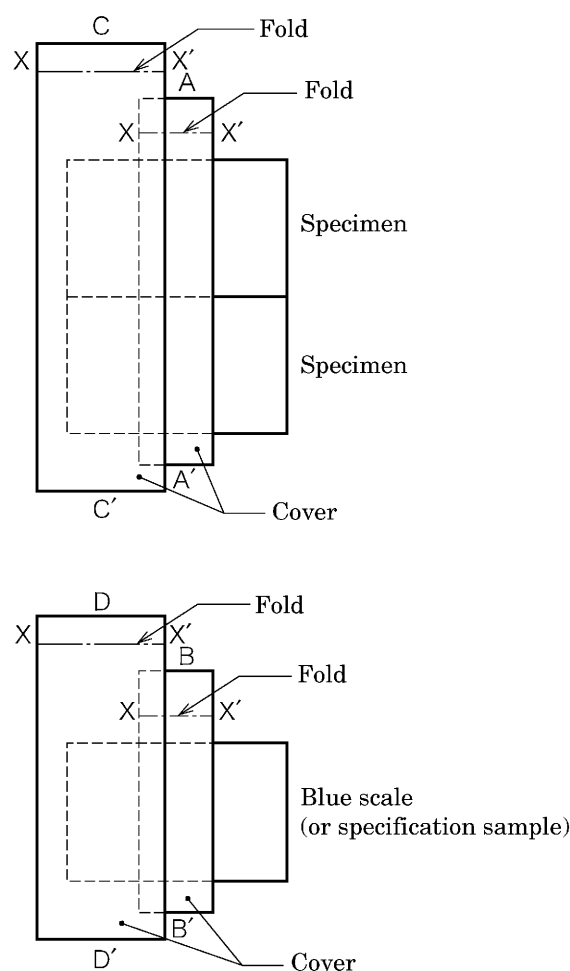


Figure 4 Exposure method 4

- e) **Exposure method 5** Exposure method 5 is the energy method, and is the method for assessing the fastness of a specimen under the light-exposed condition of the prescribed radiant exposure (unit: kJ/m^2 or MJ/m^2 , wavelength: 300 nm to 400 nm).

Start the exposure, and when it has reached the prescribed radiant exposure, finish it.

Information : For the reference of the specified radiant exposure, the radiant exposure (unit: kJ/m^2 , 300 nm to 400 nm in measuring wavelength) until Grade 1 to Grade 8 of the blue scale have reached the standard fading is shown in informative table 1.

**Informative Table 1 Radiant exposure until
blue scale has reached
standard fading**

Grade	Radiant exposure kJ/m^2 (300 nm to 400 nm)
1	76
2	302
3	1 500
4	3 800
5	7 100
6	10 600
7	28 700
8	69 000

An example of test conditions:

Method A

Irradiance: 42 W/m^2 (300 nm to 400 nm)

Filter: Inside; Quartz

Outside; Soda lime glass

BPT: $63 \text{ }^\circ\text{C} \pm 3 \text{ }^\circ\text{C}$

Relative humidity: $(50 \pm 5) \% \text{RH}$

8 Cautions for operation When operating the apparatus, the following matters shall be noted.

- a) Before starting a test, the filter shall be clean and free from breakage, crack, etc.

Since the transmittance of a filter decreases due to solarization, etc., the filter shall be replaced as required.

NOTE : In general, the filter should be replaced after the use for 2 000 h maximum. If borosilicate glass is used inside, it shall be replaced after the use for 400 h.

- b) Xenon lamp attenuates its energy in proportion to the use, so that it is not appropriate to assess the test result on the basis of the required operation time. Therefore, it is necessary to adjust the energy automatically in the specified range and keep constant.

9 Assessment The colour fastness in the xenon arc lamp light resistance test shall be assessed in accordance with **10 a)** of **JIS L 0801** in such a way that, upon completion of the exposure, the specimen and the blue scale are allowed to stand in a dark place for 2 h or more ⁽⁶⁾, they are arranged on a surrounding field and the change in colour of the specimen and the blue scale is assessed by visual comparison with the grey scale for assessing change in colour.

In the case of exposure method 5, **10 b)** of **JIS L 0801** ⁽⁷⁾ may apply.

Notes ⁽⁶⁾ If an error arises in the colour fastness of the specimen due to the photochromism specified in **JIS L 0886**, it is necessary to assess the specimen which is allowed to stand in a dark place for 24 h or more after completion of the exposure.

⁽⁷⁾ As specified in **JIS L 0809**. However, the condition of light source should be in accordance with the condition of C/2° which meets visual appreciation specified in **ISO 5631**.

10 Record For the record of the test, the following items shall be described in the test report.

- a) Reference to this Standard (**JIS L 0843**)
- b) Designation or abbreviated name of light-exposure apparatus, manufacturer's name or its abbreviation, manufacture year, month and manufacturing number
- c) Classification of tests
- d) Test conditions
 - 1) Exposure method
 - 2) Black panel temperature or black standard temperature (air temperature within the chamber may be recorded as a reference)
 - 3) Relative humidity
 - 4) Irradiance
 - 5) Type of optical filter
- e) Test result (grade of colour fastness to xenon arc lamp light)
 - 1) **Exposure method 1 and exposure method 2** The grade shall be expressed by the grade of the blue scale showing the same change in colour as that of the specimen, and by appending the classification of the tests and the exposure method in parentheses as shown in the following examples.

Example 1 : Xenon arc lamp light test (Method A, Exposure method 1)
Grade 7

Example 2 : Xenon arc lamp light test (Method B, Exposure method 2)
Grade 6

- 2) **Exposure method 3** When the specimen shows the same degree of or smaller change in colour as compared with the objective blue scale, the grade shall be recorded as the grade of the objective blue scale or its grade and superior along with the classification of the tests and the exposure method, and when the degree of change in colour is large, the grade shall be recorded as inferior to its grade as shown in the following examples.

Example 1 : Xenon arc lamp light test (Method A, Exposure method 3)
Grade 4

Example 2 : Xenon arc lamp light test (Method A, Exposure method 3)
Grade 4 or superior

Example 3 : Xenon arc lamp light test (Method A, Exposure method 3)
Inferior to Grade 4

- 3) **Exposure method 4** When the objective blue scale has reached the standard fading and when the specimen shows the same degree of or smaller change in colour as compared with the blue scale, the grade shall be recorded as the grade of the objective blue scale or its grade and superior along with the classification of the tests and the exposure method as shown in the following example 1 or example 2, and when the degree of change in colour is large, the grade shall be recorded as inferior to its grade as shown in the following example 3.

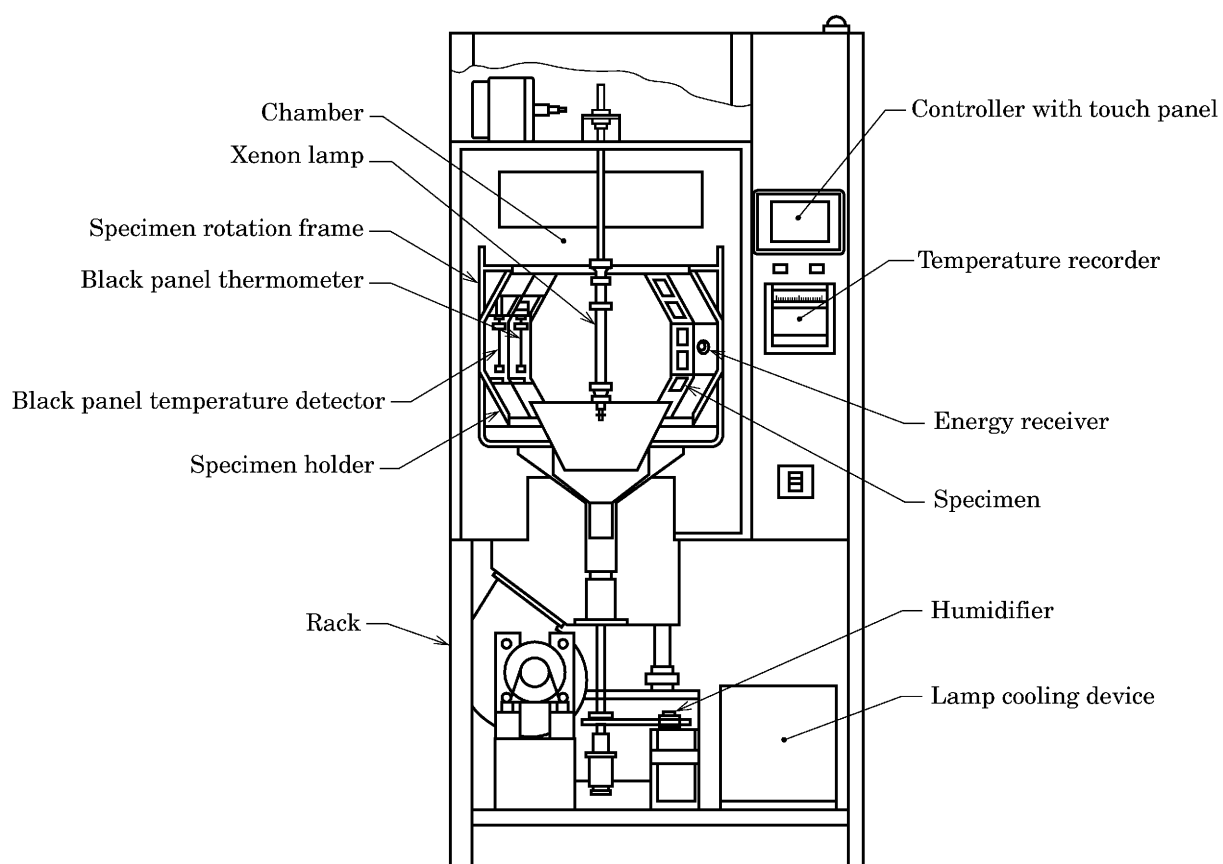
Example 1 : Xenon arc lamp light test (Method A, Exposure method 4)
Grade 4

Example 2 : Xenon arc lamp light test (Method A, Exposure method 4)
Grade 4 or superior

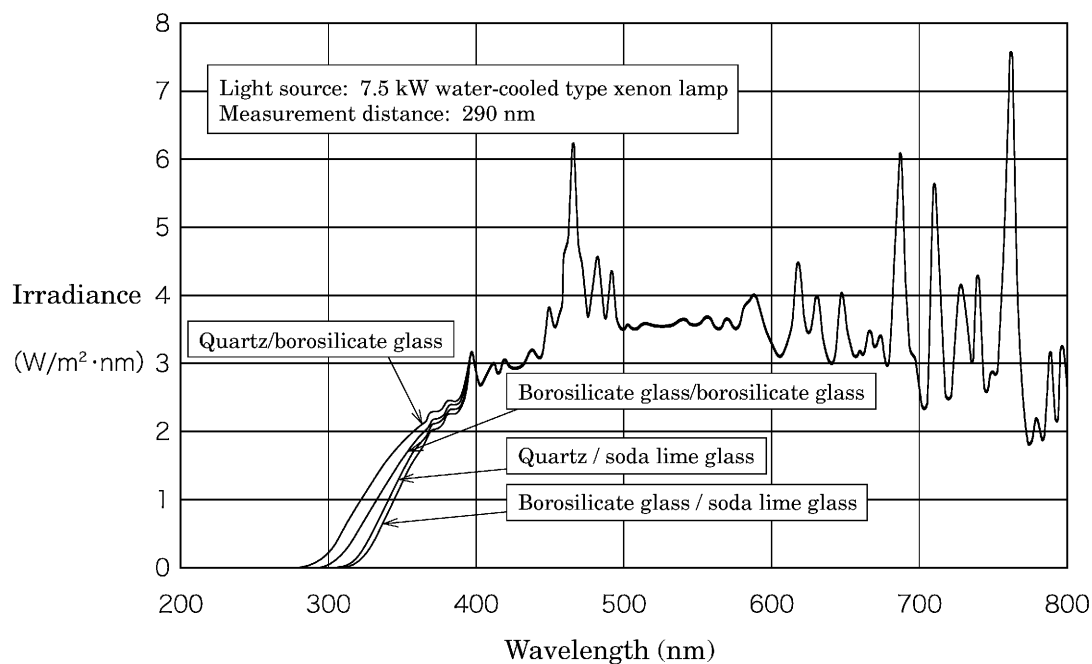
Example 3 : Xenon arc lamp light test (Method A, Exposure method 4)
Inferior to Grade 4

- 4) **Exposure method 5** The grade of the colour fastness shall be recorded along with the classification of the tests and the exposure method, and the radiant exposure as shown in the following example.

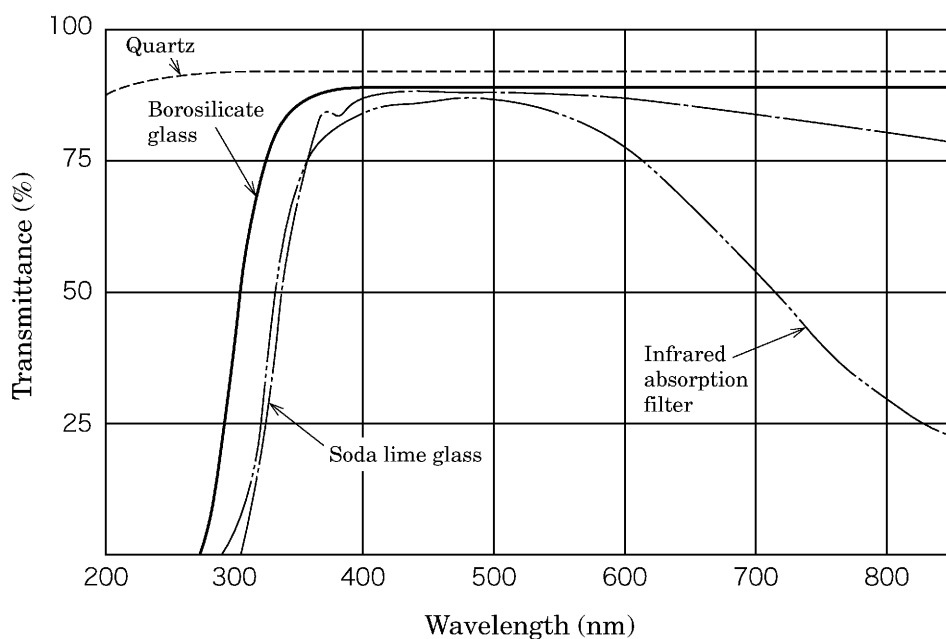
Example : Xenon arc lamp light test [Method A, Exposure method 5,
Radiant exposure: 1 500 MJ/m² (300 nm to 400 nm) Grade 3



Attached Figure 1 An example of xenon arc lamp type light-exposure apparatus



Attached Figure 2 Spectral distribution of xenon arc lamp (an example)

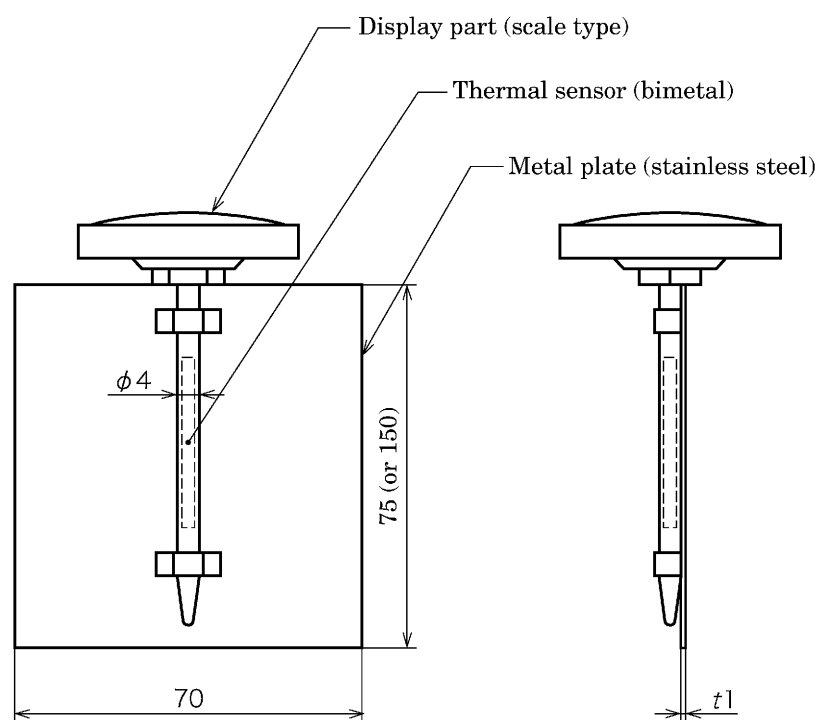


No.	Inside filter	Outside filter
1	Quartz	Borosilicate glass
2	Quartz	Soda lime glass
3	Borosilicate glass	Soda lime glass
4	Borosilicate glass	Borosilicate glass

Attached Figure 3 Transmittance of various filters and an example of combination

Example 1

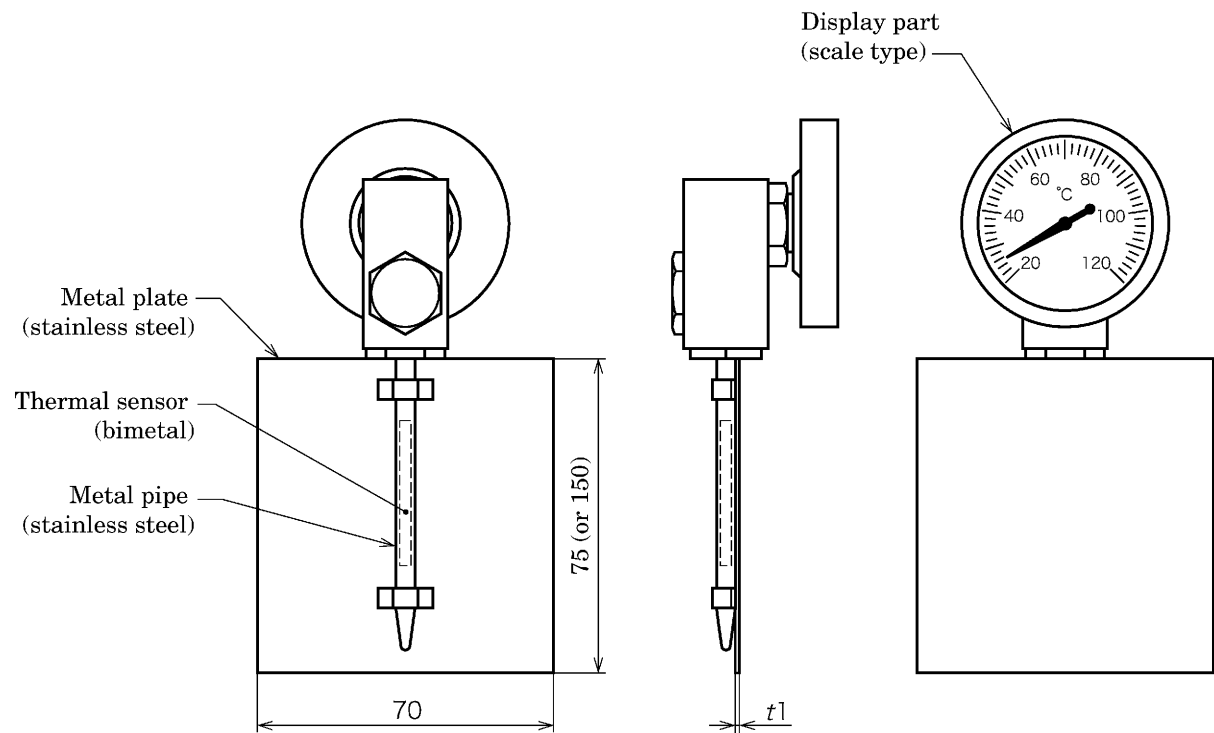
Unit: mm



Attached Figure 4 Example of black panel thermometer

Example 2

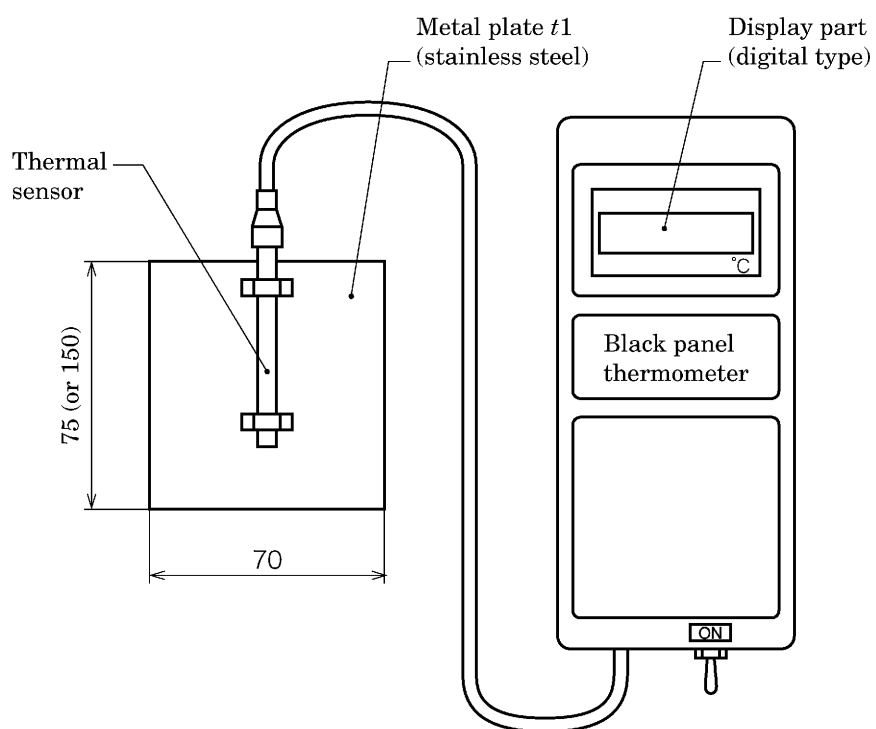
Unit: mm



Attached Figure 4 (continued)

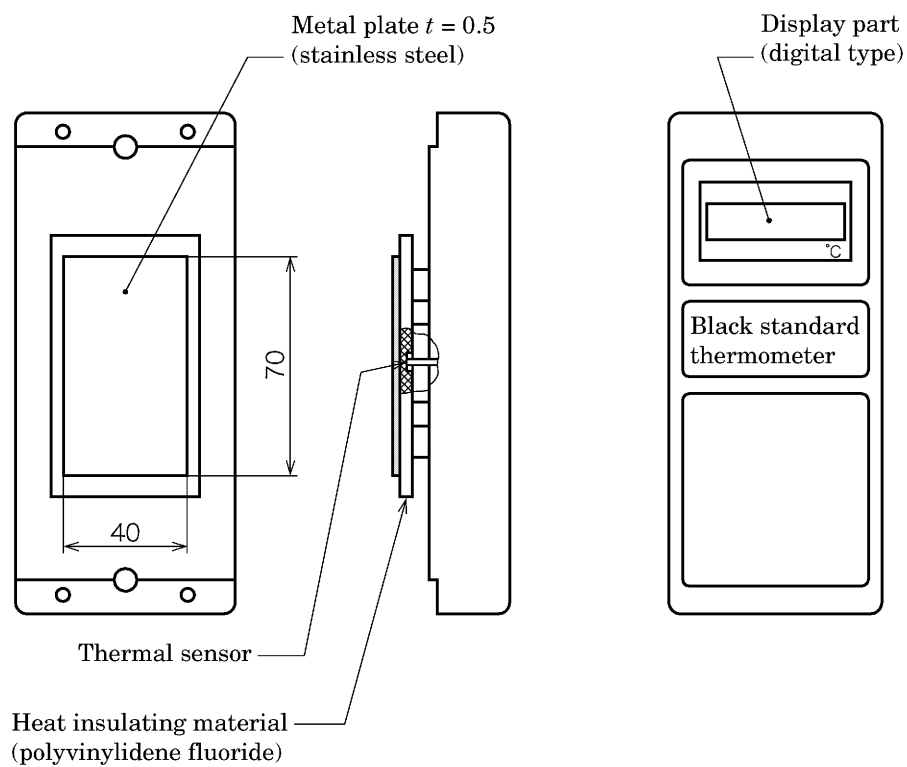
Example 3

Unit: mm



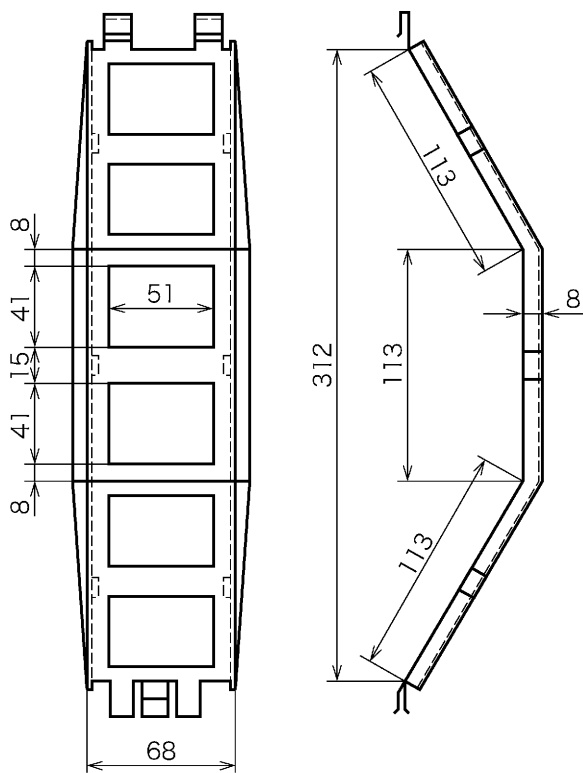
Attached Figure 4 (concluded)

Unit: mm

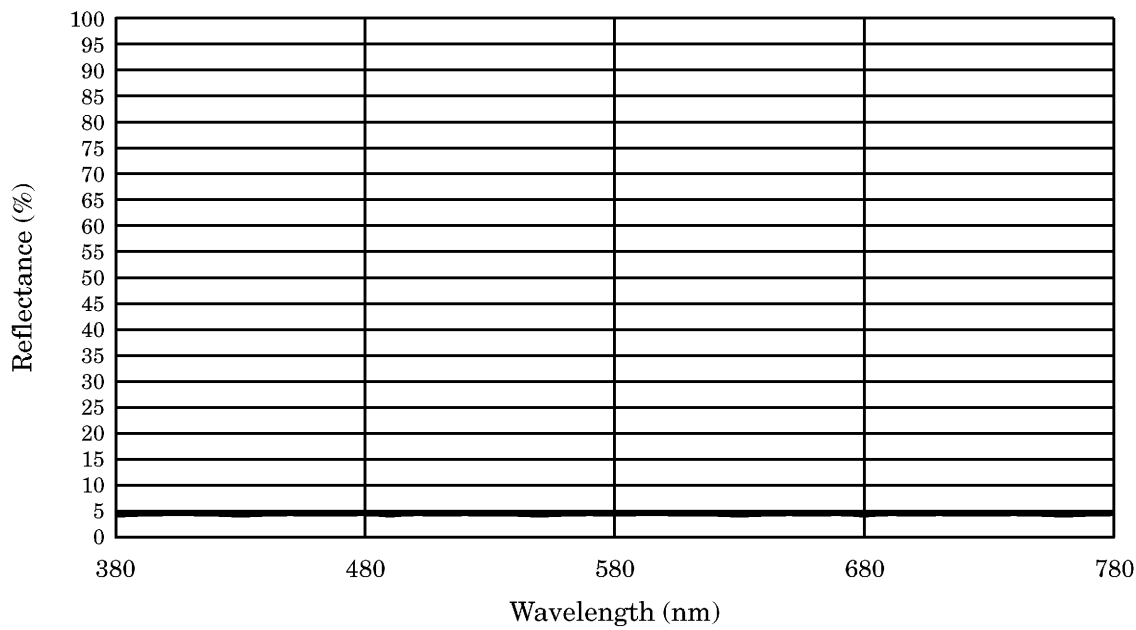


Attached Figure 5 Example of black standard thermometer

Unit: mm



Attached Figure 6 An example of specimen holder



Informative Attached Figure 1 Spectral reflectance of black panel thermometer

Annex (informative)
Comparison table between JIS and corresponding International Standards

JIS L 0843 : 2006 Test methods for colour fastness to xenon arc lamp light			ISO 105-B02 : 1994 Textiles—Tests for colour fastness—Part B02 : Colour fastness to artificial light : Xenon arc fading lamp test		ISO 105-B06 : 1998 Textiles—Tests for colour fastness—Part B06 : Colour fastness and ageing to artificial light at high temperatures : Xenon arc fading lamp test	
(I) Requirements in JIS		(II) Inter-national Standard number	(III) Requirements in Interna-tional Standard		(IV) Classification and details of technical deviation between JIS and the International Standard by clause Location of deviation: text Indication method: dotted underlines or continuous sidelines	(V) Justification for the technical deviation and future measures
Clause	Content		Clause	Content	Classification by clause	Detail of technical deviation
1 Scope	The test methods for colour fastness of tex-tiles to xenon arc lamp light are specified.	ISO 105-B02 ISO 105-B06	1		MOD/alteration	Two ISO Standards are altered into one JIS, and ISO 105-B02 is taken as method A and ISO 105-B06 method B.
2 Norma-tive references	JIS L 0801	ISO 105-B02 ISO 105-B06	2	ISO 105-A01 ISO 105-A01 ISO 105-A02 ISO 105-A02	MOD/addition MOD/addition MOD/addition IDT	
	JIS L 0804					
	JIS L 0809					
	JIS L 0841	ISO 105-B02 ISO 105-B06		ISO 105-B01 ISO 105-B01 ISO 105-B05	MOD/addition MOD/addition MOD/addition MOD/addition	Normative reference is added.
	JIS L 0886	ISO 105-B02				
	ISO 5631					
						The proposal to ISO will be presented.
						The proposal to ISO will be presented.

(I) Requirements in JIS		(II) International Standard number	(III) Requirements in International Standard		(IV) Classification and details of technical deviation between JIS and the International Standard by clause		(V) Justification for the technical deviation and future measures
Clause	Content		Clause	Content	Classification by clause	Detail of technical deviation	
3 Summary		ISO 105-B02 ISO 105-B06	3		MOD/alteration	No technical difference.	
4 Classification of tests	Method A (ordinary temperature method) Method B (high temperature method)		— —		MOD/addition MOD/addition	In JIS the clause of "Classification of tests" is provided, and ISO 105-B02 is taken as method A and ISO 105-B06 method B. Furthermore, "the irradiance may be selected from a range of 30 W/m ² to 180 W/m ² " is added.	No technical difference, but alteration in format. The proposal to ISO will be studied.
			4.1.3	7.1 Adjustment of the humidity	MOD/alteration	With regard to humidity, in ISO Standard the use of humidified cloth is specified (4.1.3). In JIS , the international relative humidity control method is adopted.	The proposal to ISO will be presented.
5 Apparatus and materials	a) Blue scale	ISO 105-B02 ISO 105-B06	4.1		MOD/alteration	In ISO Standards, it is specified that either references 1 to 8 or references L2 to L9 are selected and used. In JIS , JIS L 0841 is referred to and only the grades of Grade 1 to Grade 8 are specified. Since it is impossible to produce the blue scale now in use, the content is altered.	The proposal to ISO is being presented.

(I) Requirements in JIS		(II) International Standard number	(III) Requirements in International Standard		(IV) Classification and details of technical deviation between JIS and the International Standard by clause		(V) Justification for the technical deviation and future measures
Clause	Content		Clause	Content	Classification by clause	Detail of technical deviation	
5 Apparatus and materials	b) Grey scale for assessing change in colour	ISO 105-B02 ISO 105-B06	4.2.4 4.2.6		IDT	—	—
	c) Opaque cover	ISO 105-B02 ISO 105-B06	4.2.2 4.2.5		IDT	—	—
	d) White cardboard		—		MOD/addition	In ISO Standards, it is described in the text. In JIS, the item (thickness of white cardboard, Y-value) is added.	Technical difference is slight.
	e) Surrounding field and mask		—		MOD/addition	In ISO Standards, ISO 105-A02 is referred to. In JIS the item of e) is added and specified.	No technical difference, but alteration in format.
	f) Standard light source for assessment	ISO 105-B01	4.2.5		IDT	—	—
	g) Light-exposure apparatus	ISO 105-B02	4.2 4.2.1 4.2.3 4.2.6 Annex A Annex B	Apparatus Xenon arc lamp apparatus Temperature sensor Radiometer	MOD/alteration	In JIS, 4.2.3, 4.2.6, Annex A and Annex B in ISO Standard are summarized in g). Furthermore, the example of apparatus is added as the attached figure.	Technical difference is slight and a format is altered.

(I) Requirements in JIS		(II) International Standard number	(III) Requirements in International Standard		(IV) Classification and details of technical deviation between JIS and the International Standard by clause		(V) Justification for the technical deviation and future measures
Clause	Content		Clause	Content	Classification by clause	Detail of technical deviation	
5 Apparatus and materials	g) Light-exposure apparatus (concluded)	ISO 105-B06	4.2 4.2.1 4.2.2 4.2.3 4.2.4 4.2.7	Apparatus Exposure apparatus Optical light source and filter system Radiometer for monitoring the exposure conditions Temperature sensors Computerized spectral colour-measuring instrument	MOD/alteration	In JIS since JIS L 0841 in which colour-measuring instrument is specified is referred to, sub-clause of colour-measuring instrument in ISO Standard is deleted. Furthermore, the concrete example of combination, etc. is added as the attached figure.	No technical difference, but alteration in format.
	h) Backing		4.2.8		IDT	—	—
6 Preparation of specimen		ISO 105-B02 ISO 105-B06	5		MOD/addition	Dimensions of a specimen are added (recommendation).	Technical difference is slight. The proposal to ISO will be studied.
7 Operation	7.1 Operation of testing machine	ISO 105-B02	6.1 6.2 7	Conditions preferable for use in Europe Conditions preferable for use in America 7.1 Adjustment of the humidity	MOD/alteration	With regard to humidity, in ISO Standard, the use of humidified cloth is specified (4.1.3). In JIS , the international relative humidity control method is adopted.	The proposal to ISO will be presented.
		ISO 105-B06	6	6.1	MOD/alteration	In JIS , conditions No. 1, No.2, No. 3 and No.5 are deleted from conditions No. 1, No.2, No. 3, No.5 and No.6 in ISO Standard and it is specified by adding to condition No.6.	There is no technical difference, and in ISO Standard it is specified selectively, and a format is altered.

(I) Requirements in JIS		(II) International Standard number	(III) Requirements in International Standard		(IV) Classification and details of technical deviation between JIS and the International Standard by clause Location of deviation: text Indication method: dotted underlines or continuous sidelines		(V) Justification for the technical deviation and future measures
Clause	Content		Clause	Content	Classification by clause	Detail of technical deviation	
7 Operation	7.2 Exposure method	ISO 105-B02 ISO 105-B06	7.2 6.3		MOD/alteration	Since the method specified in ISO Standard is impractical, measurement cannot be performed. In JIS, it is altered and corrected concretely.	The proposal to ISO will be presented.
8 Cautions for operation			—	—	IDT	Although in ISO Standards precautions are described next to the description on procedures, in JIS they are described in the clause of cautions for operation provided separately.	It is intended for convenience of the user, and there is no substantial technical difference.
9 Assessment		ISO 105-B02 ISO 105-B06	8 7		MOD/alteration MOD/deletion	Although in ISO Standards items are listed, in JIS, JIS L 0801 is referred to. It is deleted since in JIS conditions No.1, No.2 and No. 3 are deleted.	No technical difference, but alteration in format. No technical difference, but alteration in format.
10 Record	a) Reference to this Standard	ISO 105-B02 ISO 105-B06	9 8	9 a) 8 a)	IDT IDT		

(I) Requirements in JIS		(II) International Standard number	(III) Requirements in International Standard		(IV) Classification and details of technical deviation between JIS and the International Standard by clause		(V) Justification for the technical deviation and future measures
Clause	Content		Clause	Content	Classification by clause	Detail of technical deviation	
10 Record	b) Designation or abbreviated name of light-exposure apparatus, manufacturer's name or its abbreviation, manufacture year, month and manufacturing number	ISO 105-B02 ISO 105-B06	9 8	— 8 b)	MOD/addition	In JIS , designation or abbreviated name of light-exposure apparatus, manufacturer's name or its abbreviation, manufacture year, month and manufacturing number are added.	The proposal to ISO will be presented.
	c) Classification of tests	ISO 105-B02 ISO 105-B06	— —	— —	MOD/addition	This is because two ISO Standards are unified into one JIS .	The proposal to ISO will be presented.
	d) Test conditions	ISO 105-B02 ISO 105-B06	9 8	— 8 c)	MOD/addition	Test conditions are added.	The proposal to ISO will be presented.
	e) Test result	ISO 105-B02 ISO 105-B06	9 8	—	MOD/addition MOD/addition	Examples of expression of the test result are added.	The proposal to ISO will be presented.

Designated degree of correspondence between **JIS** and International Standards : MOD

NOTES 1 Symbols in sub-columns of classification by clause in the above table indicate as follows :

- IDT : Identical in technical contents.
- MOD/deletion : Deletes the specification item(s) or content(s) of International Standard.
- MOD/addition : Adds the specification item(s) or content(s) which are not included in International Standard.
- MOD/alteration : Alters the specification content(s) which are included in International Standard.

2 Symbol in column of designated degree of correspondence between **JIS** and International Standards in the above table indicates as follows :

- MOD: Modifies International Standards.

Errata for JIS (English edition) are printed in *Standardization Journal*, published monthly by the Japanese Standards Association, and also provided to subscribers of JIS (English edition) in *Monthly Information*.

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