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**Test methods for colour fastness to
nitrogen oxides**

ICS 59.080.01

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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 0855 : 1998** is replaced with this Standard.

This revision has been made based on **ISO 105-G01 : 1993** *Textiles—Tests for colour fastness—Part G01 : Colour fastness to nitrogen oxides* for the purposes 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.

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In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

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Test methods for colour fastness to nitrogen oxides

Introduction This Japanese Industrial Standard has been prepared by translating the second edition of **ISO 105-G01** *Textiles—Tests for colour fastness—Part G01 : Colour fastness to nitrogen oxides* published in 1993 with some modifications in the technical contents.

The portions given sidelines or dotted underlines in this Standard are the matters in which the contents of the original International Standard 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 textile goods to nitrogen oxides.

Remarks : The International Standard corresponding to this Standard is as follows.

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

ISO 105-G01 : 1993 *Textiles—Tests for colour fastness—Part G01 : Colour fastness to nitrogen oxides* (MOD)

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 K 8019 *Sodium nitrite*

JIS K 8576 *Sodium hydroxide*

JIS K 8731 *Urea*

JIS K 8951 *Sulfuric acid*

JIS K 9009 *Sodium dihydrogenphosphate dihydrate*

JIS K 9019 *Disodium hydrogenphosphate 12-water*

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

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

JIS L 0803 *Standard adjacent fabrics for staining of colour fastness test*

Remarks : **ISO 105-F01**:2001 *Textiles—Tests for colour fastness—Part F01 : Specification for wool adjacent fabric*, **ISO 105 F/F02**:1985 *Textiles—Tests for colour fastness—F02 : Specification for standard adjacent fabric : Cotton and viscose*, **ISO 105-F03**:2001 *Textiles—Tests for colour fastness—Part F03 : Specification for polyamide adjacent fabric*, **ISO 105-F04**:2001 *Textiles—Tests for colour fastness—Part F04 : Specification for polyester adjacent fabric*, **ISO 105-F05**:2001

Textiles—Tests for colour fastness—Part F05 : Specification for acrylic adjacent fabric, ISO 105-F06:2000 Textiles—Tests for colour fastness—Part F06 : Specification for silk adjacent fabric, ISO 105-F07:2001 Textiles—Tests for colour fastness—Part F07 : Specification for secondary acetate adjacent fabric, ISO 105 F/F08:1985 Textiles—Tests for colour fastness—F08 : Specification for standard adjacent fabrics triacetate, ISO 105 F/F09:1985 Textiles—Tests for colour fastness—F09 : Specification for standard rubbing cloth : Cotton and ISO 105-F10:1989 Textiles—Tests for colour fastness—Part F10 : Specification for adjacent fabric : Multifibre are equivalent to the said standard.

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

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

3 Classification of tests The classification of tests shall be two classes such as a mild test (one-cycle test) or a severe test (three-cycle test).

4 Summary The test piece is exposed, together with the standard dyed cloth, to nitrogen oxide in a container closed tightly based on the specified method, after posttreating with buffer urea solution, the degree of change in colour in compared with the grey scale for assessing change in colour, and the colour fastness is judged.

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

- a) **Nitrogen oxide testing apparatus** The nitrogen oxide testing apparatus is as shown in figure 1. The main part is composed of a glass test container of 15 L in capacity having two plug holes at the upper part and one plug hole adjacent to the bottom. Inside the test container there are a glass cylinder of 165 mm in diameter, 225 mm in height standing on three supports made of cork or silicone-rubber, sample holder (figure 4) and stainless-steel frame (figure 3). The rotary shaft supporting the propeller made of stainless-steel of 140 mm in diameter through the upper middle plug hole passes, and is attached so that the lower part edge is approximately 20 mm from the upper part edge of the glass cylinder. Further, in the other upper part plug hole, a stainless-steel rod to hold the standard dyed cloth is attached, and this stainless-steel rod is so fixed that it positions at the intermediate between the glass cylinder and testing container. In the injection part of nitrogen oxide of the bottom part, the silicone-rubber plug through which a stainless-steel pipe screw clamped with silicone-rubber film at the head part, is inserted and through this silicone-rubber film the nitrogen oxides are injected.
- b) **Nitrogen oxide generator** The nitrogen oxide generator is as shown in figure 2. Sulfuric acid is entered into the glass double-opening flask of 1 L in capacity, the sodium nitrite saturated solution is dripped drop by drop from the dropping funnel attached with the exhaust tube into it and make nitrogen oxides generate. The generated nitrogen oxides are fed to a nitrogen oxide storage device.