

Australian Standard[®]

Methods of test for single sided and double sided pressure-sensitive adhesive tape

Method 4.2: Printing properties—Determining lightfastness of printed labels

PREFACE

This Standard was prepared by the Standards Australia Committee PK-025, Packaging Code at the request of Australian Industry.

The objective of this Standard is to specify a test method for determining the lightfastness of printed labels.

METHOD

1 SCOPE

This Standard specifies a method for determining the lightfastness of printed labels using an artificial light source.

NOTE: This is a subjective test.

2 REFERENCE DOCUMENTS

The following documents are referred to in this Standard:

AS

2400 Packaging

2400.1 Part 1: Glossary of packaging terms

BS

1006 Methods of test for colour fastness of textiles and leather

1006:BOIC Blue wool standards. Reference standards LFS1—LFS8

3 DEFINITIONS

For the purposes of this Standard, the following definitions in AS 2400.1 apply.

4 PRINCIPLE

A printed label, together with lightfastness standards, is exposed under controlled conditions to the light from an artificial source. The lightfastness of the sample is assessed by comparing its performance with that of the lightfastness standards.

5 APPARATUS

The following apparatus is required:

(a) *Lamp*

A 500 W mercury vapour, tungsten filament, internally phosphor-coated, fluorescent lamp.

NOTES:

- 1 Examples of suitable lamps are the Thorn Atlas MBTF/U KOLORLUX the Stella MBTL and the Philips ML 500. Specifications for these lamps appear in the following reference: Hindson, W.R. and Southwell G, 'The Mercury-tungsten Lamp for the Fading Assessment of Textiles'. *Textile Inst. & Ind.* 12.2.1974, p.42.
- 2 New lamps should be operated for 100 h before using them for test purposes. It is also recommended that they be discarded after 10 000 h of operation.

(b) *Lamp unit assembly (see Figure 1)*

The unit shall consist of a hollow cylinder of metal, e.g. aluminium, or other suitable material, open at both ends, with an internal diameter of approximately 400 mm and a length of 300 mm. It shall be laterally supported by legs mounted on a base. The distance between the bottom of the cylinder and the base shall be approximately 100 mm to allow free access of air to all test specimens. The lamp shall be mounted centrally in the cylinder so that the light distribution is constant around the circumference of the cylinder. An electric running-hour meter (de-energized by lamp failure) shall be mounted on the base board as part of the lamp circuit.

(c) *Two pieces of white opaque cardboard*

One of the pieces of cardboard to be approximately 1000 mm × 250 mm, and the other to be approximately 1000 mm × 125 mm.

6 TEST SPECIMEN

A printed label test specimen, approximately 250 mm × 50 mm, is required.

7 PROCEDURE

The procedure shall be as follows:

- (a) Attach the blue wool standards, Nos 1 to 8, and the test specimen to the larger white opaque cardboard piece, see BS 1006:BOIC.
- (b) Cover each of the eight blue wool standards and the test specimen with the second piece of white opaque cardboard so that one half of the test specimen and the eight blue wool standards are exposed.
- (c) Attach the test specimen and the eight blue wool standards to the inside of the lamp unit assembly and switch on the lamp.
- (d) Examine the test specimen and the blue wool standards regularly; daily to start with, then weekly.
- (e) Switch off the lamp unit assembly when a noticeable fade is detected when comparing the exposed half and the unexposed half of the test specimen.
- (f) Remove the test specimen and the eight blue wool standards from the lamp unit assembly.