STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

METHODS OF SAMPLING AND TESTING RETROREFLECTIVE MATERIALS AND DEVICES FOR ROAD TRAFFIC CONTROL PURPOSES

PART 3—RAISED PAVEMENT MARKERS (RETROREFLECTIVE AND NON-RETROREFLECTIVE)

AS 2445.3.2 COEFFICIENT OF LUMINOUS INTENSITY (CIL) OF TYPE A AND TYPE A/B MARKERS

1 SCOPE. This standard sets out the method for determining the CIL value of Type A and Type A/B raised pavement markers. In order to comply with the requirements of AS 1906, Part 3, for coefficient of luminous intensity, the test may be carried out in the field or laboratory, provided that Clauses 3 to 5 are complied with.

2 REFERENCED DOCUMENTS. The following standards are referred to in this standard:

AS 1906 Retroreflective Materials and Devices for Road Traffic Control Purposes
Part 3—Raised Pavement Markers (Retroreflective and Non-retroreflective)

AS 2445 Methods of Sampling and Testing Retroreflective Materials and Devices for Road Traffic Control Purposes
2445.3.1—Sampling and Conditioning of Samples

3 APPARATUS.

3.1 Photometers. In accordance with the definition given in AS 1906, Part 3, the coefficient of luminous intensity (CIL) may be determined—

(a) by using appropriately calibrated photometers to measure directly the illuminance at the marker and the reflected luminous intensity from the marker; or

(b) by using a photometer designed to measure CIL indirectly and which is calibrated in accordance with Clause 3.3.

3.2 Components. For both types of photometer, the components shown diagrammatically in Fig. 1 shall be as follows:

(a) Light sources (X), approximating CIE Standard Illuminant A, which shall be stable. A circular aperture that subtends 8 ± 3 minutes of arc at the marker shall be used. The illuminance shall be uniform within a total tolerance of 10 percent over the area of the marker.

(b) A photoelectric receptor (Y), which shall either—

(i) have the relative spectral response of the CIE Standard Colorimetric Observer and a linear response to increasing illumination over the whole range likely to be encountered in testing to the requirements of this standard; or

(ii) be calibrated using standard photometric procedures and correction factors applied where necessary for departures from correct spectral and linear response.

The receptor shall have a circular aperture subtending 5 ± 2 minutes of arc at the marker's position, and be capable of being moved so that the observation angle α can be varied from 0.2 degree to 1.0 degree.

NOTES:

1. The distance between receptor and the marker will be determined by the physical size of available sources and receptors and the need to arrange these so as to obtain the specified angular relationships. Short base photometry using collimating lenses to obtain equivalent geometry by optical means is not precluded.
2. With the instrument configuration given in this clause and the calibration procedures given in Clause 3.3, it can be expected that errors in CIL values obtained will not exceed ± 10 percent.

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