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TRAFFIC SIGNAL MAST ARMS

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The following interests are represented on Committee LG/6:

Australian Electrical and Electronic Manufacturers Association

Australian Road Research Board

Confederation of Australian Industry

Department of Territories (Commonwealth)

Department of Transport (Commonwealth)

Metal Trades Industry Association of Australia

National Association of Australian State Road Authorities

Railways of Australia Committee

State Traffic Authorities

The University of Melbourne, Department of Optometry

The University of New South Wales, Department of Transport Engineering

Representatives of the manufacturers of traffic signal mast arms also participated in the drafting of this Standard.

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AUSTRALIAN STANDARD

TRAFFIC SIGNAL MAST ARMS

AS 2979—1987

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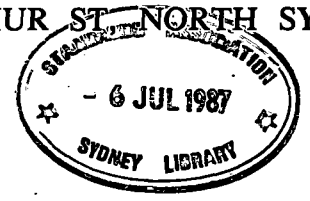

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PREFACE

This Standard was prepared by the Association's Committee on Road Traffic Signals and is one of a group of Standards which set out requirements for the equipment associated with traffic signal installations, viz:

AS 2144 Traffic Signal Lanterns.

AS 2339 Traffic Signal Posts and Attachments.

AS 2353 Pedestrian Push-button Assemblies.

AS 2578 Traffic Signal Controllers.
Part 1—Physical and Electrical Compatibility.

AS 2703 Vehicle Loop Detector Sensors.

AS 2979 Traffic Signal Mast Arms. (This Standard.)

This Standard applies to the following basic categories of traffic signal mast arms:

(a) Traffic signal mast arms which are used principally for the support of traffic signal lanterns (known as mast arms).

(b) Traffic signal mast arms which, as well as providing for the support of traffic signal lanterns, are also used to support road lighting luminaires (known as joint-use mast arms).

The Standard designates three specific types of traffic signal mast arm, viz Types A, B and C, based on design and constructional considerations. Each of the designated types is applicable to the basic categories of traffic signal mast arm described in (a) and (b) above. The design and constructional differences which apply for the three designated types of traffic signal mast arm are intended to provide for—

(i) different practices in the termination of traffic signal and public lighting cables; and

(ii) different design wind velocities to cater for conditions in various geographic regions.

Whilst slip-base and impact absorbing street lighting columns are available, no comparable designs exist for traffic signal mast arms because of the different performance requirements which apply, especially the significant torsional loads that they must withstand.

CONTENTS

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
TRAFFIC SIGNAL MAST ARMS

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This Standard sets out requirements for traffic signal mast arms which are designed to support traffic signal lanterns and associated equipment above the roadway. It applies to—

(a) traffic signal mast arms, as defined in Clause 1.4.1; and

(b) joint-use mast arms, as defined in Clause 1.4.2.

The Standard does not specify details of design except insofar as these matters are controlled by the specified requirements.

The Standard does not apply to traffic signal posts (see AS 2339), nor to the installation of mast arms and their foundations.

NOTE: See Appendix A for the information which should be supplied with an enquiry or order for mast arms to this Standard.

1.2 OBJECTIVES. The objectives of the Standard are to—

(a) ensure that mast arms will present a reasonably uniform appearance to road users;

(b) provide for rationalization in the range of sizes required and in the functional performance requirements; and

(c) provide for uniformity in the fixings and attachments used.

1.3 REFERENCED DOCUMENTS. The following Standards are referred to in this standard:

AS 1170 SAA Loading Code.
Part 2: Wind Forces.

AS 1250 SAA Steel Structures Code.

AS 1650 Galvanized Coatings.

AS 1798 Preferred Dimensions of Lighting Columns and Bracket Arms.

AS 2144 Traffic Signal Lanterns.

AS 2339 Traffic Signal Posts and Attachments.

AS 2353 Pedestrian Push-button Assemblies.

AASHTO* Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals.

1.4 DEFINITIONS. For the purpose of this Standard, the definitions given in AS 1798, AS 2144 and those below apply.

1.4.1 Traffic signal mast arm—a free standing structure comprising a vertical section and outreach arm used for the support of traffic signal lanterns and associated equipment.

NOTE: Throughout this Standard traffic signal mast arms are referred to as 'mast arms'.

1.4.2 Joint-use mast arms—a mast arm which incorporates a lighting outreach assembly for the support of a street lighting luminaire(s). It combines the functions of a traffic signal mast arm and street lighting column.

1.4.3 Nominal height—the vertical distance between the bottom of the baseplate and the lowest point of the overhead lantern mounting assembly when loaded as specified in Clause 2.2.4.1(b).

NOTE: See AS 1798 for the definition of nominal height for street lighting columns.

1.4.4 Mast-arm projection—the horizontal distance between a vertical line through the centre of the baseplate and the flange plate to which the overhead lantern mounting assembly is attached.

NOTE: See AS 1798 for the definition of 'arm projection' for street lighting columns.

1.4.5 Overhead lantern mounting assembly—a member, attached at the extremity of the outreach arm, which is designed for the mounting of traffic signal lanterns.

1.4.6 Column lantern fixings—attachments provided on the vertical section of the mast arm which are designed for the mounting of traffic signal lanterns.

1.5 TYPE DESIGNATIONS. For the purpose of this Standard, mast arms and joint-use mast arms shall be designated Type A, Type B or Type C in accordance with the following:

(a) *Type A.* Type A mast arms and Type A joint-use mast arms shall—

(i) be designed on the basis of a design wind velocity of 40 m/s;

(ii) incorporate facilities for terminating traffic signal cables within the vertical section; and

(iii) provide for mounting on a baseplate using four bolts equally spaced on a pitch circle diameter of 350 mm.

(b) *Type B.* Type B mast arms and Type B joint-use mast arms shall—

(i) be designed on the basis of a design wind velocity of 45 m/s;

(ii) incorporate facilities for terminating traffic signal cables in an externally mounted junction box; and

(iii) provide for mounting on a baseplate using four bolts equally spaced on a pitch circle diameter of 500 mm.

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