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(Incorporating Amendments up to and including No. 2)



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Manual of uniform traffic control devices

Part 14: Traffic signals



AS 1742.14:2014

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- Australian Automobile Association
- Australian Chamber of Commerce and Industry
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- Australian Motorcycle Council
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- Department of Lands and Planning, NT
- Department of Territory and Municipal Services, Australian Capital Territory
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Manual of uniform traffic control devices

Part 14: Traffic signals

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Preface

This Standard was prepared by the Standards Australia Committee MS-012, Road Signs and Traffic Signals, to supersede AS 1742.14—1996. It is one in a series of fourteen Standards which together form the *Manual of uniform traffic control devices*.

^(A2) This Standard incorporates Amendment No. 1 (September 2019) and Amendment No. 2 (December 2021). The start and end of changes introduced by the Amendment are indicated in the text by tags including the amendment numbers. ^(A2)

The AS 1742 series comprises the following Standards.

AS 1742.1, *Manual of uniform traffic control devices, Part 1: General introduction and index of signs*

AS 1742.2, *Manual of uniform traffic control devices, Part 2: Traffic control devices for general use*

AS 1742.3, *Manual of uniform traffic control devices, Part 3: Traffic control for works on roads*

AS 1742.4, *Manual of uniform traffic control devices, Part 4: Speed controls*

AS 1742.5, *Manual of uniform traffic control devices, Part 5: Street name and community facility name signs*

AS 1742.6, *Manual of uniform traffic control devices, Part 6: Tourist and services signs*

AS 1742.7, *Manual of uniform traffic control devices, Part 7: Railway crossings*

AS 1742.9, *Manual of uniform traffic control devices, Part 9: Bicycle facilities*

AS 1742.10, *Manual of uniform traffic control devices, Part 10: Pedestrian control and protection*

AS 1742.11, *Manual of uniform traffic control devices, Part 11: Parking controls*

AS 1742.12, *Manual of uniform traffic control devices, Part 12: Bus, transit, tram and truck lanes*

AS 1742.13, *Manual of uniform traffic control devices, Part 13: Local area traffic management*

AS 1742.14, *Manual of uniform traffic control devices, Part 14: Traffic signals (this Standard)*

AS 1742.15, *Manual of uniform traffic control devices, Part 15: Direction signs, information signs and route numbering*

The objectives of the revision are:

- (a) To remove many detailed guidelines relating to the operation of traffic signals and referring to Austroads.
- (b) To remove references to signals adjacent to railway level crossings, as this is contained in AS 1742.7.
- (c) To include pedestrian countdown timer.
- (d) To provide more details regarding lane use control sign for freeway management.
- (e) To provide more guidance regarding LED signs.
- (f) To harmonize standards in signs and line marking at signalized intersections.

The relationship between Australian Standards and publications produced by Austroads should be noted. The former provides specifications and procedures that ensure that products and services are safe and reliable, and consistently perform the way they are intended. Austroads provides guidance documents that deal with the design, construction maintenance and operation of the road network. Austroads documents are also used by road authorities in New Zealand.

In cases of similar subject matter, this is dealt with across both sets of documents. Where this occurs, each document aims to provide information that is consistent, complimentary and supportive of the other.

The term 'informative' has been used in this Standard to define the application of the appendix to which it applies. An 'informative' appendix is only for information and guidance.

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NOTES

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Manual of uniform traffic control devices

Part 14: Traffic signals

1 Scope and general

1.1 Scope

This Standard specifies the type and layout of signals, aspects and displays to be used at locations controlled by traffic signals including overhead lane control devices. Basic requirements for signs and pavement markings to be used in conjunction in accordance with AS 1742.2 are also given. The Standard does not cover railway level crossing signals of the type described in AS 1742.7 nor portable traffic signal which is covered in AS 4191.

1.2 Referenced documents

The following documents are referred to in this Standard:

AS 1348, *Road and traffic engineering—Glossary of terms*

AS 1742.1, *Manual of uniform traffic control devices, Part 1: General introduction and index of signs*

AS 1742.2, *Manual of uniform traffic control devices, Part 2: Traffic control devices for general use*

AS 1742.7, *Manual of uniform traffic control devices, Part 7: Railway crossings*

AS 1742.9, *Manual of uniform traffic control devices, Part 9: Bicycle facilities*

AS 1742.10, *Manual of uniform traffic control devices, Part 10: Pedestrian control and protection*

AS 1742.15, *Manual of uniform traffic control devices, Part 15: Direction signs, information signs and route numbering*

AS 2144, *Traffic signal lanterns*

AS 4191, *Portable traffic signal systems*

AS/NZS 1428.4.1, *Design for access and mobility, Part 4.1: Means to assist the orientation of people with vision impairment—Tactile ground surface indicators*

AS/NZS 1906.1, *Retroreflective materials and devices for road traffic control purposes, Part 1: Retroreflective sheeting*

Austroads, *Guide to Traffic Management, Part 9: Traffic Operations*

Austroads, *Guide to Traffic Management, Part 10: Traffic Controls and Communication Devices*

1.3 Definitions

For the purpose of this Standard the definitions in AS 1348, and those below apply.

1.3.1

aspect

a single optical system on a signal face capable of being illuminated at any given time

1.3.2**controlled area**

a portion of a roadway or intersection, the entry to which is controlled by traffic signals, delineated at entry either by a marked stop line or in its absence, the primary signal position, and at exit by the point beyond which there is no further conflict with intersecting vehicular and pedestrian traffic

1.3.3**may**

indicates the existence of an option

1.3.4**multiple display aspect**

an aspect that can display different messages using different colours, shapes, symbols or words

1.3.5**pelican crossing**

a signal-controlled mid-block pedestrian crossing at which vehicles must not enter the crossing during the pedestrian running period (green symbol) and the early part of the pedestrian clearance period (flashing red symbol), but are allowed to proceed, giving way to any pedestrians on the crossing during the rest of the clearance period, the latter being indicated to vehicular traffic by a flashing yellow signal

1.3.6**roadway**

that portion of the road devoted particularly to the use of vehicles, inclusive of shoulders and auxiliary lanes

1.3.7**shall**

indicates that a statement is mandatory

1.3.8**should**

indicates a recommendation

1.3.9**signal display**

a signal aspect that is illuminated such as circle, arrow or pedestrian displays

1.3.10**traffic signal**

a signal that controls vehicle and pedestrian traffic at an intersection or on a road by means of red, yellow, green or white light displays, and includes circular and arrow signals, pedestrian signals, bicycle crossing signals, B (bus) and T (tram) signals, and twin red or yellow signals

1.3.11**overhead lane control devices**

a signal or sign over individual traffic lanes along the length of the road

2 Description of signal displays

2.1 General

Signal displays shall conform to the descriptions given in this Section and shall be used for the purposes indicated. Displays shall be consistent with respect to shape, colour and purpose, regardless of the use to which they are put or the way they are controlled.

The descriptions given below to various displays indicate only their principal purposes. Meanings are given in the relevant State or Territory traffic regulations (generally based on the Australian Road Rules) which may impose additional requirements on drivers, e.g. a driver proceeding in accordance

with a green circle as described in [Clause 2.2.1\(a\)](#) may only do so if he or she is able to clear the intersection, and may turn only if the turn is safe and not otherwise prohibited. Likewise, movements in response to certain signals are often permitted only from certain traffic lanes.

2.2 Steady displays for vehicles

2.2.1 Circle displays

The principal purposes of circle displays for vehicle control shall be as follows:

- (a) *Green circle*—In the absence of other displays, allows drivers to enter the controlled area, proceed straight through and turn right or turn left, filtering through opposing vehicle or pedestrian streams if necessary.
- (b) *Yellow circle*—Indicates that drivers are not to enter the controlled area if they can safely stop at the relevant stop line except when an arrow display or other control device provides otherwise.
- (c) *Red circle*—Indicates that drivers are not to enter the controlled area for the duration of the display, except when an arrow display or other control device provides otherwise.

2.2.2 Arrow displays at intersections

Arrow displays are used to control the turning traffic movements at an intersection. The displays shall take the following forms and shall be used as follows:

- (a) *Form and use*—Arrow displays shall take one of the following forms and shall be used as follows:
 - (i) *Horizontal arrow, left or right*—Used at intersections to control left or right turns which are approximately at right angles or greater than right angles. (Arrows pointing below the horizontal may be used if needed to distinguish separate turning movements in the same general direction).
 - (ii) *Upwards arrow at 45 degrees, left or right*—Used at intersections to control left or right turns which are substantially less than a right angle.
 - (iii) *Vertically upwards arrow*—Used at intersections to control exclusively straight-ahead movements.
 - (iv) *U-turn arrow*—Used to control U-turns at intersections.
- (b) *Purposes*—The principal purposes of arrow displays for vehicle control shall be as follows:
 - (i) *Green arrow at intersection signals*—Allows drivers to proceed in the direction indicated by the arrow without coming into conflict with any other permitted vehicular or pedestrian movement.
 - (ii) *Yellow arrow*—Indicates that drivers intending to proceed in the direction indicated by the arrow are not to enter the controlled area if they can safely stop at the relevant stop line.
 - (iii) *Red arrow*—Indicates that drivers intending to proceed in the direction of the arrow are not to enter the controlled area for the duration of the display.

2.2.3 Overhead lane control displays (not at intersections)

Displays above a marked lane are used to control the use of that lane. The displays shall take one of the following forms and shall be used as follows:

- (a) *White vertically downwards arrow (lane arrow)*—This display shall be used to indicate that the lane is available to drivers facing the signal. A *speed limit sign* may be used instead. It also indicates the legal speed limit that applies to the road.
- (b) *Green vertically downwards arrow (lane arrow)*—This may be used only within tunnels provided there is no visual conflict with arrows on intersection signals.

NOTE This Standard does not cover arrows above a lane to indicate movements which may be made at or near intersections from that lane, i.e. variable use lane signs. These are specified in AS 1742.2 and AS 1742.15. Note also that these arrows point upwards.

- (c) *White downwards arrow at 45 degrees (merge arrow), left or right*—This display shall be used to indicate that drivers facing the aspect need to merge left or right.

NOTE Some jurisdictions use a flashing red cross to indicate that a lane is about to be closed.

- (d) *White upwards curved arrow at 45 degrees (exit only arrow), left or right*—This display shall be used to indicate that drivers facing the aspect need to exit at the next exit ramp.
- (e) *Red cross display above a marked traffic lane*—This display shall be used to indicate that the lane must not be used by drivers facing the aspect.
- (f) *Median Turn Lane*—This display indicates that a driver may only use this lane to turn right and that right turns are permitted from both directions.

Displays above a marked lane may also be in the form of words or symbols to indicate the usage of the lane. Examples are 'BUS LANE', and a symbol to indicate that right turns are permitted from one or both directions.

2.3 Flashing displays

2.3.1 Flashing yellow circle

The principal purposes of flashing yellow circle displays for vehicle control, shall be as follows:

- (a) When displayed at an intersection as a temporary measure when there is a traffic signal malfunction, it indicates that there is a need to exercise caution while proceeding.
- (b) When displayed on pedestrian-actuated traffic signals (mid-block) which are operating in the pelican crossing mode, it indicates that drivers may proceed but must give way to pedestrians on the associated crosswalk. (For flashing lights at pedestrian crossings, see AS 1742.10.)

2.3.2 Flashing yellow arrow

The principal purpose of the flashing yellow arrow shall be to indicate that drivers may proceed in the direction of the arrow, but there is a need to exercise caution as other vehicle or pedestrian movements, or both, will have precedence.

2.3.3 Flash cycle

Flashing signals shall flash at a rate of 55 to 65 flashes per minute and an on-time of 40% to 60%. On-time refers to the proportion of time during which the aspect is visually illuminated.

2.4 Pedestrian displays

The principal purposes of pedestrian displays shall be as follows:

- (a) *Green symbolic walking pedestrian*—allows pedestrians to proceed to cross the roadway.
- (b) *Flashing red symbolic standing pedestrian*—is displayed during the pedestrian clearance period and indicates that pedestrians on the crossing may complete their crossing, but those who have not yet started to cross are not to leave the footway or refuge. The flash cycle shall be as specified in [Clause 2.3.3](#).
- (c) *Steady red symbolic standing pedestrian*—indicates that pedestrians are not to leave the footway or refuge.
- (d) *Pedestrian countdown timer*—the flashing red symbolic standing pedestrian may be replaced with a yellow countdown timer display (within the same aspect) indicating the number of seconds left (stopping at '1') before a steady red symbolic standing pedestrian is displayed.

2.5 Bicycle displays

The principal purposes of bicycle displays shall be as follows:

- (a) *Green symbolic bicycle*—allows pedal cyclists to proceed.
- (b) *Flashing red symbolic bicycle*—is used in conjunction with pedestrian displays during the bicycle clearance period (which may be different to the pedestrian clearance period) and indicates that pedal cyclists are not to start crossing the roadway.
- (c) *Steady yellow symbolic bicycle*—is used in conjunction with vehicular signals and indicates to the pedal cyclists that they are not to enter the controlled area if they can safely stop at the relevant stop line.
- (d) *Steady red symbolic bicycle*—indicates that pedal cyclists are prohibited from entering the controlled area.

2.6 Public transport and emergency vehicle displays

2.6.1 Symbol types

The following symbols shall be used on public transport and emergency vehicle aspects:

- (a) Letter 'B'—aspects for the exclusive control of buses.
- (b) Letter 'T'—aspects for the exclusive control of trams, light rail or cane railway trains.
- (c) Letter 'E'—aspects for the exclusive control of emergency vehicles.
NOTE 'E' displays should not normally be visible to other road users.
- (d) White arrow, horizontal, angled or upward—aspects for the control of public transport or emergency vehicles.

2.6.2 Purpose of displays

The primary purposes of public transport and emergency vehicle displays shall be as follows:

- (a) *White B, T or E displays*—indicate to drivers of the corresponding vehicle type that they may proceed.
- (b) *Yellow B, T or E displays*—indicate to drivers of the corresponding vehicle type that they are not to enter the controlled area if they can safely stop at the relevant stop line.

- (c) *Red B, T or E displays*—indicate to drivers of the corresponding vehicle type that they are not to enter the controlled area.
- (d) *White arrow display*—indicates to drivers of public transport vehicles or emergency vehicles that they may proceed in the direction of the arrow. When used for emergency vehicles, it is preferable for a white 'E' to be displayed at the same time as the white arrow.

3 Arrangement of signal aspects

3.1 General principles

The following principles apply to the arrangement of aspects on any one signal face:

- (a) *Intersection and mid-block crossing signals*—The following shall be observed:
 - (i) Except as provided in Item (viii), aspects shall be arranged in vertical columns, each column comprising up to three vehicular aspects, two pedestrian aspects or two or three bicycle aspects.
 - (ii) In each column, red aspects shall be uppermost, green aspects lowest and yellow between the two.
 - (iii) The entire signal face shall comprise not more than three columns of vehicular aspects and not more than one column each of pedestrian and bicycle aspects [see also [Clause 3.2\(c\)](#) for preferred layouts].
 - (iv) Each horizontal row of vehicular aspects shall have aspects of the same colour, except white B or T or arrow aspects which shall be in the same row as green aspects.
 - (v) Except as provided in Items (vii), (viii) and (ix), all aspects in any one column shall be the same shape, letter, symbol or arrows, and if arrows; pointing in the same direction.
 - (vi) The following are not permitted for vehicular control:
 - (A) A column comprising only a yellow aspect.
 - (B) A column comprising only a red and a green aspect.
 - (vii) A column comprising a red circle, a yellow circle and a green arrow shall be permitted.
 - (viii) A column comprising a red B (or T), a yellow B (or T) and a white arrow shall be permitted.
 - (ix) A single column of four vehicular aspects shall be permitted—
 - (A) where the top two are circles; the third is either a green circle or green arrow and the bottom aspect is either a green arrow, or a white B or T symbol; or
 - (B) where the top is a red arrow; the second is a red circle, the third is a yellow circle and the bottom is a green circle.
 - (x) All aspects on any one signal face shall be the same size.
- (b) *Overhead lane control devices*—The following shall be observed:
 - (i) Overhead lane control devices shall not be located at signal-controlled intersections.