

Technical Specification 142

Warning signs and lights for school buses - Applies to buses first registered before 08 February 2019

Revision 9 - issued 08 August 2018

Supersedes revision 8 issued 14 August 2008

1. Purpose

To inform bus owners, operators and manufacturers of the requirements for the safety warning system that must be fitted to buses used for transporting school children. These requirements apply in all areas across New South Wales.

2. Application

This technical specification is approved under clause 25 of the *Road Transport (General) Regulation 2013* and applies to any bus (ie a motor vehicle built mainly to carry people that seats over 12 persons, including the driver) which:

- Transports school children to or from school on weekdays between the hours of 7.00am to 9.30am or 2.30pm to 5.00pm
- Is used solely for the purpose of transporting children to or from school.

The requirements of this technical specification do not apply to a bus:

- Operating on charter for a school excursion or being used for community service activities, and
- Where no individual fares are being directly collected or school passes including OPAL used.

Note new requirements: clause 4.6 on page five describes new requirements relating to visibility of 'WHEN LIGHTS FLASH' signs. All buses to which this TS No. 142 applies must comply with the requirements of clause 4.6 from 08 February 2019, regardless of when the bus was first registered.

For buses first registered on or after 08 February 2019 the applicable requirements are described in Technical Specification No.150 'Warning signs and lights for school buses', available from Roads and Maritime Services – see [page seven](#) for contact details.

The requirements of this technical specification do not apply to a bus that complies with the Technical Specification No.150. Buses are exempt from the front sign requirement described in 4.1 on page two if operating as a regular public passenger service.

A passenger service means carrying passengers for a fare or other consideration, according to regular routes and timetables, **but excluding a tourist service or a long-distance service.**

In this context, a **tourist service** is a pre-booked service, carrying passengers for a fare or other consideration, designed for the carriage of tourists to destinations listed on a publicly available tour itinerary, or where all tourists' journeys have a common origin or a common destination, or both. A **long-distance service** for this purpose is a public passenger service where passengers are carried for a fare or other consideration according to one or more regular routes, in which each passenger is carried for a distance of not less than 40 kilometres.

3. Introduction

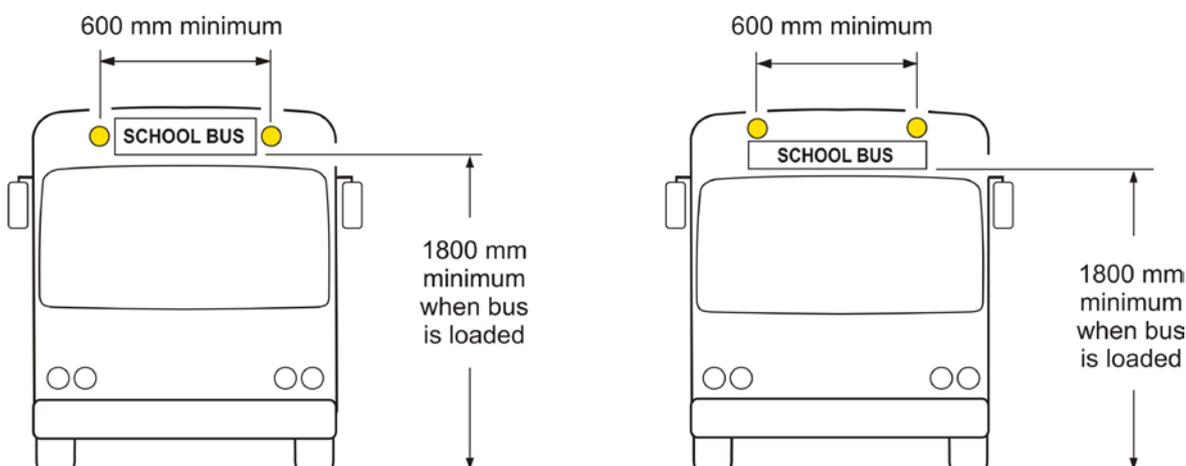
The warning system comprises of signs, flashing headlights and flashing warning lights (commonly referred to as wigwag lights) that, when activated, warn approaching motorists that school children are boarding or disembarking from the bus. It is an offence for a driver to pass a bus at a speed more than 40 km/h if it displays signs as shown in Figures 3 on page three and 4 on page four, and if the flashing wigwag lights of the warning system are activated.

4. Signs

4.1. The words 'SCHOOL SPECIAL' or 'SCHOOL BUS' must be displayed at the front of the bus as described below. Digital displays must not contain any moving signs containing text or graphics that scroll, fade or transition.

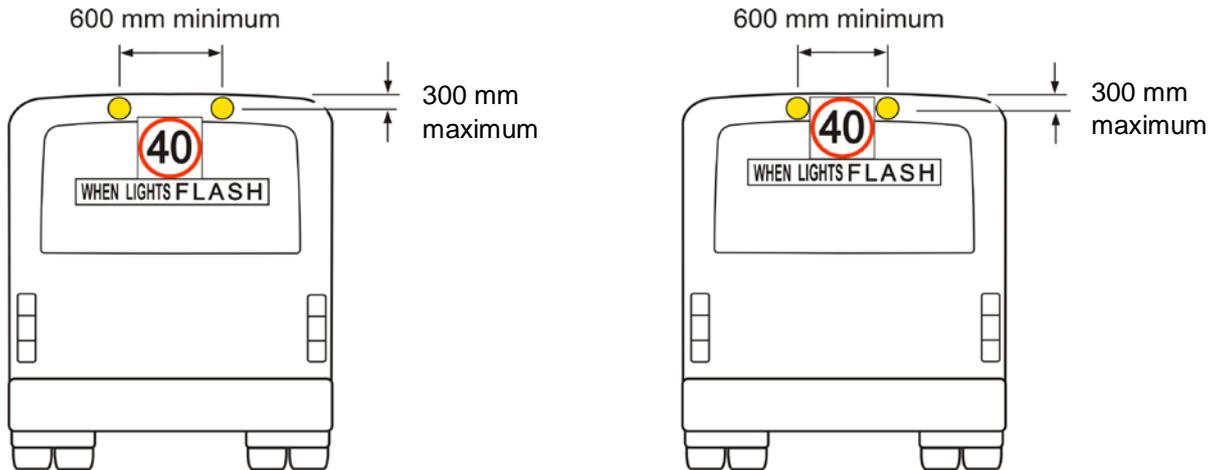
- The standard destination sign displays the words 'SCHOOL SPECIAL' or 'SCHOOL BUS' at the front of the bus, or
- A suitable high mounted 'SCHOOL BUS' sign displayed as shown in Figure 1 below. That sign must be mounted no lower than 1800mm above the ground when the bus is loaded and must not interfere with the driver's vision.

Figure 1: location of signs and wigwag lights – front



4.2. Signs indicating '40km/h' and 'WHEN LIGHTS FLASH' must be mounted high on the rear of the bus as shown in Figure 2 below.

Figure 2: location of signs and wigwag lights – rear

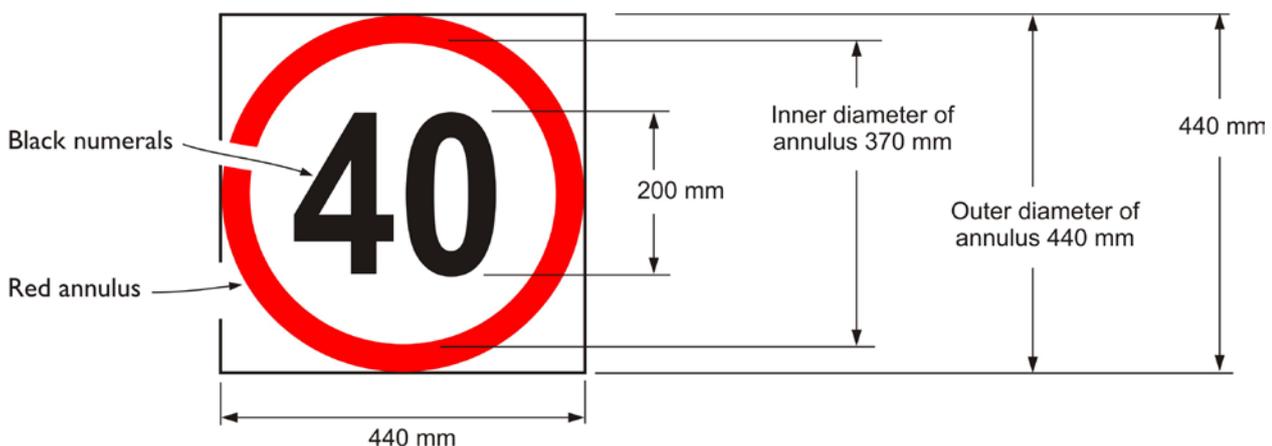


- The wigwag lights must be spaced evenly about the vertical centreline of the bus, and not less than 600mm apart.
- For single deck buses the horizontal centreline of the wigwag lights must not be more than 300mm from the top of the bus's rear bodywork. See [clause 5.6](#) for double deck buses.

4.3. Specifications for rear mounted '40km/h' sign are shown in Figure 3 below.

- Buses must display a rear '40km/h' sign that complies with Australian Standard AS 1743 'Road signs – Specifications' ie black numerals on a white reflective background. The annulus around the '40km/h' must be a red reflective symbol
- When sufficient space is available at the rear of the bus, the '40km/h' sign must meet the dimensions shown in Figure 3
- If the space available means the '40km/h' sign cannot meet the dimensions shown in Figure 3 it may be reduced proportionally to fit the available space, provided the outer diameter of the annulus is not reduced to less than 240mm
- The reflective material used must comply with the requirements of AS/NZ 1906 'Retroreflective materials and devices for road traffic control purposes - Retroreflective materials', as amended

Figure 3: details of '40km/h' sign



- Where a vehicle's design does not allow a symmetrical / central placement of the sign (eg for 2017 Toyota Coaster and all similarly designed buses which have a central brake light taking up the preferred position for the rear mounted '40km/h' sign) the sign should be placed in an off-set position, as near to the vehicle's central vertical line as practicable. An example of suitable placement is indicated in Figure 4 below. Otherwise, the signage must be consistent with section 4.3 on page three.

Figure 4 – Example of 40km/h sign for Toyota Coaster buses and all similarly designed buses



4.4. 'WHEN LIGHTS FLASH' sign (see Figure 5):

- The sign must use series D characters as described in AS 1744 Forms of letters and numerals for road signs. The words 'WHEN' and 'LIGHTS' must use narrow letter spacing as specified in AS 1744; the letters of the word 'FLASH' must be spaced evenly
- To ensure legibility a minimum separation of 60mm is required between each word
- The 'WHEN LIGHTS FLASH' sign may be separated and attached in alternative locations as shown in Figure 5 below. It may be installed as:
 - Two: 'WHEN LIGHTS' and 'FLASH'
 - Three signs: 'WHEN', 'LIGHTS' and 'FLASH'

In either case, the dimensions of the individual signs must be the same as shown in Figure 5.

Figure 5: details of 'WHEN LIGHTS FLASH' SIGN/S

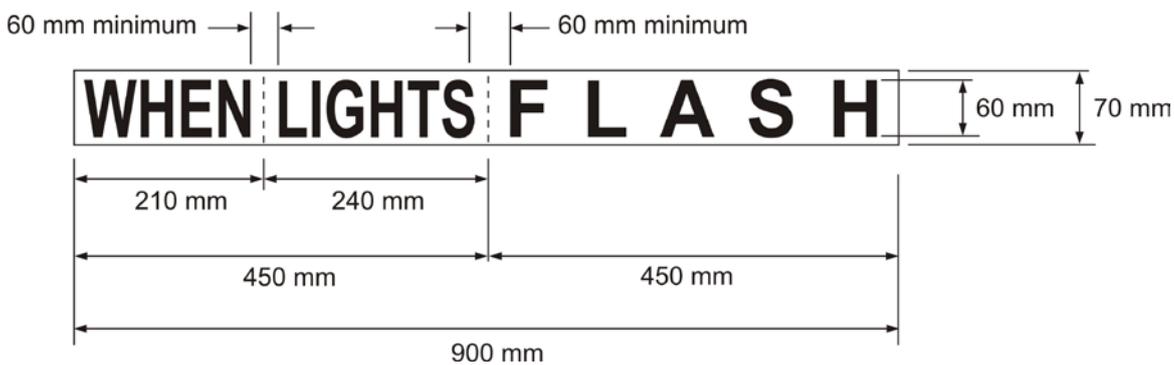
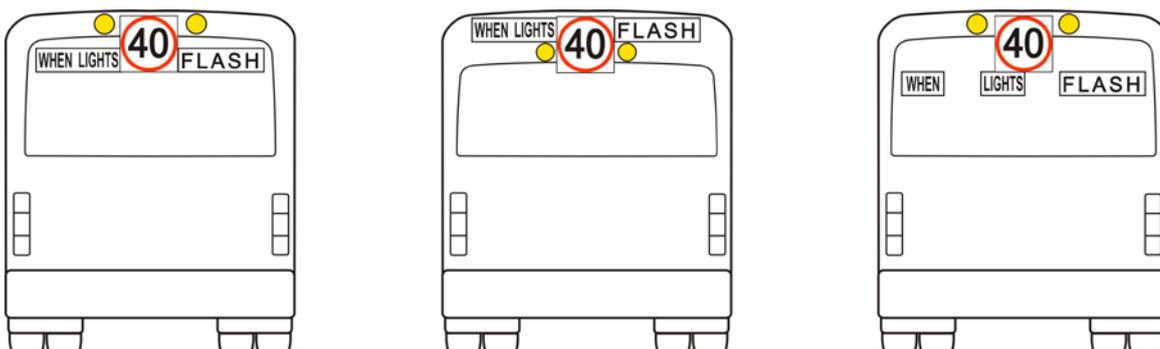


Figure 6: alternative locations for 'WHEN LIGHTS FLASH' signs



- 4.5. All signs must be placed on the bus so that their appearance (as shown in [Figures 1](#) on page two and [Figure 2](#) on page three, and [Figure 6](#) on page four), is not distorted when sighted by a person driving a vehicle approaching directly from the front or rear of the bus
- 4.6. Signs must be placed on a contrasting background on the bus. The 'WHEN LIGHTS FLASH' sign/s require an additional 25mm black surround on all sides if the bus's background colour does not provide a contrasting background

New requirement – visibility of signs

From 08 February 2019 all buses to which this technical specification applies must comply with the requirements of the following clause 4.7, regardless of when the bus was first registered.

- 4.7. To ensure the warning signs are clearly visible to drivers of following vehicles, the area around the signs must be free of advertising material. To achieve this, the rear of the bus is divided into two 'zones' as shown in [Figure 7](#).

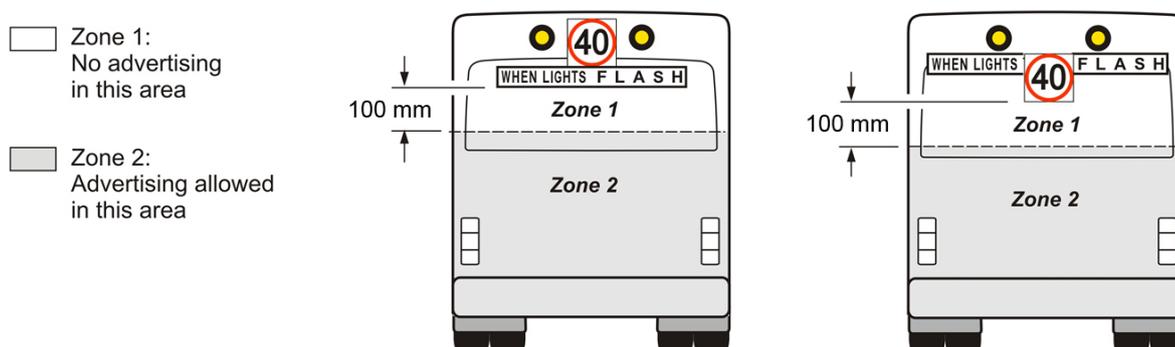
Figure 7: advertising zones

Zone 1 is the area across the whole width of the rear of the bus above a horizontal line which is 100 mm from the lowest edge of the '40 km/h' or 'WHEN LIGHTS FLASH' sign, whichever is in the lower position.

Zone 1 must be free of any advertising text and image, any material in zone 1 must be either in a monochromatic colour scheme or transparent and clear without any colour. Additional mandatory signs may be placed in zone 1 providing they do not obscure the safety sign.

Zone 2 is the area across the whole width of the rear of the bus below a horizontal line which is 100 mm from the lowest edge of the '40 km/h' or 'WHEN LIGHTS FLASH' sign, whichever is in the lower position.

Zone 2 is the area where advertising material is permitted.



5. Wigwag light requirements and operation

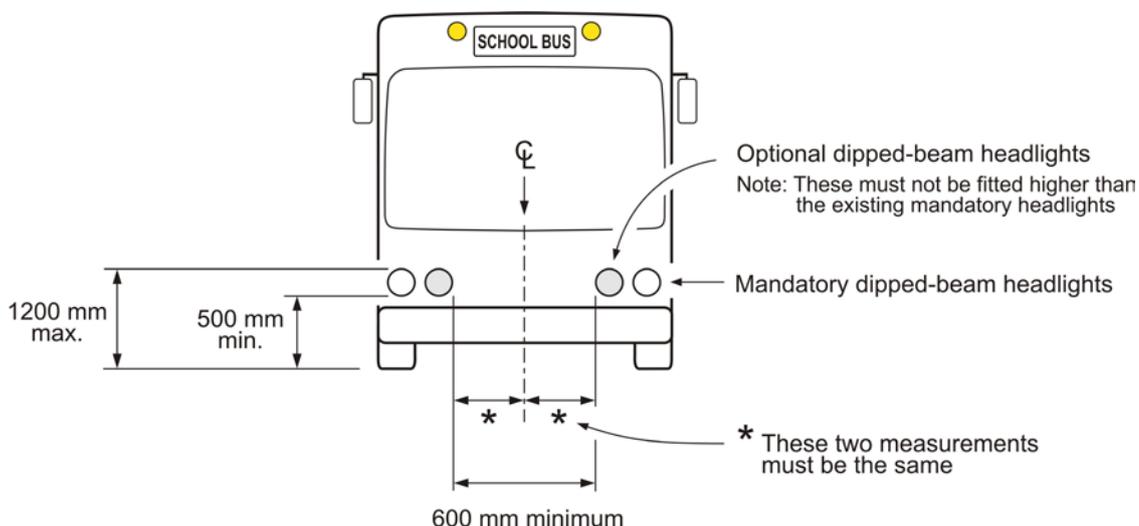
- 5.1. Wigwag lights must be installed on the front of the bus as shown on [Figure 1](#) on page two
- 5.2. Wigwag lights must be installed on the rear of a single deck bus as shown in [Figure 2](#) on page three
- 5.3. The front wigwag lights must be mounted symmetrically about the vertical centreline of the bus
- 5.4. The front wigwag lights should be mounted along the horizontal axis of the sign. However, if this is not practical, they can be located immediately above or below the sign, provided that both lights are mounted at the same level and not closer than 600 mm as shown in [Figure 1](#) on page two
- 5.5. For a single deck bus the rear wigwag lights must be mounted symmetrically about the vertical centreline of the bus and no lower than 300mm below the top of the bus as shown in [Figure 2](#) on page three

- 5.6. For a double deck bus the rear wigwag lights must be mounted symmetrically about the vertical centreline of the bus in zone 1, see Figure 7 on page five. Their location should be as high up on the bus as reasonably practicable given the design of the bus, so as to afford the best possible visibility to approaching drivers
- 5.7. The lens of each wigwag light must be no smaller than 7800mm², which equates to a minimum nominal diameter of 100mm. Alternatively, a 100mm square lens may be used
- 5.8. The wigwag lights must emit an amber coloured light complying with Australian Design Rule (ADR) 6 'Direction Indicators'
- 5.9. The intensity of the light emitted by the wigwag lights must comply with ADR 6 'Direction Indicators'
- 5.10. When the wigwag lights are required to operate, they must activate automatically and within one second of any passenger door opening. The wigwag lights must then continue to operate while any passenger door is open and must continue to operate for 20 to 30 seconds after the passenger door/s are closed
- 5.11. Each pair of wigwag lights must flash alternately with a frequency of 60 to 120 cycles per minute
- 5.12. Strobe lights, which emit short bursts of light two to three times per flash, may be used as wigwag lights provided they meet all of the requirements outlined in 5.1 to 5.10 above.

6. Headlight requirements and operation

- 6.1. The bus's mandatory dipped-beam (ie low-beam) headlights, or an optional pair of dipped-beam headlights, must flash alternately, ie between the right and left headlights, whenever the wigwag lights are activated. They must:
 - Flash only while a passenger door is open and the bus is stationary
 - Cease flashing immediately when the passenger door/s is closed.
- 6.2. In addition to the requirements of 6.1 above, any optional pair of dipped-beam headlights fitted to the bus and used as flashing lights must:
 - Be the same wattage as the bus's mandatory dipped-beam headlights
 - Be fitted to the front of the bus as shown in Figure 8 below
 - Not dazzle other road users either directly (oncoming vehicles) or indirectly through rear view mirror/s etc
 - Not be strobe lighting.
- 6.3. Main-beam (ie high-beam) headlights must not be used as flashing headlights.

Figure 8: location of optional dipped-beam headlights



7. General requirements

- 7.1. An isolating switch must be installed that controls the operation of the flashing lights (headlights and wigwag lights)
- 7.2. The location of the signs or wigwag lights must not interfere with the operation of any passenger emergency exit. This may be achieved by cutting or scoring the sign such that it will tear if any force is applied to it. If the sign is cut the parts must be butted together without any gap between the pieces.

Further information

Roads and Maritime Technical Enquiries

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New South Wales Legislation

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