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## SECTION 709 - GUIDE POSTS

### 709.01 GENERAL

This specification sets out the requirements for the supply and installation of guide posts.

### 709.02 DEFINITIONS

#### **Delineator**

Small retro reflective panel or sheeting attached to guide posts to provide a consistent pattern of delineation of the edges of road carriageways to aid road users during night time driving.

#### **Flexible Guide Post**

A guide post which deflects when impacted and then returns to a vertical position, without maintenance intervention.

#### **Guide Post**

Posts used to mark the edge of the road carriageway and give road users a good impression of the approaching alignment and geometry of the road.

#### **Rigid Guide Post**

A guide post which fractures or remains intact and straight, but not vertical when impacted.

#### **Semi-Flexible Guide Post**

A guide post which fails by bending when impacted and can be reinstated to vertical position with maintenance intervention.

### 709.03 PRODUCT REQUIREMENTS

All guide posts including delineators installed in a section of road shall be uniform material and design.

#### (a) General Requirements

Guide posts shall be between 90 mm and 100 mm across the face visible by traffic. The tops of guideposts shall be flat, the bottom ends made to suit the method of installation as recommended by the manufacturer.

Guide posts shall be straight, smooth, structurally sound and of a shape that allows delineators to be permanently and securely attached. The above ground section of each guide post shall be free of sharp edges and burrs and discoloration or other defects that may affect its appearance and/or serviceability.

The supplier shall state the type of material used in manufacture of the guide posts as well as recommended methods of installation, anchoring depth, cleaning, removal, and disposal. Test certification shall be submitted to the Superintendent for consideration, addressing post strength, flexibility, impact performance, durability, heat resistance, fire retardant ability, corrosion resistance and cold resistance. The supplier shall provide a performance guarantee statement clearly indicating the nature of the guarantee and the service life expectancy. Where a product is a VicRoads approved guide post product, or where directed by the Superintendent, the above shall not be required.

All types of guideposts shall respond in a safe manner when struck, and not present a further danger in their damaged condition.

**(b) Delineators**

The Contractor shall fix retro reflective type delineators to guide posts on both sides of the carriageway to expose to approaching traffic a red delineator on the left and a white delineator on the right.

Delineators shall be either:

- (i) circular 80 mm diameter Type A corner cube retro reflectors conforming with Type 'A' delineator in AS 1906.2; or
- (ii) Class 1A retro reflective sheeting having a total minimum reflective output equivalent to 100 cm<sup>2</sup>, as defined in AS/NZS 1906.1. The nominal dimension of retro reflective material shall be 50 mm x 200 mm. Delineators made from retro reflective sheeting shall be installed such that the sheeting manufacturer's preferred orientation for optimum performance is followed.

Delineators shall be placed centrally between the edges of posts, with the top of the delineator 50 mm below the top edge. Delineators shall be attached to posts following completion of final protective coatings by a vandal-proof and weatherproof means so they can be replaced if necessary without damaging the post.

**(c) Markings**

To enable traceability of the manufacturer, each post shall be legibly and indelibly marked with the manufacturer's name, date of manufacture and warranty period with lettering no greater than 10 mm high. The markings shall be placed at the bottom of the guide post just above recommended ground level installation depth. Guide posts shall be clearly marked to show the recommended ground level installation depth. Markings shall be installed on one side of the guide post only, and remain visible for the full life expectancy of the guide post.

**709.04 PERFORMANCE REQUIREMENTS**

The finished surface of guide posts shall be uniform and free from discontinuities, areas of discoloration, blisters, runs and other surface defects which affect appearance and serviceability. Guide post surfaces shall be durable gloss or semi-gloss opaque white capable of being repeatedly cleaned. All materials used shall retain 85% of the original colour, appearance and physical properties and be resistant to ultraviolet radiation for at least ten (10) years when exposed to all weather conditions experienced in Victoria.

Guide posts shall be designed to resist bending, twisting and displacement due to wind. They must be effective in resistance to vertical displacement of  $\pm 5$  mm for the life of the guidepost, with the exception of any displacement associated with impact or physical force. Flexible guide posts shall return to within  $\pm 5$  mm of the original vertical position following impact or physical force application for the life of the guide post.

**709.05 INSTALLATION**

Installation of guide posts includes setting out, excavation, supply, placement, backfilling, erection, driving, removal and disposal of guide posts.

Guide posts shall be installed in accordance with the requirements of Chapter 23 Traffic Engineering Manual Volume 2, as shown on the drawings, or as specified by the Superintendent. Guide posts shall be placed at a uniform distance from the road pavement edge with the widest face presenting to oncoming traffic. Posts shall be set into the ground so that the posts are vertical and the tops present a uniform profile.

Guide posts shall be installed such that the exposed length above ground is nominally 1000 mm and minimum anchoring depths recommended by the manufacturer to achieve the specified performance requirements under service conditions. Allowance shall be made in the height of guide posts above the ground for the effects of superelevation and other road geometry in order to keep guide posts within the range of the beam of vehicle headlights.

Guideposts shall be installed as per the manufacturer's recommendation.

Where guide posts are to be set in the ground they shall be erected in excavated holes which are subsequently backfilled and compacted to a density that is not less than that of the adjacent undisturbed ground.

Guide posts shall be installed such that they effectively resist removal by persons other than personnel using recommended removal tools.

Where guide posts are to be installed directly onto concrete, asphalt or any other hard wearing surface, the Contractor shall submit to the Superintendent the details of the proposed installation method.

(a) Wire Rope Safety Barrier Installations

Where new installations of Wire Rope Safety Barrier (WRSB) are proposed on the edge of shoulder, and will conflict with guide post installation locations, WRSB posts shall be converted into guide posts in accordance with the above product requirements. Posts shall be spaced in accordance with the Drawings or the requirements of Chapter 23 Traffic Engineering Manual Volume 2. The Contractor shall submit to the Superintendent the details of the proposed installation.

(b) Underground Services

Underground service locations shall be determined prior to installation of posts.

(c) Tolerances

Maximum installation tolerances are as follows:

- (i) within 3 degrees of true vertical position
- (ii) within  $\pm 5$  mm across the face visible by traffic
- (iii) within +50 mm of the uniform profile height (nominally 1000 mm)
- (iv) within 200 mm longitudinally of the design spacing requirement and 100 mm transversely of the plan position with reference to the design line for the road, or as per the requirements of Chapter 23 Traffic Engineering Manual Volume 2.

(d) Removal and Disposal of Existing Guideposts

Existing guide posts where required, are to be removed as directed by the Superintendent.

All holes left after removal shall be backfilled and compacted to a density that is not less than that of the adjacent undisturbed ground, or the same characteristics of the shoulder material from where they were removed. All existing guide posts removed by the Contractor shall be disposed of off site or as directed by the Superintendent. Existing guideposts manufactured from recyclable materials shall be recycled.