

AS5100 Part 1 – Scope and General Principles

BTN 021

Version 1.3 29 September 2022

1 Scope and Application

BTN 021 - AS5100 Part 1 – Scope and General Principles states Department of Transport's (DoT) general requirements for the design of bridges in addition to those stated in AS5100.1.

Bridge Technical Notes are a Code of Practice. Compliance with Bridge Technical Notes is mandatory.

This document is to be read in conjunction with the following documents:

- The Victorian Occupational Health and Safety Act 2004

Other than as stated in this document and relevant Department of Transport standard specifications, the provisions of AS5100:2017 must apply. Where this document differs from AS5100:2017, its requirements override those of AS5100:2017.

2 Additional Requirements

2.1 Safety in Design (Clause 9)

Designs must be subject to a Safety in Design assessment in accordance with s28 of the Victorian Occupational Health and Safety Act (2004) and the associated Regulations.

2.2 Bridge Drainage System

The bridge drainage system must have a minimum 50 year design life.

The system must comply with the following requirement to:

- Fire resistance in accordance with IMO A.753(18) Level 3.
- Ultraviolet resistance in accordance with ASTM D2565 for 2,500 hours of exposure. There must be no delamination, chalking, or embrittlement.
- Chemical – resistance to changes to strength and mechanical properties in accordance with ASTM D543, resistance to chemical including oils and all type of acids.

- Corrosion resistance to achieve 50-year design life durability under specific site's exposure classification.

All required testing must be conducted at a National Association of Testing Authorities (NATA) accredited laboratory. In the absence of a NATA-approved laboratory, testing must be conducted by a laboratory approved by the DoT for this purpose.

The internal dimension of the drainage system must be not less than 100mm. The drainage system under the deflection of self-weight and full liquid must have a minimum 1:100 slope. The drainage system must also be provided with inspection points at regular and accessible locations to facilitate cleaning and removal of any blockages. The design shall locate the inspection points where they create the minimum disruption to the operation of the transport network during maintenance and inspection activities.

Pipes and associated componentry for the bridge drainage systems are to be designed and constructed using readily available (off the shelf) parts that do not require a special order to facilitate repair and replacement.

Contact Details

For further information please contact:

Principal Engineer – Structures (Roads)
Level 3, 60 Denmark Street
Kew Victoria 3101

Document Control

This document is subject to periodic review and may be superseded. The revision date is listed in this BTN.

Note that for projects tendered prior to the publication of this document, there are no retrospective implications of this document unless agreed otherwise with DoT.

| Version | Description | Revision Date | Approved by |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------|
| 1.0 | Original Publication | January 2018 | Principal Bridge Engineer |
| 1.1 | Revision of Section 2 <ul style="list-style-type: none">• Bridge drainage requirements | 6 June 2022 | Chief Engineer – Roads |
| 1.2 | Minor amendment <ul style="list-style-type: none">• Section 2 – The numbering of the subtitles were amended to reflect the section number | 21 Sep 2022 | Chief Engineer – Roads |
| 1.3 | Minor amendment <ul style="list-style-type: none">• The revision number of the document was amended along with the date | 29 Sep 2022 | Chief Engineer – Roads |