



Bonneagar Iompair Éireann
Transport Infrastructure Ireland

TII Publications



Notes for Guidance on the Specification for Road Works Series NG 2300 – Bridge Expansion Joints and Sealing of Gaps

CC-GSW-02300
February 2023

About TII

Transport Infrastructure Ireland (TII) is responsible for managing and improving the country's national road and light rail networks.

About TII Publications

TII maintains an online suite of technical publications, which is managed through the TII Publications website. The contents of TII Publications is clearly split into 'Standards' and 'Technical' documentation. All documentation for implementation on TII schemes is collectively referred to as TII Publications (Standards), and all other documentation within the system is collectively referred to as TII Publications (Technical).

Document Attributes

Each document within TII Publications has a range of attributes associated with it, which allows for efficient access and retrieval of the document from the website. These attributes are also contained on the inside cover of each current document, for reference.

TII Publication Title	<i>Notes for Guidance on the Specification for Road Works Series NG 2300 – Bridge Expansion Joints and Sealing of Gaps</i>
TII Publication Number	<i>CC-GSW-02300</i>

Activity	<i>Construction & Commissioning (CC)</i>	Document Set	<i>Standards</i>
Stream	<i>Specification for Works (GSW)</i>	Publication Date	<i>February 2023</i>
Document Number	<i>02300</i>	Historical Reference	<i>Series NG 2300</i>

TII Publications Website

This document is part of the TII publications system all of which is available free of charge at <http://www.tiipublications.ie>. For more information on the TII Publications system or to access further TII Publications documentation, please refer to the TII Publications website.

TII Authorisation and Contact Details

This document has been authorised by the Director of Professional Services, Transport Infrastructure Ireland. For any further guidance on the TII Publications system, please contact the following:

Contact: Standards and Research Section, Transport Infrastructure Ireland
 Postal Address: Parkgate Business Centre, Parkgate Street, Dublin 8, D08 DK10
 Telephone: +353 1 646 3600
 Email: infoPUBS@tii.ie

TII Publications



Activity:	Construction & Commissioning (CC)
Stream:	Specification for Works (GSW)
TII Publication Title:	Notes for Guidance on the Specification for Road Works Series NG 2300 – Bridge Expansion Joints and Sealing of Gaps
TII Publication Number:	CC-GSW-02300
Publication Date:	February 2023
Set:	Standards

Contents

1. General.....	1
2. Installation of Bridge Deck Expansion Joints	2
3. In-Situ Nosings	3
4. NG Sample Appendices.....	4
5. References.....	5

**Updates to TII Publications resulting in changes to
Notes for Guidance on the Specification for Road Works Series NG 2300 – Bridge Expansion
Joints and Sealing of Gaps CC-GSW-02300**

Date: February 2023

Page No: General

Section No: General

Amendment Details:

This document supersedes the December 2010 publication of CC-GSW-02300. The following principal amendments have been incorporated into this document:

- a) The document has been re-formatted in line with the current TII Standards.
- b) References to BD-33 (superseded) removed and references to DN-STR-03006 implemented.

Contents Table

1.	General.....	1
2.	Installation of Bridge Deck Expansion Joints	2
3.	In-Situ Nosings.....	3
4.	NG Sample Appendices.....	4
5.	References.....	5
5.1	TII Publications (Standards) References	5

1. General

A schedule of expansion joints should be included in Appendix 23/1, with cross-references to the drawings in the Contract where appropriate. Where the use of proprietary joints or materials is envisaged, or the joint is not fully detailed on the drawings in the Contract, Appendix 23/1 should also give details of the design movements to enable the Contractor to propose appropriate joints. Particular requirements for subsurface drainage should be described in Appendix 23/1, with cross-references to the drawings in the Contract where appropriate.

The Employer's Representative should check that all bridge deck expansion joints proposed by the Contractor for use in the Works have a current NSAI Agrément Certificate, or equivalent.

Where gap sealing is required (e.g. between wing walls and abutments), the details should be shown on the drawings in the Contract with cross references to them and a schedule, if applicable, in Appendix 23/2.

2. Installation of Bridge Deck Expansion Joints

The installation of expansion joints requires a very high standard of workmanship and supervision if premature failure is to be avoided.

The width of the expansion joint gap and, where appropriate, the deck joint gap to be provided, should be related to the magnitude of residual creep, shrinkage, structural rotation, and temperature movements that may be expected in the deck, in addition to the prevailing deck temperature at the time of setting the joint gap. Where a preformed compression seal is to be incorporated in the gap, the gap setting should ensure that the seal does not lock up solid before full expansion has taken place.

Hardboard has proved to be effective in preventing surfacing materials, where they are to be cut back, adhering to the deck or the waterproofing.

Holding down bolts installed at an early stage of the deck construction are particularly vulnerable to damage. Care should be taken to protect threads from damage as any slight imperfections may prevent the pre-determined torque load being achieved.

Where curing is required for constituent parts of a joint system, the manufacturer's advice should be considered in conjunction with the actual mean air temperature when determining the curing time before the joint can be trafficked.

Specific requirements for the protection of newly installed joints should be shown on the drawings in the Contract, where appropriate.

3. In-Situ Nosings

Nosings should be dimensioned on the drawings in the Contract. Nosings should only be applied to sound concrete and it is imperative that concrete affected by cracking or deterioration be replaced.

It is emphasised that satisfactory in-situ resin-based mixes can only be achieved with completely dry aggregates.

Resin-based materials of any composition when placed in thin layers, say 12 mm thick, may not generate sufficient heat to cure satisfactorily below 10°C. A temperature of 10°C or above may be obtained by means of artificial heating to a constant temperature over the whole area.

4. NG Sample Appendices

NG Sample Appendix 23/1: Bridge Deck Expansion Joint Schedule

All bridge deck expansion joints shall satisfy the requirements of DN-STR-03006 - Expansion Joints for Use in Road Bridge Decks.

[Notes to compiler: This schedule should list all bridge expansion joints in the Contract by type, as described in Table A.3 of DN-STR-03006, and cross-reference the drawing number where the joint location is shown. The design movement ranges of each joint should be given to enable the Contractor to propose an appropriate joint. Particular requirements for subsurface drainage, including the position and invert level of connections to surface water drains or soakaways, should be given. Requirements for surface preparation and protection of metal components against corrosion should also be given].

NG Sample Appendix 23/2: Sealing of Gaps Schedule (Other Than in Bridge Deck Expansion Joints)

[Note to compiler: This schedule should include all gap sealing such as joints between wing wall and abutment, etc. Typical aspects to be included are:

- Joint types and references;
- Filler requirements;
- Sealant requirements;
- Water stop requirements;
- A cross-reference to the drawing number giving this or further information.]

5. References

5.1 TII Publications (Standards) References

DN-STR-03006 – Expansion Joints for use in Road Bridge Decks.



 Ionad Ghnó Gheata na Páirce,
Stráid Gheata na Páirce,
Baile Átha Cliath 8, D08 DK10, Éire

 Parkgate Business Centre,
Parkgate Street,
Dublin 8, D08 DK10, Ireland

 www.tii.ie

 info@tii.ie

 +353 (01) 646 3600

 +353 (01) 646 3601