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Transport Infrastructure Ireland

TII Publications



Specification for Road Works Series 2300 – Bridge Expansion Joints and Sealing of Gaps

CC-SPW-02300

February 2023

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Contents

1. General.....	1
2. Installation of Bridge Deck Expansion Joints	2
3. Sealing of Gaps	3
4. Protective Treatment.....	4
5. References.....	5

**Updates to TII Publications resulting in changes to
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Amendment Details:

This document supersedes the December 2010 publication of CC-SPW-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- b) References to BD-33 (superseded) removed and references to DN-STR-03006 implemented.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. Sealing of Gaps	3
4. Protective Treatment.....	4
5. References.....	5
5.1 TII Publications (Standards) References	5

1. General

Bridge deck expansion joints and sealing of gaps in bridges and structures shall be as described in Appendices 23/1 and 23/2 respectively and shall comply with the requirements of this Series.

Only bridge deck expansion joints which conform to the requirements of DN-STR-03006 – Expansion Joints for Use in Road Bridge Decks, and which have a current ETA or NSAI Agrément Certificate (or equivalent), shall be incorporated into the Works.

Storage and installation of joints, jointing materials, sealants and other associated items shall be in accordance with the manufacturer's recommendations.

The same joint system, seal or sealant shall continue across the full width of the deck including footway, verge, hard strip, hard shoulder and central reserve. Different joint systems shall not be combined at one end of a deck.

2. Installation of Bridge Deck Expansion Joints

The positioning of holding down bolts and anchorage systems shall be checked for accuracy before the casting of concrete commences. Templates or shuttering shall be fixed to box out the concrete for the joint and to locate holding down bolts or anchorage pockets. Threaded parts shall be protected, kept clean and free from rust.

Where the surfacing and bridge deck waterproofing are to be removed to accommodate the bridge joint, these shall be cut to a clean straight line for the full depth of the surfacing without damage to the concrete substrate.

Before installation of the joint, the concrete surfaces shall be sound, free from laitance, clean, and comply with the manufacturer's requirements.

The expansion joint and the bridge deck waterproofing shall be formed so that a water-tight seal is provided. Where prefabricated units are used, the seal between each unit shall be watertight and, in addition, a secondary waterproofing system in the form of a continuous membrane shall be applied.

The gap width shall be set, relative to the prevailing deck temperature, with the joint gap sides parallel as described in Appendix 23/1. Seals which are not held in metal runners shall remain in compression for the full range of joint movement.

Expansion joints shall be of uniform width and straight alignment, shall be accurately set and finished, and shall be aligned with the finished surface.

During the placing and hardening of the bedding and bonding materials, movement between the joint and the substrate shall be prevented.

Where required in Appendix 23/1, subsurface and below-joint drainage systems shall be provided and installed in accordance with the requirements therein, and the joint manufacturer's recommendations. The complete drainage system shall be accessible for cleaning and, on completion of the joint, the drainage system shall be checked and cleared of any obstructions.

Before vehicles traffic the joints, temporary covers that are capable of withstanding vehicular loading shall be provided over expansion joints during and after their installation as appropriate for protection.

3. Sealing of Gaps

Sealant materials and water stops shall be as described in Appendix 23/2. Joint filler board in any gaps shall comply with Series 1000.

Joint filler board and sealant materials shall be compatible.

Gunned or poured sealants shall be placed when the temperature of the structure is such that any movements which may take place will not cause the strain in the sealant to exceed the maximum value recommended by the manufacturer.

Immediately before sealing, the Contractor shall ensure that the sides of the joint gap are clean, dry, and free from loose material. Any concrete projections into the gap shall be removed.

Where a bond breaker in the form of a compressible strip is placed between the filler board and the sealant, it shall be compatible with both materials.

All seals shall, where practicable, be poured or fixed in one continuous length. The position and details of a joint in a seal shall be agreed by the Employer's Representative and the joint shall be formed in accordance with the manufacturer's instructions.

Where gunned or poured sealants are visible, the concrete shall be masked on either side of the joint with suitable tape prior to the placement of the sealant to prevent its adherence to the exposed concrete surface. The tape shall not stain the concrete surface.

4. Protective Treatment


Surface preparation and protection of metal components of expansion joints shall be in accordance with the joint manufacturer's recommendations unless otherwise specified in Appendix 23/1.

5. References

5.1 TII Publications (Standards) References

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



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