

BRIDGE EXPANSION JOINTS AND SEALING OF GAPS

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Bridge Expansion Joints and Sealing of Gaps

2301 General

- 1 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.
- 2 Only bridge deck expansion joints which conform to the requirements of UK Department of Transport Standard BD 33 and which have a current Irish Agrément Board Roads and Bridges Certificate shall be incorporated into the Works.
- 3 Storage and installation of joints, jointing materials, sealants and other associated items shall be in accordance with the manufacturer's recommendations.
- 4 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, except with the approval of the Engineer, be combined at one end of a deck.

2302 Installation of Bridge Deck Expansion Joints

- 1 The positioning of holding down bolts and anchorage systems shall be checked for accuracy and agreed by the Engineer before the casting of concrete commences. Templates or shuttering agreed by the Engineer shall be fixed to box out the concrete for the joint and to locate holding down bolts or anchorage pockets. The templates or shuttering shall be removed only with the Engineer's consent. Threaded parts shall be protected, kept clean and free from rust.
- 2 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.
- 3 Before installation of the joint, the concrete surfaces shall be free from laitance, sound, clean and comply with the manufacturer's requirements.
- 4 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 or a secondary waterproof membrane provided.

- 5 The gap width shall be set, in relation 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.
- 6 Expansion joints shall be of uniform width and straight alignment and shall be accurately set and finished and aligned with the finished surface.
- 7 During the placing and hardening of the bedding and bonding materials, movement between the joint and the substrate shall be prevented.
- 8 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. On completion of the joint, the drainage system shall be checked and cleared of any obstructions.
- 9 Before vehicles traffic the joints, temporary covers, capable of withstanding vehicular loading, shall be provided over expansion joints during and after their installation for a period to be agreed by the Engineer.

2303 Sealing of Gaps

- 1 Sealant materials and water stops shall be as described in Appendix 23/2. Joint filler board in any gaps shall comply with Clause 1015.
- 2 Joint filler board and sealant materials shall be compatible and the Contractor shall submit to the Engineer for approval the manufacturer's specification for these materials.
- 3 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.
- 4 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.

- 5 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 and agreed by the Engineer.
- 6 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 Engineer and the joint shall be formed in accordance with the manufacturer's instructions unless otherwise directed by the Engineer.
- 7 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.

2304 Protective Treatment

- 1 Surface preparation and protection of metal components of expansion joints shall comply with the relevant Clauses in the 1900 Series and any additional requirements in Appendix 23/1.

