

IMPLEMENTATION SPECIFICATION FOR ROAD WORKS

SERIES IM/2300 (IMPLEMENTATION)

BRIDGE EXPANSION JOINTS AND SEALING OF GAPS



*This Specification Series implements the requirements in
Subsidiary Legislation 499.57, Part II (New Roads and Road
Works Regulations) in accordance with the Agency for
Infrastructure Malta ACT XXVIII, CAP. 588, Part I*

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2300 BRIDGE BEARINGS

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 Storage and installation of joints, jointing materials, sealants and other associated items shall be in accordance with the manufacturer's recommendations.
- 3 The same joint system, seal or sealant shall continue the full width of the deck including footway, verge, hard strip, hard shoulder, and central reserve. Different joint system shall not be combined at one end of a deck unless otherwise specified in Appendix 23/1.

2302 Installation of Bridge Deck Expansion Joints

- 1 The positioning of holding down bolts and anchorage 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.
- 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 watertight seal is provide. Where prefabricated units are used, the seal between each unit shall be made watertight and in addition a secondary waterproofing system in the form of a continuous membrane shall be installed.
- 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, surfaces and below-joint drainage system shall be designed, 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.

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

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 boards and sealant materials shall be compatible.
- 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.
- 6 All seals shall, where practicable, be poured or fixed in one continuous length. Where required, a joint in a seal be located and formed in accordance with the manufacturer's instructions.
- 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.
- 8 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.

2304 Protective Treatment

- 1 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.