

**Technical Specification**

**Transport and Main Roads Specifications  
MRTS82 Bridge Deck Expansion Joints**

**July 2021**

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## 1 Introduction

This Technical Specification applies to the supply and installation of bridge deck expansion joints.

This Technical Specification shall be read in conjunction with MRTS01 *Introduction to Technical Specifications*, MRTS50 *Specific Quality System Requirements* and other Technical Specifications as appropriate.

This Technical Specification forms part of the Transport and Main Roads Specifications Manual.

The construction of bridge deck expansion joints shall use suppliers and products for the items listed in Table 1 that are registered by Transport and Main Roads.

**Table 1 – Items requiring use of registered suppliers and products**

Clause	Category of Work
5.1	Cast-in extruded aluminium strip seal expansion joints
6.1	Bolted-in extruded aluminium strip seal expansion joints
6.2.5	Epoxy mortar
7.1	Strip seal expansion joints without deck anchors
8.1	Elastomeric compression seal expansion joints
9.1	Sealant joints with elastomeric concrete nosing

For information regarding registration of suppliers and products for the above items refer to the [Approved Products and Registered Suppliers](#) page on the departmental website.

Registered suppliers and products for the above items are listed in the relevant clauses in Annexure MRTS82.1.

## 2 Definition of terms

The terms used in this Technical Specification shall be as defined in Clause 2 of MRTS01 *Introduction to Technical Specifications*.

## 3 References

Table 3 lists documents referenced in this Technical Specification.

**Table 3 – Referenced documents**

Reference	Title
AS 1214	<i>Hot-dip galvanized coatings on threaded fasteners (ISO metric coarse thread series)</i>
AS 1683.11	<i>Methods of test for elastomers – Tension testing of vulcanized or thermoplastic rubber</i>
AS 1683.13	<i>Methods of test for elastomers – Compression set of vulcanized rubber under constant deflection</i>
AS 1683.15.1	<i>Methods of test for elastomers – International rubber hardness</i>
AS 1683.23	<i>Methods of test for elastomers – Rubber – Vulcanized – Determination of resistance to liquids</i>

Reference	Title
AS 1683.24	<i>Methods of test for rubber – Determination of the resistance of vulcanized or thermoplastic rubbers to ozone cracking – Static strain test</i>
AS 1683.26	<i>Methods of test for elastomers – Rubber, vulcanized or thermoplastic – Accelerated ageing and heat resistance tests</i>
AS/NZS 4680	<i>Hot-dip galvanized (zinc) coatings on fabricated ferrous articles</i>
AS 5100.4	<i>Bridge design Part 4: Bearings and deck joints</i>
ASTM D746	<i>Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact</i>
ISO 9001	<i>Quality management systems – Requirements</i>
MRTS01	<i>Introduction to Technical Specifications</i>
MRTS17	<i>Bitumen and Multigrade Bitumen</i>
MRTS50	<i>Specific Quality System Requirements</i>

## 4 Quality system requirements

### 4.1 Hold Points, Witness Points and Milestones

General requirements for Hold Points, Witness Points and Milestones are specified in Clause 5.2 of MRTS01 *Introduction to Technical Specifications*. The Hold Points, Witness Points and Milestones applicable to this Technical Specification are summarised in Table 4.1.

**Table 4.1 – Hold Points, Witness Points and Milestones**

Clause	Hold Point	Witness Point	Milestone
4.2	1. Installation of the joint 2. Allow traffic on new joints		
5.2.1			Submission of Neoprene seal test results
5.3.1		1. Placement of concrete around cast-in aluminium expansion joint	
6.3.3		2. Installation of bolted-in aluminium expansion joint 3. Tightening of nuts	
7.3.1		4. Preparation and installation of sealant joint	
8.3.1		5. Preparation of installation of joint	
9.3.1		6. Preparation and installation of compression seal	

#### 4.2 Construction procedures and joint installation

The Contractor shall prepare documented procedures incorporating the supplier's installation requirements for all construction/installation processes in accordance Clause 6 of MRTS50 *Specific Quality System Requirements* and submitted to the Administrator at least 14 days before commencement of the joint installation for approval by the administrator.

Installation of the joint shall be a Hold Point. Installation shall not commence until the Administrator has reviewed the installation procedure and released the hold point. **Hold Point 1**

Joint installation shall be witnessed by an inspector who has appropriately experience in expansion joint installation and been nominated by the Administrator. Traffic shall not be allowed on newly installed joints until the inspector confirm that the joint installation was undertaken in accordance with the installation procedure and release the hold point. **Hold Point 2**

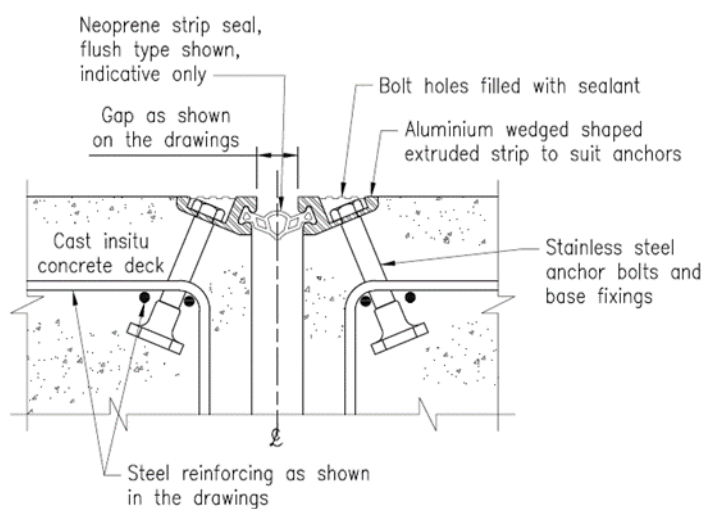
### 5 Cast-in extruded aluminium strip seal expansion joints

#### 5.1 General

The cast-in extruded aluminium expansion joint shall be used on a cast insitu reinforced concrete bridge deck. Cast-in extruded aluminium expansion joint shall be a registered product and listed in Clause 1 of Annexure MRTS82.1. The joints shall comply with the details shown in the project design drawings. Refer, Appendix A for suitable applications of this joint type.

The cast-in extruded aluminium expansion joint comprises with extruded wedge-shaped aluminium strip and neoprene strip seal. The aluminium protection strip shall be anchored into cast-in ferrule using stainless steel bolts. Typical details of this joint type is shown in Figure 5.1.

**Figure 5.1 – Typical details of cast-in extruded aluminium expansion joint**



Alternative products may be submitted to the Administrator for approval.

## 5.2 Materials

### 5.2.1 Neoprene strip seal

The neoprene seal shall be supplied in one continuous length with no intermediate joint(s). For joint rehabilitation projects, it is acceptable to use a seal length to suit the practical lane closure arrangement, if necessary.

Preformed elastomeric joint seals of the strip seal type shall be made from vulcanised compound having polymerized chloroprene as the only base polymer.

The elastomer used in the manufacture of the joint seals shall be tested at a NATA or NATA Mutual Recognition Arrangement (MRA) network laboratory for the relevant tests and that it complies with the requirements specified in Table 5.2.1. **Milestone**

The requirements of NATA testing may be waived provided that:

- a) the elastomer for the manufacture of the strip seals is supplied by a company which has a quality assurance system to ISO 9001 that is third party certified for the manufacture and supply of elastomer.
- b) test certificates supplied to validate that the elastomer meets the properties specified in Table 5.2.1 are not more than six months old.
- c) day to day batch quality control on the manufacture of the elastomer is exercised by performing a test which accurately measures the cure characteristics of the elastomer and highlights variations resulting from incorrect ingredients or levels thereof, and
- d) the manufacturer establishes control points and limits on batches which have been Type Tested and uses these control points and limits for subsequent quality control purposes.

**Table 5.2.1 – Elastomer material requirements**

Property	Requirement	Test Method
Tensile Strength	13.8 MPa minimum	AS 1683.11 (Dumb-bell test pieces)
Elongation at Break	250% minimum	AS 1683.11 (Dumb-bell test pieces)
Hardness	IRHD 59± 5	AS 1683.15.1
Ageing		AS 1683.26 (Method A for 72 hours at 100°C)
Change in Tensile Strength	- 20% to 0	AS 1683.11 (Dumb-bell test pieces)
Change in Elongation at Break	- 20% to 0	AS 1683.11 (Dumb-bell test pieces)
Change in Hardness	IRHD 0 to + 10	AS 1683.15.1
Resistance to Ozone	No visible cracking	AS 1683.24 (Ozone concentration 100 pphm in air, 20% strain, 100 hours at 40°C)
Low Temperature Stiffening (Change in hardness)	IRHD 0 to + 15	AS 1683.15.1 (After seven days at - 10°C)
Change in Volume in Oil	+ 70% maximum	AS 1683.23 (Using Oil 3 (IRM 903), after 72 hours at 100°C)
Compression Set	40% maximum	AS 1683.13 (72 hours at 100°C)
Low Temperature Brittleness	Not Brittle	ASTM D746 (B) (at - 30°C)



The neoprene strip seal can be manufactured as a flush (F) neoprene strip seal or draped (D) seal. Flush seal is superior as it keeps road grit from falling into the joint and clogging it up. The drawback with the flush seal is that it does not suit bridges with a large skew. Therefore, a flush seal is more suitable on bridges skewed up to and including 20°. For bridges skewed greater than 20° and up to and including 45°, a draped seal is more suitable over flush strip seals. For bridges skewed greater than 45°, the suitability of strip seal expansion joint systems shall be assessed case by case in consultation with the manufacture.



Flush strip seal



Draped strip seal

### 5.2.2 Aluminium strip

The aluminium strip shall be supplied in modules with the minimum length as stated in supplier technical data sheets and specifications. Joints in the aluminium strips shall be provided only in the following locations:

- a) for a two lane bridge, a joint may be provided at the road centre line, and
- b) for bridges with more than two lanes, joints may be provided at the lane lines and the crown of the road. Joints shall not be provided at the edge lines.

Aluminium strip shall be butted together without bonding. The joint upstand at the kerb shall be welded as detailed in the project drawings.

The joint at the kerbs and/or parapets shall be fabricated to the dimensions shown in the project drawings.

### 5.2.3 Anchor bolts

Anchor bolts shall be of the diameter, length and the spacing recommended by the manufacturer of the expansion joint. Anchor bolts shall have hexagonal heads. Base fixings shall be of sufficient size as to provide substantial pull-out resistance for anchors. Anchor bolts and base fixings shall be fabricated from stainless steel. Anchor bolts shall be fabricated from Grade 316 (A4-70, UNS S31600) stainless steel. Anchor bolts shall be supplied with one Grade 304 (A2-70, UNS S30400) stainless steel nut and Grade 316 (A4-70, UNS S31600) stainless steel washer of 1.5 mm minimum thickness. Bolts and nuts shall have ISO coarse pitch metric rolled thread. All fasteners (bolts, nuts and washers) shall be either electro-polished or passivated in accordance with ASTM A380 / ASTM A380.

Minimum stud/bolt diameter shall be M16.

## 5.3 Construction

### 5.3.1 Installing aluminium protection armour

The aluminium protection armour shall be securely supported on the deck formwork so that it is not displaced during placement of concrete.

Anchor bolts shall be firmly tightened onto the PVC sleeves, where provided.

Steel reinforcement shall be tied to the anchor bolts near the base fixings in accordance with the details shown in the project design drawings.

Extreme care shall be taken during placement of concrete to ensure that proper compaction is achieved around the anchor bolts and under the aluminium strip without displacement of the strip.

#### **Witness Point 1**

#### **5.3.2 Installing neoprene strip seal**

The neoprene strip seal shall be installed between adjoining aluminium sections. The neoprene seal shall be installed in a continuous piece with no intermediate joint(s) using appropriate lubricant and tools as recommended by the manufacturer. For joint rehabilitation projects, it is acceptable to use a seal length to suit the practical lane closure arrangement, if necessary.

#### **5.3.3 Filling of anchor bolt recesses**

The anchor bolt recesses in the top of the aluminium protection armour shall be filled with a proprietary flexible polyurethane filler.

### **6 Bolted-in extruded aluminium strip seal expansion joints**

#### **6.1 General**

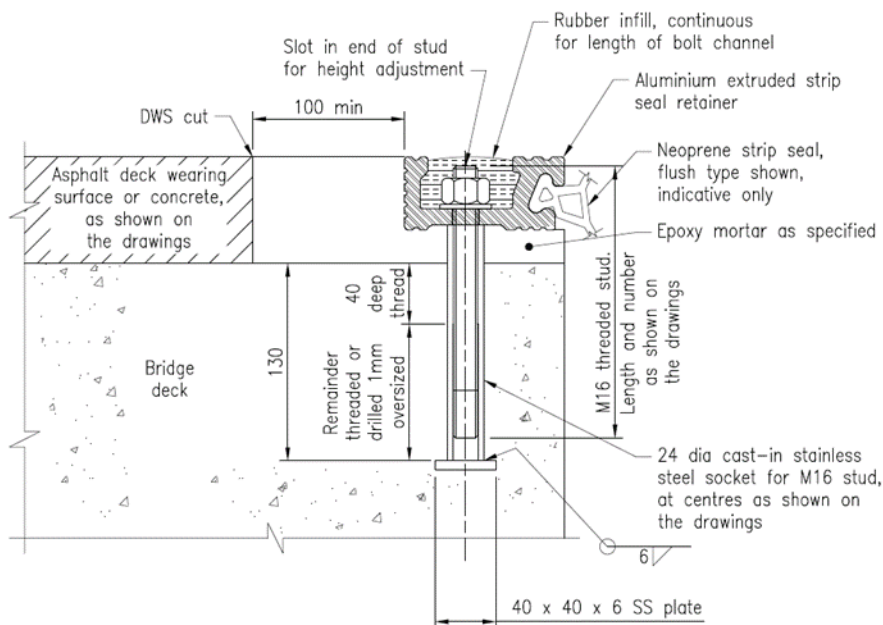
The bolted-in extruded aluminium expansion joint shall only be used at expansion joints on a deck which has an asphalt deck wearing surface. This joint type is preferable to use where there is no cast in-situ deck slab such as transversely stressed deck unit bridges. Refer, Appendix A for suitable applications of this joint type.

Bolted-in extruded aluminium expansion joints shall be a registered product listed in Clause 2.1 of Annexure MRTS82.1.

Alternative products may be submitted to the Administrator for approval.

Bolted-in extruded aluminium expansion joint comprises with extruded aluminium protection armour and neoprene strip seal. The aluminium protection armour is anchored into cast-in ferrule with stainless steel studs. The expansion joint shall comply with the details shown in the project design drawings and those shown in Figure 6.1.

**Figure 6.1 – Typical details of bolted-in extruded aluminium strip seal expansion joint**



## 6.2 Materials

### 6.2.1 Proprietary joint

Any alternative design of expansion joint submitted to the Administrator for approval shall be made of similar material, shall have equivalent holding down arrangements and shall have an easily replaceable neoprene strip seal of equivalent durability.

### 6.2.2 Neoprene strip seal

The seal shall be continuous across the width of the bridge with no intermediate joint(s). The seal shall conform to Clause 5.2.1. For joint rehabilitation projects, it is acceptable to use a seal length to suit the practical lane closure arrangement, if necessary.

### 6.2.3 Extruded aluminium protection armour

The aluminium protection armour shall be supplied in modules with the minimum length as stated herein. Joints in the aluminium protection armour shall be provided only in the following locations:

- a) for a two lane bridge, a joint may be provided at the road centre line, and
- b) for bridges with more than two lanes, joints may be provided at the lane lines and the crown of the road. Joints shall not be used at the edge lines.

Aluminium protection armour shall be butted together without bonding. The upstand at the kerb shall be welded as detailed in the project design drawings.

Kerb and parapet details shall be fabricated to the dimensions shown in the project design drawings.

#### **6.2.4 Studs**

Anchor bolt assembly shall be fabricated to the dimensions shown in the project design drawings. Studs shall have a slot at top end for height adjustment using a screwdriver.

Anchor bolt assembly shall be fabricated from stainless steel. Studs shall be fabricated from Grade 316 (A4-70, UNS S31600) stainless steel. Studs shall be supplied with one Grade 304 (A2-70, UNS S30400) stainless steel nut and Grade 316 (A4-70, UNS S31600) stainless steel washer of 1.5 mm minimum thickness. Studs and nuts shall have ISO coarse pitch metric rolled thread. All fasteners (studs, nuts and washers) shall be either electro-polished or passivated in accordance with ASTM A380 / ASTM A380.

Minimum stud diameter shall be M16. Size, length and spacing of the stud shall be as per drawings and joint supplier technical data sheets.

#### **6.2.5 Epoxy mortar**

Epoxy mortar shall consist of fine aggregate and an approved proprietary product capable of forming a dense mortar and having superior adhesion to concrete.

Registered products are listed in Clauses 2.2 of Annexure MRTS82.1. Alternative products, including full technical details of the alternative formulation, may be submitted to the Administrator for approval.

Epoxy shall be supplied in kits which shall be used as a unit and not broken down into smaller portions.

No epoxy mortar shall be used once the pot life limit of the epoxy has expired. The pot life depends on aggregate temperature, epoxy temperature and surface temperature. The limit recommended by the manufacturer shall be observed. In hot weather, joints shall be installed during the cooler part of the day.

Aggregate used for epoxy mortar shall be well graded with 100% of material passing the 6.7 mm AS sieve and not less than 85% of material passing the 4.75 mm AS sieve. Aggregate shall be clean, free from impurities and completely dry. Bagged dry sand supplied by the epoxy manufacturer or filter medium sand supplied in bags may be acceptable.

### **6.3 Construction**

#### **6.3.1 Joint preparation**

Transverse saw cuts at the outer edges of the expansion joint recess shall be inserted in the deck wearing surface, from kerb to kerb. The depth of the saw cuts shall be slightly less than the depth of deck wearing surface to avoid damaging the concrete deck. The deck wearing surface between the saw cuts and the underlying bond barrier shall be removed. The exposed concrete surface in the joint shall be sand blasted or well scabbled to produce a clean concrete surface.

Plugs shall be removed from the cast-in sockets and the studs inserted and adjusted to level.

#### **6.3.2 Epoxy mortar**

Proprietary epoxy mortar shall be mixed in accordance with the manufacturer's instructions.

#### **6.3.3 Installing aluminium protection armour**

Installation of aluminium protection armour shall be a Witness Point. **Witness Point 2**

Aluminium protection armour shall be match drilled to the stud locations with 18 mm diameter holes for M16 studs or as specified by the joint supplier specification.

The aluminium protection armour shall be bedded on epoxy mortar with the joint adjusted to the level and profile of the deck wearing surface. Before placing epoxy mortar, the concrete surface shall be primed with neat epoxy similar to that used in the epoxy mortar.

Sufficient epoxy mortar shall be used to enable the aluminium strip to be set flush with the deck wearing surface and fully bedded on the mortar. Excess mortar shall be cleaned up immediately.

After the epoxy has cured, the nuts on the studs shall be tightened to the torque as specified in the joint manufacturer's installation specification. **Witness Point 3**

#### 6.3.4 Installing neoprene strip seal

The neoprene strip seal shall be installed between adjoining aluminium protection armour. The neoprene seal shall be installed in a continuous piece with no intermediate joints using appropriate lubricant and tools as recommended by the manufacturer. For joint rehabilitation projects, it is acceptable to use a seal length to suit the practical lane closure arrangement, if necessary.

#### 6.3.5 Installing bolt channel fill

The bolt channel fill shall be installed as a continuous fill as recommended by the manufacturer. The bolt channel shall be filled with Class 320 bitumen in accordance with the requirements of MRTS17 *Bitumen and Multigrade Bitumen*. Alternative proprietary fillers shall be a flexible polyurethane filler or similar to the joint manufacturer's specification.

#### 6.3.6 Finishing

The gap between the aluminium protection armour and the deck wearing surface shall be filled with epoxy mortar, finished flush with the top of the joint and the deck wearing surface.

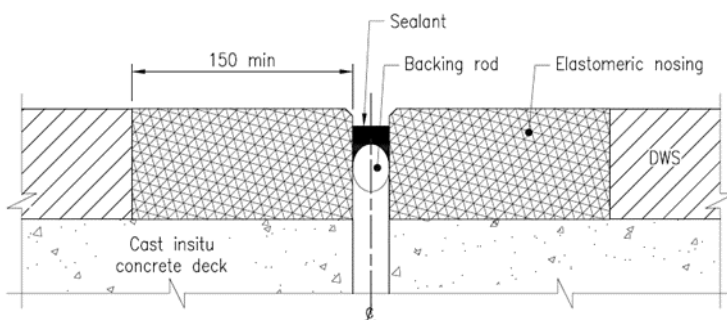
### 7 Sealant joints with elastomeric concrete nosing

#### 7.1 General

This expansion joint type comprises elastomeric nosing with a cold applied joint sealant as shown in the typical detail in Figure 7.1. Refer Appendix A for suitable applications of this joint type.

Elastomeric nosing joints shall be a registered product and listed in Clause 3 of Annexure MRTS82.1.

**Figure 7.1 – Typical expansion joint detail of elastomeric nosing joint**



#### 7.2 Materials

The joint system components including elastomeric nosing and joint sealant shall be in accordance with the manufacturer's technical data sheets.

### 7.3 Construction

#### 7.3.1 Joint preparation

Transverse saw cuts at the outer edges of the expansion joint recess shall be inserted in the deck wearing surface, from kerb to kerb. The depth of the saw cuts shall be slightly less than the depth of deck wearing surface to avoid damaging the concrete deck. The deck wearing surface between the saw cuts and the underlying bond barrier shall be removed. The exposed concrete surface in the joint shall be sand blasted or well scabbled to produce a clean concrete surface.

The installation of sealant joint including its nosing, backing rod and sealant shall be in accordance with manufacturer's specifications and installation method statements.

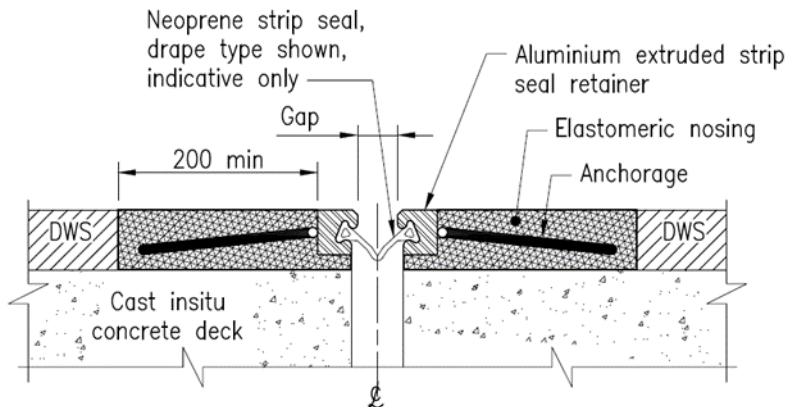
Joint preparation and installation shall be a witness point. **Witness Point 4**

## 8 Strip seal expansion joints without deck anchors

### 8.1 General

The joint comprises metal protection armour / retainer with neoprene strip seal insert. The protection armour is anchored to the elastomeric nosing. The metal protection armour shall be placed on resin mortar. Typical joint details are shown in the Figure 8.1. Refer, Appendix A for suitable applications of this joint type.

**Figure 8.1 – Typical details of strip seal expansion joints without deck anchors**



This joint type shall only be used for rehabilitation of bridge expansion joints where other joint types are practically not possible and/or does not meet bridge expansion requirements.

The joint shall be a registered product listed in Clause 4 of Annexure MRTS82.1.

### 8.2 Materials

#### 8.2.1 Proprietary joint

The metal protection armour, neoprene strip seal and elastomeric nosing shall comply with the detail shown in the project drawings, supplier provided Technical Data Sheets and those shown in Figure 8.1.

#### 8.2.2 Neoprene seal

Neoprene strip seal shall be in accordance with Clause 5.2.1.

### **8.2.3 Metal protection armour**

The metal protection armour shall be supplied in modules with the minimum length as stated herein. Joints in the metal protection armour shall be provided only in the following locations:

- a) for a two lane bridge, a joint may be provided at the road centre line, and
- b) for bridges with more than two lanes, joints may be provided at the lane lines and the crown of the road. Joints shall not be provided at the edge lines.

The metal protection armour shall be butted together without bonding. The upstand at the kerb shall be welded as detailed in the project design drawings.

Kerb and parapet details shall be fabricated to the dimensions shown in the project design drawings.

### **8.2.4 Elastomeric nosing**

The elastomeric nosing material shall be in accordance with manufacturer's technical specification.

## **8.3 Construction**

### **8.3.1 Joint preparation and installation**

Transverse saw cuts at the outer edges of the expansion joint recess shall be inserted in the deck wearing surface, from kerb to kerb. The depth of the saw cuts shall be slightly less than the depth of deck wearing surface to avoid damaging the concrete deck. The deck wearing surface between the saw cuts and the underlying bond barrier shall be removed. The exposed concrete surface in the joint shall be sand blasted or well scabbled to produce a clean concrete surface.

The installation joint including its metal strip seal retainers, anchorage, elastomeric nosing and strip seal shall be in accordance with manufacturer's specifications and installation method statements.

Joint preparation and installation shall be a witness point. **Witness Point 5**

## **9 Elastomeric compression seal expansion joints**

### **9.1 General**

Elastomeric compression seal joint comprises of preformed box shape elastomeric compression seals install with a lubricant adhesive for the insertion into concrete bridge deck joint. Refer, Appendix A for suitable applications of this joint type.

Compression seal type of joints shall only be used for bridge expansion joint rehabilitation where the similar joint is in the existing bridge and that joint type to be retained or other joint types are practically not possible. This joint type shall only be used subject to site-specific approval from Director (Structures Design, Review and Standards) for each project. Designer shall submit evidence for the suitability of this joint type over other expansion joint types.

The compression seal shall have multiple webs and accommodate compression by folding inwards at the top.

Metal protection armour shall be provided for compression seal joint. Flat steel seating strips projecting from the metal protection armour shall be provided over the full width of the joint to prevent the seal squeezing down through the joint.

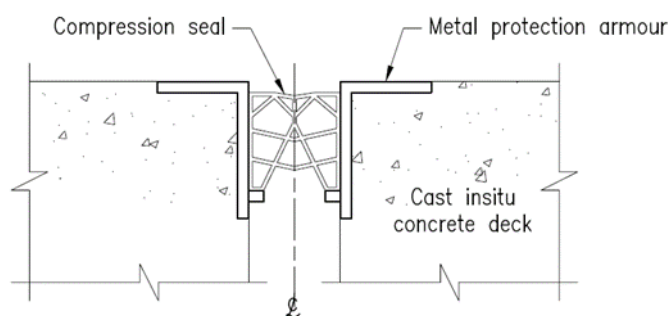
The compression seal shall accommodate the specified range of movement on the project design drawings. The strain in the compression seal at the maximum and minimum ultimate joint openings shall be not more than 50% of the compression seal's nominal movement capability.

The Compression seal joint shall be a registered product listed in Clause 5 of Annexure MRTS82.1.

Details of elastomeric compression seal expansion joint shall be shown in the project design drawings.

Typical details of this joint type are shown in Figure 9.1.

**Figure 9.1 – Typical details of elastomeric compression seal expansion joint**



## 9.2 Materials

### 9.2.1 Compression seal

Compression seal material shall be in accordance with Table 5.2.1

Seal shall be completely uniform and homogeneous throughout. Reject any seal showing imperfections, surface splits or indentations.

The longitudinal profile of the seal shall match the bridge cross section and be obtained either by removing a portion of the seal to bend it to the required angle or by joining straight lengths using an adhesive recommended by the seal manufacturer. The seal shall not be field spliced except when specifically permitted by the Administrator.

**Table 9.2.1 – Seal Properties**

Recovery of compression seal (Test Method ASTM: D 3542, Clause 8.2)	Requirement
High temperature recovery after 72 hours at 100°C	80% minimum
Low temperature recovery after 72 hours at –10°C	88% minimum

Notes:

(a) Two test samples must be tested simultaneously for each recovery test. The recovery value must be the average result of the pair of samples, provided the lowest result does not exceed a tolerance of 0 to –3% of the minimum specified recovery.

(b) If, after a recovery test, any test sample exhibits adhesion between any internal faces, cracking in any walls or splitting, reject the batch of seal represented by the sample.



### 9.2.2 Adhesive Lubricant

The adhesive lubricant shall provide sufficient lubrication for insertion of the seal into the joint gap at ambient temperatures. It shall be a moisture cured or chemically cured single or multi component compound compatible with the seal and substrate and not be affected by moisture. It shall bond the seal to the face of the joint gap and seal the joint against infiltration of moisture.

Use only a lubricant that conforms to Table 9.2.2 and is recommended by the seal manufacturer. Verify compliance of the lubricant by submission of a test report issued by the manufacturer or, if required by the Principal, by a NATA accredited test report.

**Table 9.2.2 – Adhesive Lubricant**

Properties Property	Requirement	Test Method
Solids content	60% minimum	ASTM D 4070, Clause 9.1
Viscosity	20,000 to 300,000 cP	ASTM D 4070, Clause 9.2
Lubricating life	2 hours minimum	ASTM D 4070, Clause 9.3
Sag	No sagging	ASTM D 4070, Clause 9.4
Peeling strength test: 500 g load 1000 g load	zero 12 min	ASTM D 4070, Clause 9.5

### 9.3 Construction

#### 9.3.1 The joint preparation and installation

The compression seal shall not be inserted into the joint gap until all deck concrete work in adjacent spans or abutments is complete, except in the case of seals which are pre-compressed between permanent steel sections with the assembly fixed in position prior to placing the concrete.

The sides of the joint gap must be sound, dry and blast cleaned of all grit and loose particles before installation of the seal unless otherwise required by the Principal.

Insert the seal into the joint gap using the adhesive lubricant and an insertion tool recommended by the seal manufacturer.

The installation for compression seal shall be in accordance with manufacturer’s specifications and installation method statements.

Joint preparation and installation shall be a witness point. **Witness Point 6**

### 10 Supplementary requirements

The requirements of MRTS82 *Bridge Deck Expansion Joints* are varied by the supplementary requirements given in Clause 6 of Annexure MRTS82.1.

## Appendix A – Suitability of various joint types

Table A provides the recommended application of expansion joint types specified in this Technical Specification.

**Table A – Suitability of various joint types**

Joint Type	Reference clause in MRTS82	New bridges	Joint Rehabilitation
Cast-in extruded aluminium strip seal expansion joints	5.0	√	√
Bolted-in extruded aluminium strip seal expansion joints	6.0	√ (Note 1)	√ (Note 1)
Sealant joints with elastomeric concrete nosing	7.0	√	√
Strip seal expansion joints without deck anchors	8.0	X	√ (Note 2)
Elastomeric compression seal	9.0	X	√ (Note 3)

Note 1 – This joint type is preferred to use where there is no cast in-situ deck slab such as transversely stressed deck unit bridges.

Note 2 – This joint type shall be used if all other joint types are practically not possible and/or does not meet bridge expansion requirements.

Note 3 – This joint shall be used for rehabilitation activities where the existing joint type is similar and joint type retention is required or other joint types are practically not possible. This joint type shall only be used subject to site specific approval to use from Director (Structures Design, Review and Standards) on a project-by-project basis.

