Emer-Seal® Roadseal

Technical Data Sheet

High performance, low modulus, high joint movement accommodation, one-component silicone rubber joint sealant

Uses

Sealing joints in:

- Concrete roads & pavements
- Bridge decks and car parks
- Aircraft runways and aprons

Advantages

- Ready to use
- Easy contractor application
- No mixing required
- Fast rate of cure
- Excellent adhesion to clean dry concrete
- Excellent weathering - UV and ozone resistant
- Dispensed from a bulk container by hand or air powered pump
- Large joint movement accommodation

Standards Compliance

NSW RTA Bridge Decks QA Spec. B312 Ed 3/ Rev 0, 9/98

- Type GN - Accepted for use
- Type GT - Meets performance requirements (except hardness)

NSW RTA Rigid Pavements Spec R83.4 Ed 2/Rev 3, 8/99

- Accepted for use

QLD Main Roads - MRS11.82

- Approved for use

QLD Main Roads - Concrete Pavements Spec MRS 11.40 7/96 Table 4.3.4

- Suitable for use

Description

Roadseal is a one-part, gun applied, silicone rubber joint sealant designed to effectively seal joints in concrete roads, runways, carparks and pavements. The low modulus characteristics of Roadseal allow it to accommodate cyclic joint movements of plus 100% and minus 50%. Roadseal is designed to be applied to joints between concrete pavements in order to prevent running water from undermining the pavement. Roadseal also serves to prevent stones from being deposited in the joints which would otherwise lock the joints and restrict the free thermal movement of adjacent pavement segments.

Properties

Data quoted are typical for these products, but do not constitute a specification.

Form:	Non slump, thixotropic paste
Colour:	Concrete Grey
Physical or chemical Change:	Chemical cure, moisture activated
Hardness (Shore A):	17 +/- 5
Application temperature:	Minimum 5°C
Service temperature:	Minus 50°C - 150°C
Tooling time @ 23°C :	20 minutes
Tack free time @ 23°C:	45 - 60 minutes
Movement accommodation factor:	Plus 100% - minus 50%
Elongation ASTM D412 :	1000%
Chemical resistance to occasional spillage:	Resistant to dilute acids and alkalis. Not resistant to organic solvents

Design Criteria

Roadseal is designed for use in joints between concrete pavements. All moving joints should be designed with an optimum width to depth ratio of 2:1 and an overriding minimum sealant depth of 10 mm. In all joints either a polyethylene bond breaker tape or backing rod must be used to ensure that the correct width to depth profile is achieved and to prevent the sealant from adhering to the base of the joint. The sealant should be applied and tooled so that the sealant surface is about 5 mm below the pavement surface.

Application Instructions

Joint preparation

All concrete to which Roadseal is to be applied must be a minimum of 14 days old. All joint surfaces must be clean, dry and free from any concrete slurry, oil, dirt or loose material, form release or curing compounds.

Saw cut joints must be thoroughly cleaned of all concrete slurry by a high pressure water wash, followed by drying with high pressure compressed air. After air blasting the surface water away, the joints must be allowed to dry normally for an additional 16 hours. Where atmospheric conditions are not conducive to good drying e.g. low temperatures, high humidity or rain; Primer 10 or Primer 13 should be used.

Where previously sealed joints are to be re-sealed, mechanically remove all of the existing sealant prior to saw cutting the joint. Care should be taken not to melt residual asphaltic sealant and spread it onto the joint faces with the hot saw blade.

Before application of the Roadseal remove any wind blown debris from the joints with a blast of dry, oil free, compressed air.

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An approved closed cell polyethylene backer rod or bond breaker tape must be installed into the joint before sealant application. When placing the backer rod allow for a 5 mm set down of the sealant from the pavement surface.

Priming

Priming is not normally required provided the joint faces are clean and free from any trace of laitance and surface contamination. Primer 10 is recommended on concrete and masonry surfaces to achieve the best possible adhesion. A primer must be used if the sealant is to be submersed for long periods, such as joints in a flood crossing or where fuel or chemical spillage may occur. Consult your local Parchem sales office for advice on priming. Primer 13 must be used in applications where Roadseal is to be subjected to permanent water immersion.

Application

Roadseal is applied from 600 ml sausages or bulk containers into the joints using a suitable sealant gun. On larger projects, an air assisted gun and pump may be used allowing faster application. Within 10 minutes after application, the sealant must be tooled in order to improve contact with the joint faces, and to lower the sealant surface to a level about 5 mm below the pavement surface. Tooling is essential to force the sealant to make good contact with the joint faces and achieve good adhesion.

Equipment

Complete high volume application units include an air powered pump, follower plate, hose, gun, and applicator nozzle. The extrusion pumps are available with various output capacities. The hoses and connections must not allow moisture penetration. Teflon lined hoses are recommended because of their low moisture permeability. It should be noted that the rate of sealant delivery is affected by air pressure, hose length, hose diameter and nozzle diameter.

Clean up

Equipment may be cleaned of uncured sealant by wiping, or soaking and wiping with Solvent 10. Any sealant allowed to cure becomes very difficult to remove and can only be removed using Solvent 10 in combination with steel wool.

Limitations

Elastomeric sealants such as Roadseal should not be applied in close proximity to bituminous materials as these may contain components which can migrate into the sealant and result in staining, reduced performance or a loss of adhesion.

Joints in asphalt roads should only be sealed with Roadseal SL, an ultra-low modulus version of Roadseal designed for sealing sawn joints in asphalt pavements and abutment joints between concrete and asphalt.

Where asphalt is to be applied over the concrete pavement containing the Roadseal, a non-adhesive bond breaker tape must be applied over the sealant surface to prevent direct contact with the asphalt and to prevent the asphalt bonding to the sealant surface.

Estimating

Packaging

Roadseal:	600 ml sausage (PC: 610402) 20 litre drum (PC: 610401) 200 litre drum (PC: 610405)
Primer 10:	250 ml tin
Primer 13:	250 ml pack (two-part epoxy)
Solvent 10:	4 and 20 litre drums

Coverage

Each 20 litre drum will seal approximately 200 metres of joint with a 10 mm wide by 10 mm deep sealant bead.

Storage

Storage life of 18 months in original containers when kept in cool, dry conditions.

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