Zealseal™ 4000 System

For Bridge & Road Applications.

(For carpark, public space and architectural applications see Miska ZealSeal™ 2000 data sheet).

The Miska Zealseal™ System provides a waterproof, trafficable seal utilizing Zealcrete LV™ epoxy elastomeric concrete as the armor nosing to support the Zealseal™ expansion foam.

Pictured: Gateway Motorway Brisbane

System Applications

- Asphalt on Concrete Deck Installations — Zealseal™ 4000 A
- Concrete Rebate Installations — Zealseal™ 4000 C
- Steel Armor Nosing and Cold Applied Sealant with Backer Rod Retrofits — Zealseal™ 4000 R

Key Advantages

- Zealseal™ has a minimum controlled depth of 50mm giving a guaranteed bond line that is not subject to the diligence of the installer.
- Zealseal™ has a operating system which is active across the full depth and width of the seal as opposed to the varying depths in some sealant systems.
- Zealseal™ has a homogeneous uniform structure and maintains its shape irrespective of the width or its position in the movement range.
- Zealseal™ is nitrogen blown and therefore is chemically inert providing higher heat resistance and UV stability than EVA chemically formed products.

Zealseal™

Zealseal™ is a nitrogen blown, closed cell, cross linked polyethylene material which conforms to ASTM D-1056, Type 2 Class B, Grade 3 specifications. It is a preformed, low density, resilient material that is UV stabilized. Manufactured in such a way that it is free of toxins, non reactive and chemically inert. Zealseal™ is also compatible with other construction materials and combined with its resistance to abrasion, oxidation and most chemicals, is ideal as a waterproof, expansion joint material

Key Features

• Capacity for 60% compression (percentages based on initial seal width selection)
• Capacity for 100% horizontal and vertical shear
• Whilst Zealseal has a capacity for 30% tension, this "must not" be used in movement calculations when selecting sizing for Road and Bridge applications. It is recommended that this capacity be kept for a safety factor should a movement calculation exceed the expected +movement.
• Does not support flame and is self extinguishing
• Large temperature operating range with no thermal shrinkage.
• Manufactured in such a way that it is free of toxins, non reactive and chemically inert.
• Weather and UV resistant
• On site welding of joins, intersections, upturns and different seal sizes. (A monolithic waterproof system)
• Quick and easy installation
•Enhanced bond line design increases bond strength to all surfaces. Supplied with approximate 3mm x 3mm bond surface grooves @ 10mm centres.
• Bonded using Zealbond™. (See overleaf for details)
• Cleanup with Zealcleaner™

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Zealseal™ 4000 System

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Zealseal™ Sizing

(For Road & Bridge applications)
The table across is a guide to the sizing and recommended movement ranges. For full details on selecting the correct Zealseal™ size, refer to the Miska data sheet:
"Zealseal Guide to Sizing"

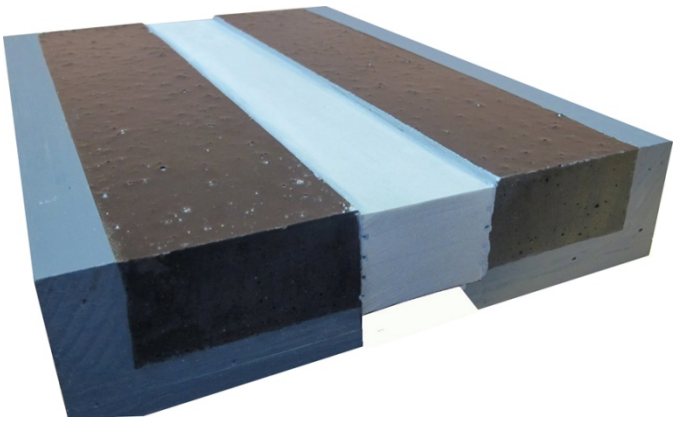
Seal	Seal Width	Seal Height	Nominal Gap Size mm	Minimum Gap mm	Maximum Gap mm
ZS25	25	50	19	10	25
ZS30	30	50	23	12	30
ZS35	35	50	26	14	35
ZS40	40	50	30	16	40
ZS45	45	50	34	18	45
ZS50	50	50	38	20	50
ZS55	55	50	41	22	55
ZS60	60	75	45	24	60
ZS65	65	75	49	26	65
ZS70	70	75	52	28	70
ZS75	75	75	56	30	75
ZS80	80	75	60	32	80
ZS85	85	75	64	34	85

Zealcrete LV™

Zealcrete LV™ is a Fast Setting, , moisture insensitive, 100% solid, low viscosity two-component Epoxy elastomeric concrete. Zealcrete LV™ is designed as an expansion joint header and high impact nosing for Bridge and Roads applications. Zealcrete LV™ is designed to preserve and protect concrete decks and substructures by absorbing impact, preventing water absorbsion and ingress of chemicals and eliminating spalled edges on joint lines.
Note: New Concrete must cure for 10 Days prior to Installing Zealcrete™ LV.

Key Features

- Low viscosity for ease of mixing
- Moisture insensitive
- Fast setting, Gel time 15-20 minutes
- Excellent load bearing characteristics
- Excellent thermal shock resistance
- Waterproof and Chemical Resistant
- High abrasion resistance
- Excellent adhesion to various substrates
- Resistant to UV and ozone exposure
- Resistant to freeze-thaw changes



Zealbond™

Zealbond™ is a 100% solids, moisture insensitive, two component, modified epoxy adhesive designed for bonding Zealseal™ to construction materials including Zealcrete LV™ concrete, steel, wood and other construction materials. Zealbond™ meets ASTM C-881, Type 1 & 11, Grade 2, Class B & C.

Zealcleaner™

Zealcleaner™ is a Zero-VOC Clean up solvent designed to be an industrial grade cleaner that is environmentally friendly. Zealcleaner™ is a low viscosity, water soluble cleaner and degreaser that is an alternative to flammable cleaners and solvents. It will dissolve and aid clean up of most uncured epoxies, urethanes, paints, and other difficult to remove substances. The low evaporation rate allows the product to remain on the surface rather than flashing off into the air, minimizing the required amount for the job. *use white cotton rags.

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Zealseal™ 4000A

Asphalt on Concrete Deck Installation

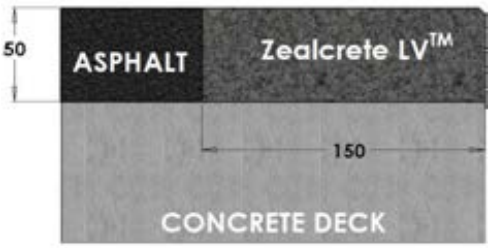
Pictured: Gateway Motorway Brisbane

Sizing for Asphalt on concrete deck application

When the Zealcrete™ LV elastomeric concrete nosing "sits on" the concrete Decking or when the upper surface of the Zealcrete™ is above the upper surface of the concrete decking the nosing aspect ratio, width: depth, must be taken into consideration. Although the top surface of the nosing will be level with the top surface of the asphalt after the installation, the depth of the asphalt and therefore the level of support behind the nosing is a factor that must be considered when sizing the material for the particular project.

Zealcrete™ LV Sizing Guides

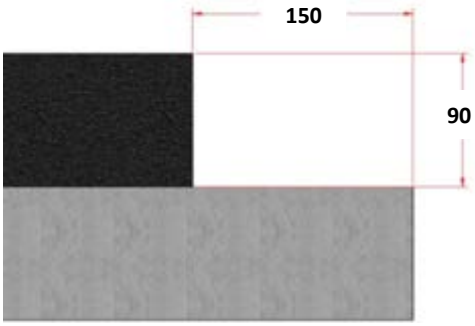
Asphalt Depth at minimum of 50mm



In cases where the asphalt is at a depth of 50mm or less, Miska recommends that the depth of the Zealcrete™ nosing should be maintained at 50mm and the minimum width should be maintained at 150mm wide.

Zealcrete™ sizing at minimum = 50mm Deep x 150mm Wide

Asphalt Depth > 50mm up to 90mm



In cases where the asphalt is at a depth > 50mm and ≤ 90mm the Width of the Zealcrete™ nosing should be maintained at 150mm.

Zealcrete™ sizing = 90mm Deep x 150mm Wide

Asphalt Depth ≥ 90mm

In cases where the asphalt is at a depth ≥ 90mm Deep then an Aspect Ratio (Depth: Width) of **0.6** should be maintained at all times.

Example Sizing Chart: Aspect Ratio - 0.6 = (e.g. 75mm/0.6 = 125mm)

Asphalt Depth mm	**Nosing Depth** mm	**Nosing Width** mm	**Volume of Zealcrete per meter (Litres)** Both sides of Block Out
90	90	150	27.0
100	100	170	33.4
125	125	210	52.5
150	150	250	75.0

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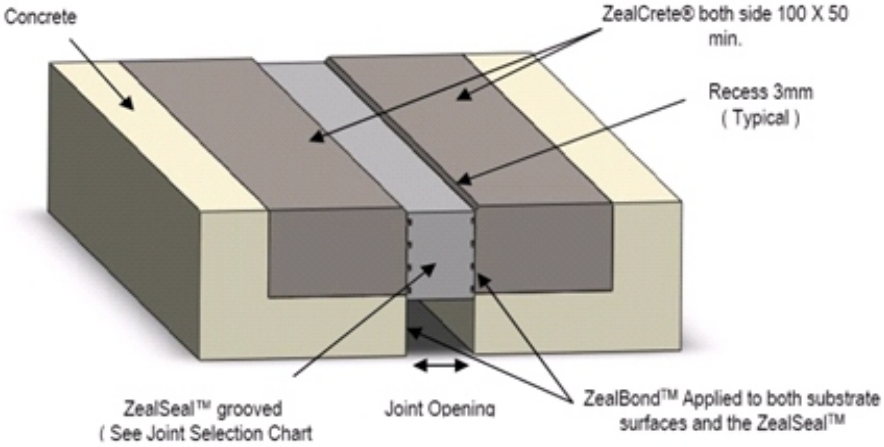
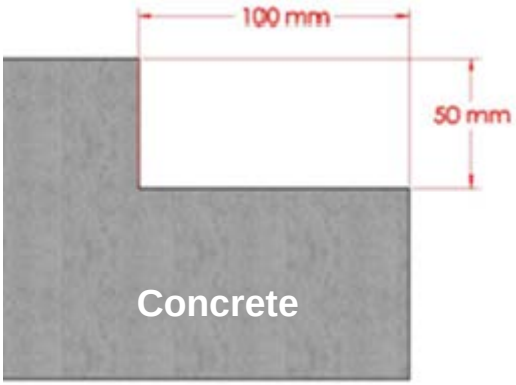
Zealseal™ 4000C
Concrete Blockout Installion

Sizing for Concrete Blockout Installations

When the Zealcrete™ Nosing is fully supported by concrete on both sides of the rebate, with height of the concrete being level with the trafficable surface of the road Miska recommends an aspect ratio (width: height) of 0.5 be maintained.

Minimum blockout size = 50mm Deep x 100mm wide per side. (An Aspect ratio of 0.5 must be retained) 50mm/0.5 = 100mm





Concrete Blockout, Zealcrete LV will be supported by concrete on both sides of the blockout

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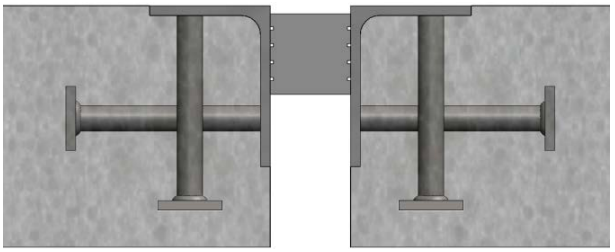
Zealseal™ 4000R
Retrofit Installations



Retrofit Applications

- Retrofit Existing **Steel Armour Nosing** Joint Systems
- Retrofit Existing **Cold Applied Sealant with Backer Rod** Joint Systems

The Zealseal™ seal itself is ideally suited to the repair of existing Steel Armour or Cold Applied Sealant Joint Systems where the armour is structurally sound but the existing seal is leaking causing joint failure and degradation bridge bearings and support structure. Zealseal™ is well suited as a direct replacement for Compression Seals, Water Stops and existing Cold Applied sealant and Backer Rod Systems.
The Zealbond™ bonder is formulated to bond the Zealseal™ to Concrete, Steel, Elastomeric Concrete and many other types of substrates given the correct preparation.

General-
Repair procedures of existing Steel or Elastomeric Concrete armoured joint systems consists of removal of joint seal between armour edges, sandblasting the armour, priming the armour, and installing new Zealseal™ joint seals.

Pictured: William Jolly Bridge Brisbane (Oct 2010)

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