

Dymonic® 100

One Part, High Performance, High Movement, Polyurethane Sealant

Description

Dymonic® 100 is a high performance, high movement, medium modulus, low VOC, UV stable, non-sag polyurethane sealant. Formulated with an innovative polymer technology, Dymonic® 100 is a highly versatile sealant that has a unique capability to adhere to damp or green concrete.

Technical Summary

- Dymonic® 100 is an easy to use, gun-grade polyurethane sealant that is non-sag for ease of installation on vertical and horizontal surfaces.
- No mixing required guaranteeing that Dymonic® 100 is always ready to use for immediate application with conventional caulking equipment.
- The non-sag and high movement characteristics of Dymonic® 100 make it suitable for sealing the most demanding dynamically moving joints.

Application Summary

- Application with conventional caulking equipment.
- Excellent adhesion to most construction substrates without priming.
- Can be used to seal vertical and horizontal joints
- Adheres to damp or green concrete
- Paintable

Typical Applications

Dymonic® 100 is a durable, flexible, paintable sealant that offers excellent performance in moving joints and exhibits tenacious adhesion once fully cured. Typical applications for Dymonic® 100 include:

- Expansion and control joints
- Precast concrete panel joints
- Suitable for lineal and penetration sealing of many common construction substrates, including concrete, steel, aluminium and masonry. For use with other substrates contact Hychem™ Infrastructure Technical Support.
- Suitable for vertical and horizontal applications, including floors.

Product Compliance

ASTM C920 Standard Specification for Elastomeric Joint Sealants Type S, Grade NS, Class 50, Use NT, T, M, A, O, I

AS 4020:2018 – Testing of products for use in contact with drinking water.

Product Data

Characteristic	Result
Appearance	Grey. Special colours available on request.

Advantages

- Can be applied on 24-hour old concrete, allowing for rapid acceleration of the construction time-frame.
- High movement capability of +100/-50% allows Dymonic® 100 to be used in a wide range of high movement expansion joints.
- Low VOC content
- Dymonic® 100 is paintable, providing the building owner maximum flexibility in the exterior façade colour.
- Jet fuel resistant allows Dymonic® 100 to be used in construction/ expansion joints in car parks, fueling stations, and aviation hangars.
- Dymonic® 100 has extreme UV resistance and will not crack, craze or yellow under some of the most extreme UV exposure.
- Tested to and complies with AS 4020:2018 – Testing of products for use in contact with drinking water.

Design Criteria

Dymonic® 100 Joint Sealant is specified as a high performance, best in class movement, medium-modulus, low VOC, UV stable, non-sag polyurethane sealant with +100 / -50% movement capacity.

Compatible Materials

Substrates: Concrete, steel, aluminium, and masonry. For use with other substrates contact Hychem™ Infrastructure Technical Support.

Overlay: Paintable. Confirm compatibility and adhesion prior to painting.

Applicator Material List

Dymonic® 100, caulking equipment, closed-cell backing rod or bond breaker tape (where required).

**One Part, High Performance, High Movement, Polyurethane Sealant****Technical Data**

Samples were prepared and tested in a laboratory at a temperature of 23°C and 50% relative humidity.

Property	Test Method	Typical Values
Skin Time @ 23°C, 50% R.H.	ASTM C679	2 – 3 Hours
Maximum VOC	Method 310	40g/L
% Solids	By Volume	98%
Hardness (shore A)	ASTM C661	40 +/- 5
Weight Loss	ASTM C1246	Pass
Stain & Colour Change	ASTM C510	Pass
Adhesion to Concrete	ASTM C794	6.13 N/mm
Adhesion to Concrete after Immersion	ASTM C794	5.25 N/mm
Adhesion to Green Concrete	ASTM C794	4.38 N/mm
Adhesion to Damp Concrete	ASTM C794	3.50 N/mm
Effects of Accelerated Aging	ASTM C793	Pass
Movement Capability	ASTM C719 Modified	+100% / -50%
Tensile Strength	ASTM D412	2.4 – 3.1 MPa
% Elongation	ASTM D412	800 – 900%
Modulus at 100% Extension	ASTM D412	0.5 – 0.6 MPa
Tear Strength	ASTM D412	0.44 – 0.52 MPa
Crack Bridging	ASTM C1305	Pass
Nail Seal ability	ASTM D1970 Section 7.9	Pass

Application Data

Property	Property Value
Suitable application methods	Caulking by hand
Application temperature	4°C to 37°C
Service Temperatures	-40°C to 82°C
Mixing ratio	No mixing required (single component sealant)
Joint Dimensions	2:1 (width to depth ratio)
Joint Width	6 mm to 40 mm For joints greater than 40mm wide contact Hychem™ Infrastructure Technical Support for advice.
Skin time @ 23°C, 50% R.H.	2 – 3 hours
Tack Free Time @ 23°C, 50% R.H.	6 – 8 Hours
Cure time	2.5mm per day at 24°C and 50% relative humidity.

Joint Dimensions

Dymonic® 100 may be used in vertical or horizontal joints designed in accordance with accepted engineering practices. The recommended joint width-to-depth ratio is 2:1. The joint width is to be a minimum 6 mm and maximum 40 mm. For joints greater than 40mm wide contact Hychem™ Infrastructure Technical Support for advice.

Application Guidelines**Surface Preparation**

All surfaces must be clean, dry, sound & free from dust, oil, rust, release agents or any other contamination. Leave new concrete for a minimum of 24 hours after stripping formwork prior to installation of Dymonic® 100. Solvent should be wiped from the surface with a clean, dry cloth. When used on remedial work, all existing sealant must be removed.





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Joint Backing

After final cleaning, backer rod must be installed to the correct depth. Closed cell polyethylene backer rods are preferred as joint backing to control depth of sealant bead. Where depth of joint will prevent use of joint backing, an adhesive backed polyethylene tape must be installed to prevent three side adhesion. Install backer rod to the correct depth required. Joint backing must be dry at time of sealant application. Backer rod diameter should be approximately 25% greater than the joint width to ensure snug fit & seal in joint for subsequent sealant.

Priming

Dymonic® 100 typically adheres tenaciously to common construction substrates without primers.

A field adhesion test should be performed on the actual materials being used on the job to confirm adequate adhesion to each substrate type and condition. This test is to be performed prior to commencement and every 300 lineal metres. Where a primer may be required to promoting adhesion contact Hychem™ Infrastructure Technical Support for advice on suitable primers.

Mixing

As a single component sealant, Dymonic® 100 does not need any mixing prior to the application.

Placement

Ensure that the backer rod is friction fitted properly or bond breaker tape has been installed and any primers required have been applied. Slide the sealant into the applicator gun, cut off the very end of the sealant packaging and fit the gun with the nozzle that has been cut to deliver the right bead size. Extrude the Dymonic® 100 sealant into the joint, ensuring that no air is trapped in the joint. Fill the joint completely with a proper width-to-depth ratio (2:1), and tool to ensure intimate contact of sealant with joint walls. Tooling the sealant is recommended immediately after the application of the sealant. Dry tooling is always preferred. For a cleaner finish, mask the sides of the joint with tape prior to filling.

Curing

Dymonic® 100 generally cures at a rate of 2.5mm per day at 24°C and 50% relative humidity. Dymonic® 100 will skin in 2 hours and be tack free in 6-8 hours. The cure time will increase as temperatures and/or humidity increases.

Cleaning

Excess sealant and smears adjacent to the joint interface can be carefully removed with xylene (also known as xylol) before the sealant cures. Any utensils used for tooling can also be cleaned with xylene (also known as xylol), mineral spirits or white spirits. Clean hands with acetone or other mild solvent then brushing with a stiff-bristle brush. Water will accelerate the curing of the Dymonic® 100.

Quality Control

The execution of the work shall be carried out in accordance with the project quality plan.

Limitations

Dymonic® 100 is not recommended for:

- Natural rubbers such as EPDM, PVC or TPO
- Use on bitumen will result in discolouration.
- Allow to fully cure prior to installation of nearby silicones.
- Use with adequate ventilation.
- Use in chlorinated, heavy or waste water.

If any doubts arise concerning suitability for use, application temperature or substrate conditions, contact Hychem™ Infrastructure Technical Support for advice.

Estimating

Approximate Lineal Metres per 600ml Sausage

DEPTH	WIDTH			
	10mm	15mm	20mm	25mm
5 mm	12m	-	-	-
10mm	-	4m	3m	2.4m
15mm	-	-	-	1.6m

Packaging

600ml sausages (20 x 600ml sausages per carton)

Storage & Shelf Life

12 months when stored as recommended in original unopened packaging. Store in a dry cool place in original unopened packaging.





Safety

In an emergency, contact 000, the Poisons Information Centre (13 11 26 within Australia) or a doctor for advice. Please refer to the current SDS (Safety Data Sheet) and follow the prescribed safety precautions and handling procedures for the product.

Warranties and Disclaimers

Hychem™ warrants that this product shall conform to the technical specifications published in the product literature. The quality and fitness of the product are dependent upon its proper use and application by the applicator. Hychem's role is limited to the manufacture and supply of the product and its components and does not extend to supervision or control of its application. It is vital that the person applying this product understands its properties and limitations and is appropriately trained and competent in the use of the equipment, methods and materials associated with its application. There are no warranties that extend beyond the description contained herein, except where provided in writing directly by Hychem™ and executed under seal by a company officer.

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