

SUPERSWELL® 47B

HYDROPHILIC BUTYL WATERSTOP SEAL

Hydrostatic head pressure resistance of 7.5 Bar (75 metres)



PRODUCT DESCRIPTION

Superswell® 47B Hydrophilic Butyl Waterstop Seal is a unique sealing compound which expands in a controlled fashion when exposed to moisture, forming a compression seal in concrete joints. **Superswell® 47B** is ideal for use in horizontal and vertical construction joints for cast in-situ concrete structures.

Superswell® 47B is manufactured utilising a specialised mixing process which encapsulates hydrophilic materials into a Butyl base creating a controlled, moisture-activated seal. The product has the structural integrity and the long term durability features of Butyl, as well as the ability to expand to create a SELF-HEALING JOINT WATERSTOP SEAL.



Unlike many of the traditional clay-based products, **Superswell® 47B** being hydrophilic polymer based, will not expand to a point that the hydration process itself leads to the possible “disintegration” of the waterstop due to its expansion control system. This is an important issue when the engineers are looking for a seal in vertical construction joints where the joint can open due to excessive shrinkage in the concrete. In-field experience has proven that products which continually expand, may lose their structural integrity and begin to wash away from the joint when subject to a constant flow of water or from high water pressure.

Superswell® 47B does not expand prematurely from the wet weather due to its unique expansion control system which also means it doesn't expand from the water in the fresh concrete when poured against it, which helps minimize any pre-expansion if the joint becomes ponded with water. **Superswell® 47B** is very unique in that it can be installed by embedding it into wet concrete of the first pour as the concrete upon drying bonds very well to the Butyl Seal.

Due to its Butyl properties, it bonds to both concrete surfaces (1st and 2nd pour) creating a gasket seal first, when used in conjunction with CJ-100 Adhesive. The wet concrete from the 2nd pour bonds tenaciously to **Superswell® 47B**.

Superswell® 47B has been tested to withstand a 75 metre (7.5 Bar) head of water pressure in potable water and 60 metre (6.0 Bar) in salt water conditions and can expand up to 180% after 30 days of continual submersion in distilled water.

Superswell® 47B complies to NSF/ANSI Standard 61 Drinking Water System Components - Health Effects, ensuring **Superswell® 47B** is safe for use in drinking water applications. Therefore, it is suitable to use in various potable water retaining structures like water tanks, swimming pools and reservoirs.

Note: The product's design and performance, its intended use, installation and final confirmation and approval for use, must be provided by the project's Design Engineer and Project Manager.



ADVANTAGES

- Conforms easily for installation onto rough or smooth concrete surfaces.
- Excellent adhesion to concrete with CJ-100 Adhesive.
- Allows concrete to gain strength before expansion due to built-in expansion control system.
- For use in horizontal and vertical construction joints.
- Long term durability & integrity.
- Can be bedded into the wet concrete of the first pour for installation.
- No compaction or displacement problems.
- Unaffected by repeated wet and dry cycles.
- Has the ability to bond to both concrete surfaces.
- No on-site welding required.
- Can withstand 75 metres (7.5 Bar) of hydrostatic head pressure.
- Ability to handle long-term exposure to the environment prior to the 2nd pour taking place.
- Non-toxic and requires no special handling.
- NSF Certified for use in potable water applications.
- Very easy to handle and install.



PHYSICAL AND PERFORMANCE PROPERTIES

DESCRIPTION	TEST METHOD	RESULTS
Base Material		Butyl
Colour		Black
Size (mm)		25 x 19
Specific Gravity	ASTM D-71	1.40/1.45
Hydrocarbon Content (%)	ASTM D-297	47 min.
Volatile Matter (%)	ASTM D-6	1 max.
Penetration, cone @ 77F, 150gm, 5 sec	ASTM D-217	43 - 46 dmm
Hydrostatic Head Pressure Resistance		75 metre (7.5 Bar)
Volume Expansion in Water		180% at 30 days
Application Temperature (°C)		-22 to +52
Service Temperature Range (°C)		-34 to +82

Note: The above Physical Property results are obtained from our internal Certificate of Analysis (COA) testing from a specific batch. Material properties can vary between batches.

Note: The hydrostatic head pressure resistance and volume expansion in water test results (as stated above) are obtained from independent laboratory tests. A copy of these test reports are available upon request.



PACKAGING & DIMENSIONS

Superswell® 47B - 25mm x 19mm x 5m rolls
(6 rolls per carton = 30 metres per carton)

CJ 100 Adhesive - 1 litre & 3.6 litres per tin
Note: Coverage Approximately 20 - 30 metres per 1 litre





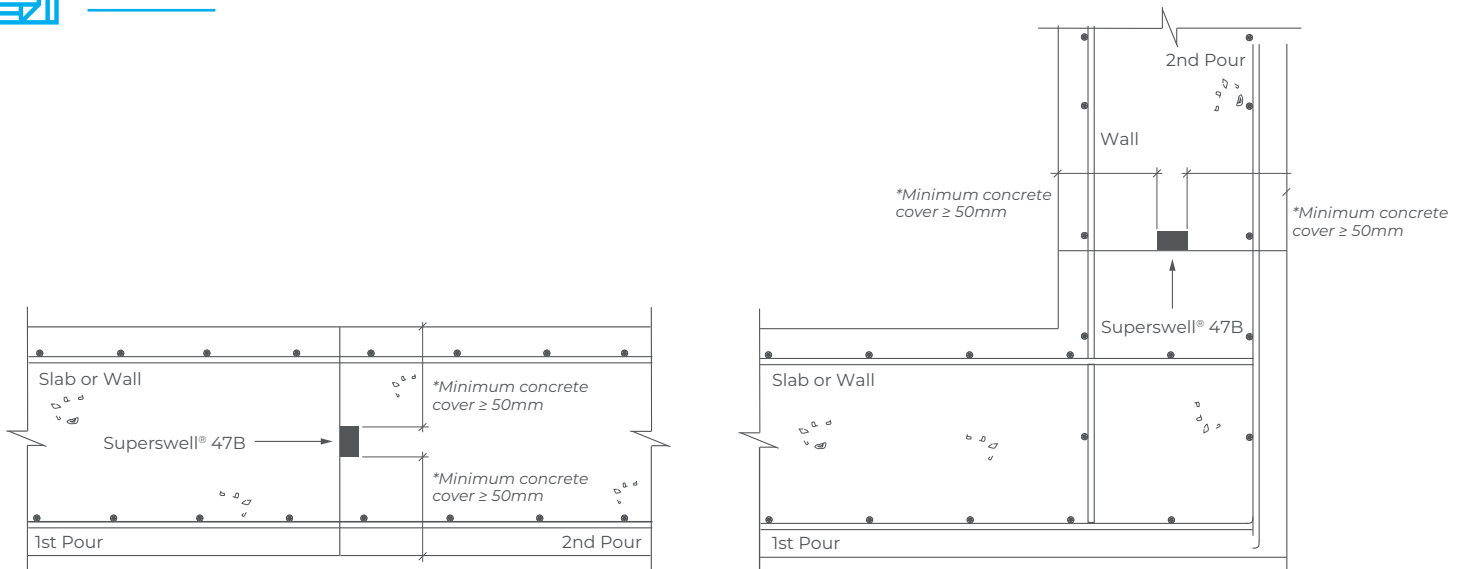
AREAS OF APPLICATION

Water Retaining Structures	Water Excluding Structures	Others
Water tanks	Basements	New to old concrete
Reservoirs	Underground structures	Poured in-situ construction joints
Dams	Tunnels	Roof slabs
Spillways	Subways	Suspended slabs
Sewage treatment plants	Retaining walls	Above & below ground precast panels (check with Corkjoint & your Engineer)
Water treatment plants	Pits	
Swimming pools	Manholes	
Box culverts		
Bund walls		

Note: The product's design and performance, its intended use, installation and final confirmation and approval for use, must be provided by the project's Design Engineer and Project Manager.



TYPICAL APPLICATIONS



SLAB ON GROUND OR WALL

SLAB TO KICKER IN WALL

Note: Refer to above minimum concrete cover requirements. Please refer to **CORKJOINT** for further information.

Note: Superswell 47B has been tested to resist a hydrostatic head pressure resistance of 7.5 Bar (75 metres) with a minimum concrete cover of 50mm, using grade 40 MPA compressive strength concrete, without steel reinforcement being positioned on the outside of the product, and there was no concrete cracking observed due to the expansive forces of the product



NOTES

Due to expansive forces, **Superswell® 47B** should be both detailed and installed with a minimum 50mm clear cover to the face of the concrete and placed on the inside of the steel reinforcement. If high strength concrete is used, 40MPa or greater, then Superswell 47b can be installed on the outside of the steel reinforcement using a minimum of 50mm of concrete cover. Expansion rate can vary in salt and contaminated water. Increase cover when using light weight, low strength concrete. Not for use where excessive shrinkage of the concrete may occur at the joint faces. Do not stretch the **Superswell® 47B** during installation. Not for use in movement (expansion, isolation and contraction) joints.



HYDROSTATIC HEAD PRESSURE RESISTANCE - 75 METRE (7.5 BAR)



Test Apparatus

1. Superswell® 47B has been tested in potable water to withstand a hydrostatic head pressure resistance of 75 metres (7.5 Bar) and tested in salt water to withstand a hydrostatic head pressure resistance of 60 metres (6.0 Bar) without any water leakage or loss of pressure.
2. The above tests were conducted by an independent testing laboratory and a copy of the test reports are available upon request.

EXPANSION RATE PROPERTIES - 30 DAY IMMERSION DURATION

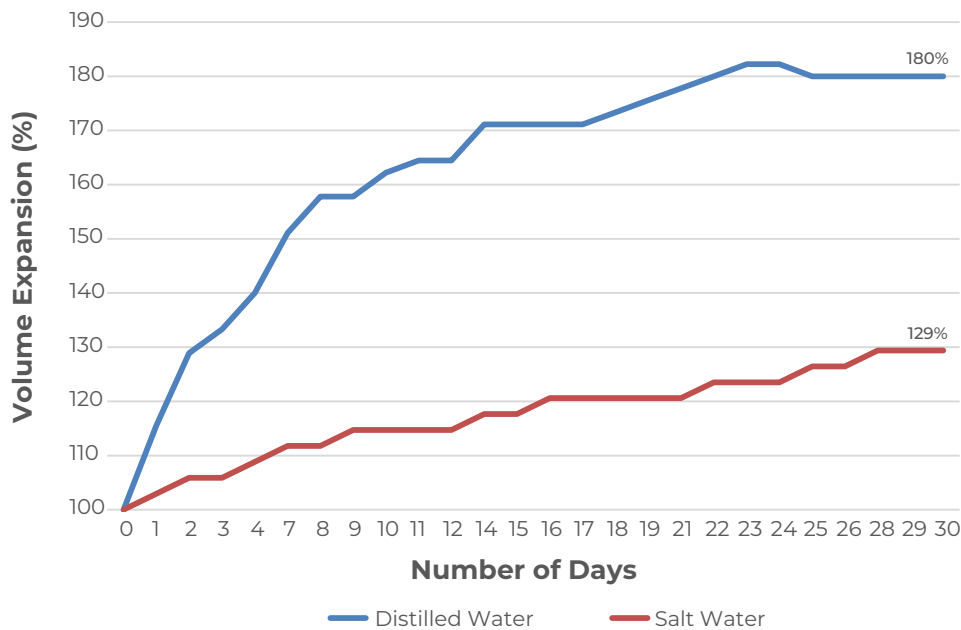


Figure 1 : Expansion rate properties of Superswell® 47B in various solutions

- Note:
- 100% indicates original size.
 - Expansion can vary between batches of up to 10% - 20%.
 - The above test reports are available upon request.



INSTALLATION PROCEDURES

Superswell® 47B requires a minimum 50mm cover of concrete from the outside edge.

1. Brush off any dust or debris from the surface where the **Superswell® 47B** is to be applied. Brush a coat of CJ-100 Adhesive 30mm wide onto the concrete surface and one coat to the surface of the **Superswell® 47B**.
2. Once both surfaces where the adhesive was applied are touch dry, with the use of your thumbs or heel of your hand, firmly press a continuous bead of **Superswell® 47B** into position, making sure you achieve full contact with the adhesive on the concrete surface. Do not stretch the **Superswell® 47B** when applying it into position.
3. Use a neat, firm butt joint to join **Superswell® 47B** together and then knead the ends together to form a continuous uninterrupted gasket. This type of joint is used for continuous placement of **Superswell® 47B** and for any intersection joints.
4. Check to see that the **Superswell® 47B** has totally adhered to the concrete surface. If the surface is rough or irregular, you may need to use a firmer hand pressure to make sure that the **Superswell® 47B** has full contact with the surface. There must be no visible gaps under the **Superswell® 47B** after installation.
5. The protective paper layer cover on the **Superswell® 47B** can be removed any time prior to the second pour of concrete taking place.
6. Placement of the second pour of concrete can be applied once the CJ-100 Adhesive has dried. Upon pouring, make sure the concrete is properly compacted and vibrated around the **Superswell® 47B**.
7. If the **Superswell® 47B** has been exposed to water (moisture) prior to the second pour taking place, check for pre-expansion. If the product has pre-expanded, then remove that section and replace with a new length of **Superswell® 47B**.
8. For vertical construction joints and overhead applications, it may be necessary to also secure the **Superswell® 47B** with nails, placed approximately every 250mm apart. This is usually only required as extra security if you need to pour your concrete prior to the CJ-100 Adhesive drying completely.



STEP 1:

Superswell® 47B is to be adhered to the 1st pour of concrete with Corkjoint CJ-100 Adhesive. A clean, dry surface free from dust, debris, etc, is required. Apply one application of adhesive onto the concrete surface and one application onto one side of the **Superswell® 47B**.



STEP 2:

Once both surfaces are touch dry, lay the **Superswell® 47B** into position and push firmly down with your fingers. If the surface is rough then you may need to use a firmer hand pressure to make sure that the product has full contact with the surface of the concrete.



TEST REPORTS - INDEPENDENT LABORATORY

- Exposure & Water Immersion Expansion in Potable Water
- Hydrostatic Head Pressure in Potable Water - 75m (7.5 Bar)
- Water Immersion Expansion in Salt Water with 5 dry and wet cycles
- Hydrostatic Head Pressure in Salt Water (5% NaCl) - 60m (6.0 Bar)
- National Sanitation Foundation (NSF) Certification for Potable Water Use

Note : The above test reports are available upon request.



WRITTEN SPECIFICATION

Waterstops where shown on the drawings shall be **Superswell® 47B** controlled expansion waterstop as supplied by **CORKJOINT**. The waterstop is to have a built-in expansion control system to minimise any pre-expansion prior to the second pour taking place and be able to withstand up to 75 metres (7.5 Bar) hydrostatic head pressure resistance. The waterstop is to be placed in accordance with the manufacturer's installation guidelines, and the Design Engineer's specification.



HEALTH AND SAFETY INFORMATION

In confined spaces or in still air conditions, the use of a ventilation fan or suitable respirator should be used, and the advice and approval of the Site Safety Supervisor is essential. For further information or advice on health and safety precautions, safe handling, storage and correct disposal of products, please refer to the most recent product Safety Data Sheet (SDS), which is available upon request.



DISCLAIMER

The information and the recommendations relating to the application and end use of this product are given in good faith and are based on the information provided by the manufacturer of the product and/or the Company's current knowledge and experience in connection with the product when properly stored, handled and applied under normal conditions and no liability of final function at the job site is assumed. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability of, or fitness for, particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written and/or oral recommendations, or from any other advice offered by the Company. The Company also has no express or implied knowledge of any particular purpose for which the product is required and any such information given will not be taken into account in the supply of this product. No responsibility or liability by the Company will be accepted for misuse, misreading or derivation from recommended guidelines in respect of this product and the user shall determine the suitability of the product for his intended use and assume all risks and liability in connection therewith. The information contained in our brochure may change at any time without notice. Any use of this product, **Superswell® 47B**, in any application should be approved as suitable for use/application by the Design Engineer and Project Manager.

Effective Date: 18 SEPTEMBER 2023

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