TECHNICAL
DATA SHEET

WILLSEAL® 250

Horizontal Seal with
Traffic Grade Silicone

PRODUCT DESCRIPTION:

Willseal® 250 is a pre-compressed, self-expanding open micro-cell polyurethane foam impregnated with a hydrophobic, acrylic polymer sealing compound coated with a factory-applied silicone sealant. It is designed to provide a watertight, dust-proof, airtight, noise-reducing, thermally insulating, and UV stable primary seal that does not require invasive anchoring for installation.

BASIC USES:

Typically used as an external joint sealant, engineered to perform in horizontal applications subject to solvents and fuels such as those found in parking garages, road and bridge joints, and airport runways. Acceptable applications for Willseal 250 include primary horizontal expansion for vehicular traffic, primary horizontal expansion for pedestrian traffic, parking garages, stadiums, plaza decks on grade, airport taxiways and runways.

FEATURES & BENEFITS:

Willseal 250 is specifically designed to provide a maximum seal in structures with shear and rapid movement.

- Allows for up to 100% (± 50%) movement
- Accommodates rapid rates of joint movement
- Has excellent compression recovery
- Utilises non-invasive anchoring
- Not based on wax, asphalt or bitumastic impregnation
- Monolithic construction – no unbonded laminations

Willseal 250 is supplied in a pre-compressed state for ease of installation. Material will self-expand to fill the joint. Expansion time will vary based on humidity, temperature, and storage conditions for the prior 24 hours; may differ for wider, thicker material. Material will continue to expand and equalise in the joint.

AVAILABILITY:

Available in joint sizes from 12mm to 150mm sticks (1.98m lengths) from your authorised Tremco distributor, or any Tremco or Willseal Sales Representative. For more information, contact StonCor Africa Technical Services Department.

COLOURS:

Willseal 250 is available in Concrete Grey, Highway Grey, and Traffic-Grade Black.

LIMITATIONS:

For any gap wider than 75mm, a cover plate is required. Consult a Tremco or Willseal Sales Representative for additional information.

Avoid contact of Willseal 250 with hydrocarbon solvents, solvent-based paints, and corrosive chemicals. Will not adhere to surfaces contaminated by oil or grease. Concrete should be clean, dry and sound. Do not install when substrate or

ambient temperatures are below 4°C or above 35°C. Consult a Tremco or Willseal Sales Representative for extreme temperature installation information.

Store material in a dry, enclosed area, off the ground, and out of direct sunlight. Store material at a minimum of 20°C. If ambient storage temperatures fall below 10°C, warm material up to 20°C for a minimum of 24 hours prior to installation, regardless of temperature at location of installation.

Joints must be sized by measuring every 1.5m to 2.1m to ensure gap opening is uniform and depth is sufficient for the supplied material.

TYPICAL PHYSICAL PROPERTIES:

PROPERTY	TEST METHOD	TYPICAL RESULTS
Foam Colour		Black
Temperature Stability Range		-40°C to 80°C
Ideal Storage Temperature		20°C
UV Resistance	DIN 18542	Pass
Ultimate Elongation		Exceeds rates maximum extension without tension
Surface Temperature Range	ASTM C711	-40°C to 87.7°C
Silicone Elongation		Never under tension and exceeds maximum movement range (> 1000%)
Silicone Flexibility		Excellent
Resistance to Compression Set	Full cycle tested in an environmental chamber through the state temperature stability range	No bleeding when compressed to minimum of claimed movement of normal size and when simultaneously heated to 87°C for 3 hours
Compression Set	Full cycle tested in an environmental chamber through the state temperature stability range	Will not delaminate due to thermal shock or compression set

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APPLICATION INSTRUCTIONS:

1. PURPOSE:

1.1. The purpose of the application instructions is to establish typical guidelines for installation of Willseal 250. The techniques involved may require modifications to adjust to jobsite conditions. Consult your local Willseal or Tremco Sales Representative or StonCor Africa Technical Service Department for specific design requirements.

2. SCOPE:

2.1. This document will provide the necessary instructions for installation of Willseal 250.

3. APPROVED SEALANTS:

3.1. Recommended material for use with Willseal 250:
   a) Spectrem 800

3.2. Follow recommended sealant dimension guidelines on the appropriate Tremco Data Sheet.

4. STORAGE:

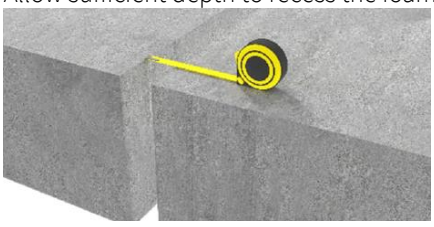
4.1. Store materials in a dry, enclosed area, making sure materials are off the ground and out of direct sunlight.

4.2. Material will expand faster when hot and slower when cold. In cold temperatures, store material in a heated area 24 hours prior to installation. If hot temperatures, store material out of direct sunlight and not in an enclosed storage container where temperatures may exceed 38°C.

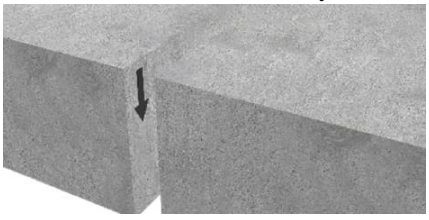
5. MATERIAL SIZING:

5.1. Joints must be sized every 1.5 to 2.1m to ensure gap opening is uniform. See Ref 1.

5.2. Allow sufficient depth to recess the foam material a minimum 12 to 18mm into the joint. See Ref 2.



Ref 1 – Measure gap opening every 1.5 to 2.1m



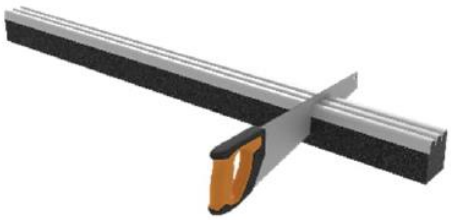
Ref 2 – Ensure depth of 12 to 18mm foam recess minimum

6. MATERIAL PREPARATION:

6.1. Store material at a minimum of 20°C for a minimum of 24 hours prior to installation, regardless of temperature at location of installation.

6.2. Cutting material:
- a) Use a miter saw to make any cuts to the material before removing the clean shrink packaging. All starting and ending pieces must be square to the termination point. See Ref 3.
- b) Use a sharp foam knife to cut the material once the clear shrink packaging and wooden boards have been removed. Apply mineral spirits to the knife for a smoother cut. See Ref 4.
- c) Install immediately after removing shrink wrap and making final cuts to prevent expansion past the joint size.

Ref 3 – Measure & cut before removing shrink wrap



Ref 4 – Cut with foam knife after packaging removed

7. SUBSTRATE PREPARATION:

7.1. Verify that the joint is clean, sound, and will provide an appropriate surface for installation of the joint sealant.
- a) Use compressed air to clean any loose debris from the joint.
- b) Apply MEK Solvent to a clean cloth and wipe the joint walls to the depth of the sealant material plus 25mm.

7.2. Verify that the joint is uniform and repair any damages or irregularities prior to installation.
7.3. Check the material for appropriate length, width and depth.
7.4. Supplied material should be pre-compressed to a size smaller than the intended joint opening.
7.5. Joint depth must allow for the installed material to be recessed 6mm from the substrate surface.
7.6. Apply duct tape to the substrate surface butting up to the joint opening. This will assist in keeping the substrate clean in case epoxy is inadvertly applied over the edge of the joint.

8. EPOXY PREPARATION:

8.1. Mixing:
- a) Pre-condition Dural 617NS Epoxy Adhesive material to between 10°C and 23°C before using. Pre-mix each component of the kit. Add the Activator component to the Base component and mix thoroughly for 3 minutes with a slow speed drill fitted with a stirrer. Do not aerate or mix more material than can be placed in 30 minutes.

8.2. Epoxy Tips:
- a) Application temperature of substrate to be 4°C and rising. Low temperatures adversely affect application spread rates and time to achieve bond.
- b) Hot temperatures decrease working time.
- c) Do not apply over free standing water.
- d) Do not thin with solvent.
- e) Minimum age of concrete must be 28 days.
- f) Use materials in strict accordance with the manufacturer's Safety Data Sheet.

9. SEALANT INSTALLATION:

9.1. Begin installation at one end of the joint and work across to the opposite end using butt seams. See Ref 5.

9.2. When fully prepared to install, apply a 1.6 to 3.2mm coating of the epoxy mixture to both joint walls using a 25mm margin trowel starting 6mm from the joint surface to a depth of the sealant plus 12mm. See Ref 6.

a) The epoxy must still be wet upon installation of Willseal 250. The working time for epoxy is approximately 30 minutes depending on the temperature.

b) If the epoxy hardens on the surface of the substrate before installation, another coat of epoxy can be applied within 2 hours. After 2 hours, the substrate surface must be abraded to eliminate the amine blush that occurs during the final cure.

9.3. When fully prepared to install, cut the shrink packaging along the edge of the Masonite strapping. See Ref 7.

a) Be prepared to install material immediately once the packaging is removed to prevent the material from expanding past the joint width.

9.4. Verify that the material is cut square at both ends for proper seams; all pieces must be square to the termination point.

9.5. Pay attention to the direction of insertion marked on the packaging.

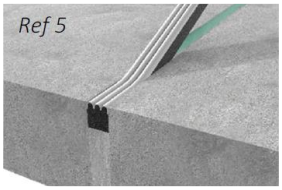
9.6. Remove the release liner on both sides of the Willseal 250. See Ref 8.

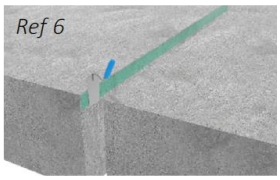
a) Make sure not to pull, twist, or stretch the material in the process of installation to avoid tearing the release liner.

9.7. Initially, position Willseal 250 3.2mm above the deck surface. Once the material is partially expanded in the joint, it can then be installed to 12 to 18mm below the surface of the joint using a putty knife or margin trowel. See Ref 9.

a) Wedges can be used to aid in installation.

b) Remove wedges once the material begins to expand and before the epoxy cures.


Ref 5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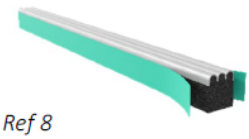
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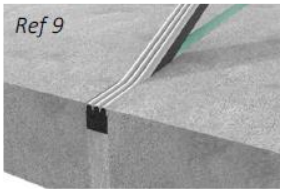
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10. SEAMS AND FINISH:

10.1. Verify that the new piece of material is cut square and not at an angle to the previous piece installed.

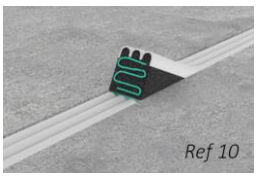
10.2. Apply flexible sealant to the butt end of the new piece of material. See Ref 10.

a) Do not apply sealant to the faces of the product that are in contact with epoxy.

10.3. Overlap extra material approximately 6.3mm at seams and splices to ensure that the seam is in compression after installation. See Ref 11.

10.4. Make sure seams are flush against each other and then push the pieces together. See Ref 12.

10.5. Butt seam all "T" and "+" intersections. If there are any mitred joints with a hole or void, use the supplied flexible sealant to fill and seal the joint.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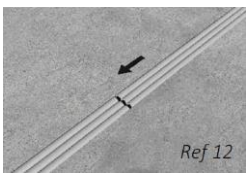
Ref 11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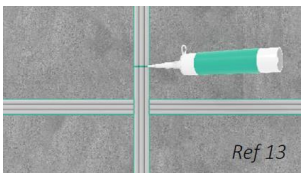

Ref 13

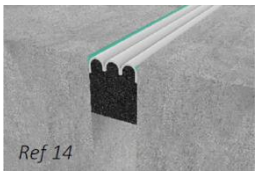
10.6. Apply recommended silicone sealant over seams and intersections. See Ref 13.

a) If crew size permits and two lengths of material can be prepared, the ends to be seamed can be held above the deck surface and the mitred pieces can be pushed down into the joint together.

10.7. Remove duct tape.

10.8. Apply and tool finishing bead with recommended silicone sealant. See Ref 14 and Ref 15.

10.9. Remove any excess flexible sealant or epoxy left on the surface of the material substrate. Do not allow the excess flexible sealant or epoxy to cure on surface.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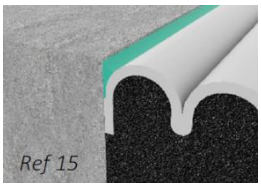
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11. MAINTENANCE:

11.1. Semi-annual maintenance is recommended for best results. Follow the Willseal Horizontal Stick Maintenance Procedure available online via tremcosealants.com. Contact StonCor Africa Technical Service Department with any questions.

12. LIMITATIONS:

12.1. Do not install Willseal 250 when substrate or ambient temperatures are below 4°C. Do not install when raining or snowing. If ambient storage temperatures re below 10°C, store material at a minimum of 20°C for a minimum of 24 hours prior to installation, regardless of temperature at location of installation. Store materials in a dry, enclosed area, off the ground, and out of direct sunlight.

12.2. Joints must be sized by measuring every 1.5 to 2.1m to ensure gap opening is uniform and depth is sufficient for the supplied material. Willseal 250 will not adhere to surfaces contaminated by oil or grease.

12.3. This product is not intended for the following:

- Joints continuously submerged in water
- Joints in continuous contact with harsh chemicals
- Joints in roofing applications or areas with occupied space