TECHNICAL
DATA SHEET

WILLSEAL® 250-R

Reinforced Horizontal Seal with
Traffic Grade Silicone

PRODUCT DESCRIPTION:

Willseal® 250-R is a patent-protected expansion joint system that combines the performance and reliability of Willseal 250 with reinforcing membranes positioned beneath the sealant face to support higher point loads. This allows Willseal 250-R to excel at supporting high rates of pedestrian foot traffic.

Willseal 250-R consists of 3 construction elements: a pre-compressed foam core saturated with a hydrophobic acrylic emulsion, a factory applied coating of highway grade, fuel resistant silicone (other coatings available by special order), and a factory-incorporated reinforcing membrane positioned beneath the sealant face.

BASIC USES:

Willseal 250-R has been engineered to perform in horizontal applications and excels in high foot traffic areas. This unique reinforced foam can be used in both interior and exterior joints. Acceptable applications for Willseal 250-R include primary horizontal expansion for vehicular traffic, primary horizontal expansion for pedestrian traffic, parking garages, stadiums, plaza decks, skyways, mall entrances, hospitals, and concourses.

FEATURES & BENEFITS:

Willseal 250-R is specifically designed to provide a maximum seal in structures with shear and rapid movement. The reinforced members provide stability across the joint under pedestrian traffic.

- Positioned reinforcing members provide increased point load capability
- Ideally suited to handle heavy pedestrian traffic
- Surface load transfer
- Allows for up to ± 50% movement
- Accommodates rapid rate of movement
- Excellent compression recovery
- Utilises non-invasive anchoring
- Innovative patented design

Willseal 250-R 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 25mm to 100mm 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:

Available factory coated with traffic-rated silicone sealant in Concrete Grey, Highway Grey and Traffic-Grade Black. For more information, contact StonCor Africa Technical Service Department.

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LIMITATIONS:

Avoid contact of Willseal 250-R 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. 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.

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	ASTM C793 ASTM G155 DIN 18542	Pass Pass Pass
Ultimate Elongation		Exceeds rated maximum extension without tension
Surface Temperature Range	ASTM C711	-40°C to 87.7°C
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
"Walking Feel" Deflection Resistance at 12mm	Compared to 3 industry standard samples	250-R at 18.18kg vs Industry standard samples average at 5.7kg

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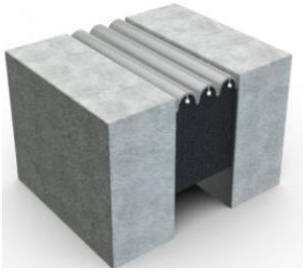
APPLICATION INSTRUCTIONS:



1. PURPOSE:

1.1. The purpose of the application instructions is to establish typical guidelines for installation of Willseal 250-R. 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-R.

3. APPROVED SEALANTS:

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

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

4. STORAGE:

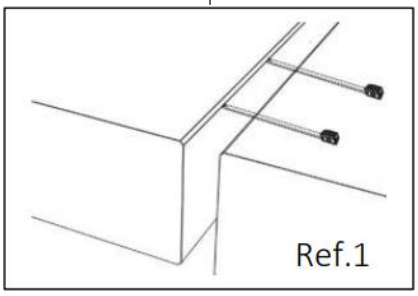
4.1. Store materials in a dry, enclosed area, making sure materials are off the ground and out of direct sunlight.

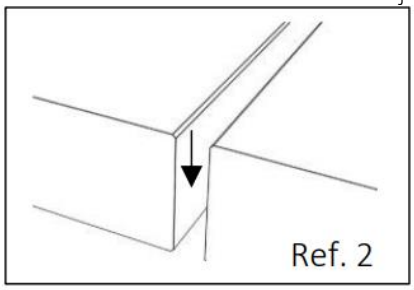
4.2. Material will expand faster when hot and slower when cold. In cold temperatures, store material in a heated area 24 hours prior to installation. If hot temperatures, store material out of direct sunlight and not in an enclosed storage container where temperatures may exceed 37.8°C.

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 3 to 6mm into the joint. See Ref 2.





6. MATERIAL PREPARATION:

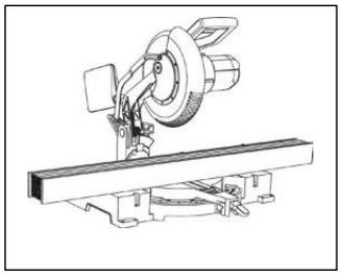
6.1. Store material at a minimum of 20°C for a minimum of 24 hours prior to installation, regardless of temperature at location of installation.

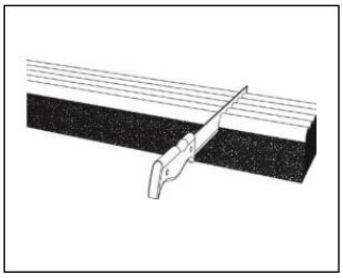
6.2. Material will expand faster when hot and slower when cold. In cold temperatures, store material in a heated area 24 hours prior to installation. In hot temperatures, store material out of direct sunlight and not in an enclosed storage container where temperatures may exceed 37.8°C.

6.3. Cutting material – Stick material:

a) Use a miter saw to make any cuts to the material before removing the clear shrink packaging. All starting and pieces must be square to the termination point. See Ref 3.

b) For 250-R they will need to cut to length with a miter saw because of the reinforcing members.





c) In order to prevent expansion past the joint size, install immediately after removing shrink wrap and making final cuts.

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 alcohol 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 6.4mm 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. APPLICATION PROCEDURES:

9.1. Begin installation at one end of the joint and work to the opposite end using butt seams. See Ref 1.

9.2. When fully prepared to install, apply at 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 material plus 12mm. See Ref 2.

- The epoxy must still be wet upon installation of Willseal 250-R; the working time for epoxy is approximately 30 minutes depending on the temperature.
- 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 3.

- 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.

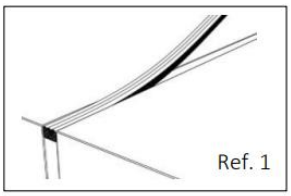
9.5. Pay attention to the direction if insertion marked on the packaging.

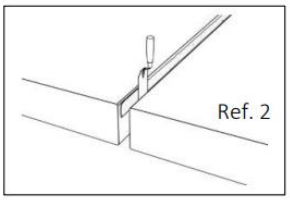
9.6. Be prepared to install the material immediately once the packaging is removed to prevent the material from expanding past the joint width.

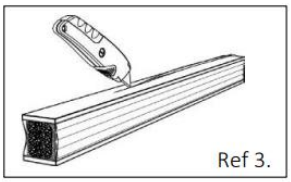
9.7. Remove the white release liner on both sides of the Willseal 250-R. See Ref 4.

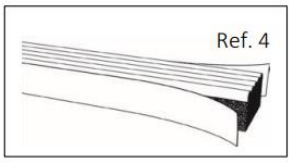
9.8. Make sure not to pull, twist or stretch the material in the process of installation to avoid tearing the white release liner. Initially, position Willseal 250-R 3.2mm above the deck surface. Once the material is partially expanded in the joint, it can then be installed to 6.4mm below the surface of the joint using a putty knife or margin trowel. See Ref 5.

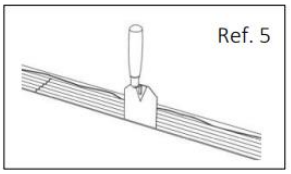
- Wedges can be used to aid in installation.
- Remove wedges once the material begins to expand and before the epoxy cures.











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 supplied joint splice adhesive to the butt end of the new piece of material. See Ref 1.

- Do not apply joint splice adhesive to the faces of the product that are in contact with the sidewall adhesive.

10.3. Overlap extra material approximately 12.5 to 25mm at seams and splices to ensure that the seam is in compression after installation. See Ref 2.

10.4. Make sure seams are flush against each other and then push the pieces together. See Ref 3.

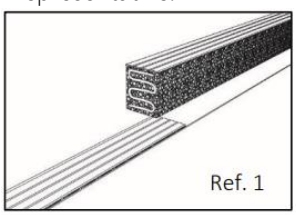
10.5. Butt seam all "T" and "+" intersections. If there are any mitred joints with a hole or void, use the supplied flexible seal to fill and seal the joint.

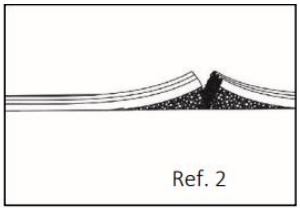
10.6. Apply flexible seal over seams and intersections. See Ref 4.

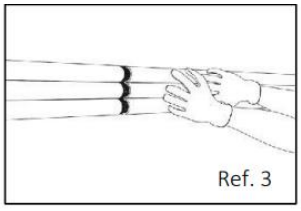
10.7. If crew size permits and two lengths of material can be prepared, the ends to be seamed can be held above the deck surface and the mitred pieces can be pushed down into the joint together.

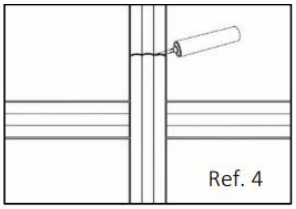
10.8. Apply a 6.4mm bead of the supplied traffic rated silicone along the seams where the foam meets the joint wall on both sides of the joint. See Ref 5.

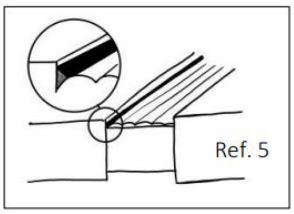
10.9. Remove duct tape.
10.10. Remove excess flexible seal or epoxy left on the surface of the material substrate. DO NOT allow the excess flexible seal adhesive or epoxy cure.
10.11. For more information on the following materials, please contact your local Willseal or Tremco Technical Sales Representative.











11. MAINTENANCE:

11.1. 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-R 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-R 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