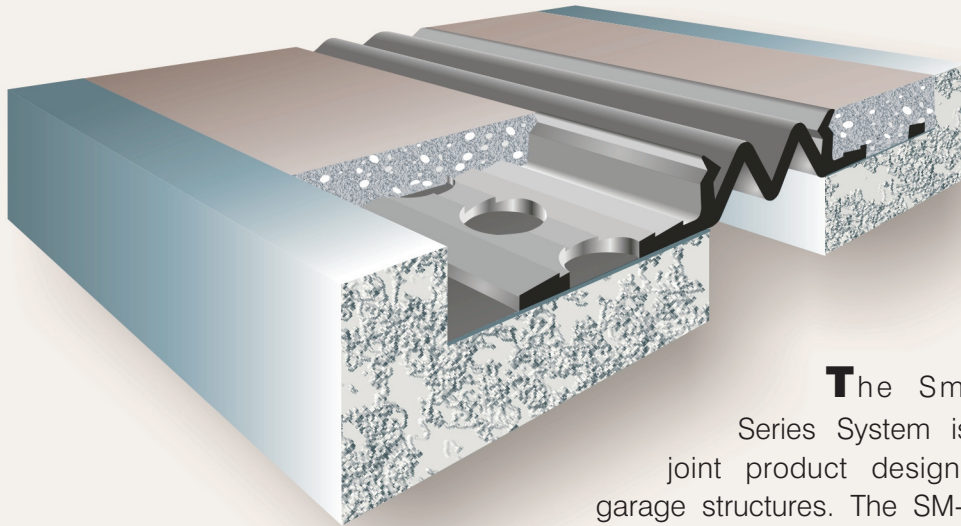
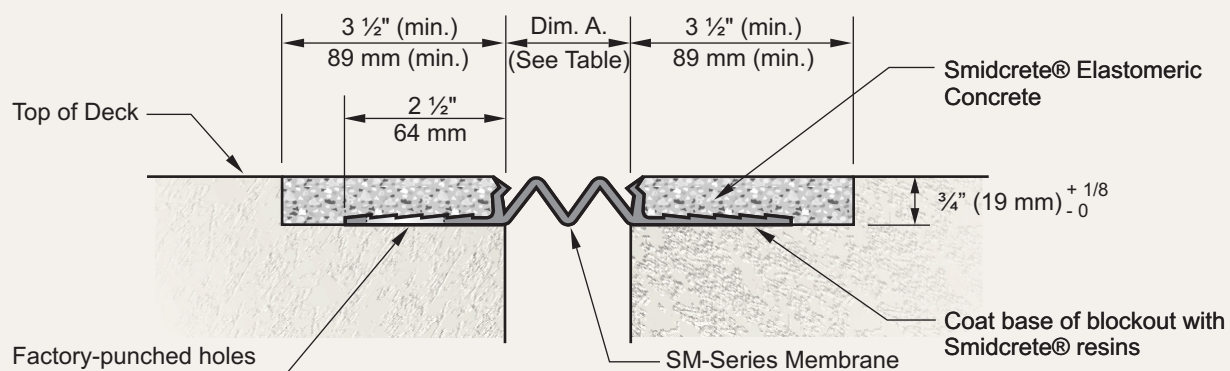


Smidcrete® Single-Ply Membrane System SM-Series



Best Suited for Intermediate and Roof Slabs of Multi-Level Garages

The Smidcrete®/SM-Series System is an expansion joint product designed for parking garage structures. The SM-Series model is best suited for installation on intermediate slabs of multi-level garages, as well as buried joint applications on garage roof slabs [see Smidcrete® “Buried Joint” section]. The design features an extruded preformed elastomeric membrane, which is fusion-bonded to the concrete slab deck with Smidcrete® Elastomeric Concrete. The installed system provides a watertight seal while flexing in response to movement in the expansion joint width, as the structure is subjected to seasonal temperature changes.



Smidcrete®/Single-Ply Membrane System SM-Series

| Seal Model No. | Movement | Nominal A | Min. A | Max. A |
|----------------|-------------------|-------------------|-------------------|--------------------|
| SM-175 | 2 (51) | 1 3/4 (44) | 3/4 (19) | 2 3/4 (70) |
| SM-225 | 2 1/2 (64) | 2 1/4 (57) | 1 (25) | 3 1/2 (89) |
| SM-275 | 3 3/8 (82) | 2 3/4 (70) | 1 1/8 (32) | 4 1/2 (114) |

Bold numbers indicate inches. Light numbers indicate millimeters.

Description

The SM-Series incorporates a single-ply centre section with forming ears, and integral edge flaps with factory punched holes. Through these holes the Smidcrete® mixture penetrates and secures the thermal rubber seal to the base of the concrete blockout or recess.

There are three distinct sizes in the SM-Series group: namely, the SM-175, SM-225 and SM-275. Each is designed for a different joint opening and movement capability. The SM-Series shapes are an appropriate selection for use where thin topping slabs require a likewise proportionately shallow expansion joint profile. The single-ply membrane part installs more

easily than other multi-celled shapes that must be compressed and forced down into the joint opening. The SM-Series shapes are placed on top of the joint opening and do not need a specific opening width, so long as the maximum width for installation is maintained.

A further use for the product is for buried applications where it is extremely important to specify and install a watertight system. The SM-Series shapes replace the antiquated reinforced 'loop joints' that historically have proven ineffective as long-term sealing systems [see Smidcrete® "Buried Joint" section].

Uses and Features

Ideal for Restoration Work:

- Used to replace various existing systems; including urethane caulked joints, urethane T-joint systems, compression seal and looped membrane systems in mastic.
- Used where joints opening is irregular, since the seal is placed on top of the concrete and the shape does not have to be compressed down into the joint opening.

Used for New Construction:

- Used with various slab membrane systems; including thin urethane systems, mastic surfaces and heavier asphaltic systems.
- Blockouts or recesses can be formed into the concrete at the joint opening during construction.

Used for Buried Joints:

- The seal configuration used with Smidcrete® works well with various waterproofing membrane schemes for buried joints.
- Positive heat-fusing of the SM-shape at corners is an advantage over the present day, problematic sealing of "loop-joint" products.

Heat-Fused Transitions:

- Thermo-Rubber membrane shapes are heat-spliced in the field to ensure watertight directional changes.

Permanent Header System:

- Smidcrete® provides durability under vehicular loadings.
- The elastomeric properties of the material resist cracking, particularly in colder temperatures.

Various Waterproofing Systems:

- Used with various slab membrane systems; including thin urethane systems, mastic surfaces and heavier asphaltic systems.
- Creates an "End Dam" water tight condition, isolating the expansion joint from the rest of the waterproofing.

Physical Properties

The system consists of two items: an extruded elasto-meric thermo-rubber membrane and the Smidcrete® nosing material.

The membrane is available in two sizes. It is an extruded shape made from an EPDM-based, Thermo-Rubber material. The material meets requirements of ASTM D2000 and has properties as shown in Table 1.

The membranes can be used with one of two Smidcrete® products:

1. Smidcrete®

- Urethane/epoxy blend, that is a hot-applied, heat-cured system
- A & B Liquid combined with an aggregate blend.

2. Smidcrete® C

- Cold-applied, chemically curing mixture.
- A & B Liquid combined with an aggregate blend.

[See the data sheets on the Smidcrete® and Smidcrete® C products respectively.]

TABLE 1 - PHYSICAL PROPERTIES OF THE EPDM-BASED THERMO-RUBBER SEAL ELEMENT

| Property | ASTM Test Method | Typical Values |
|----------------------------|------------------|----------------|
| Tensile strength | D412 | 1000 psi |
| Elongation @ break | D412 | 410% |
| Hardness, Type A durometer | D2240 (Modified) | 67A |
| Compression set | D395 (Method B) | |
| 168h @ 77F | | 24% |
| 168h@212F | | 36% |
| Tear strength @ 77F | D624 | 140 lb./in. |
| Tension set | D412 | 10% |
| 100% modulus | D412 | 420 psi |
| Specific gravity | D792 | 0.97 |
| Brittle point | D746 | <-81 F |

Installation

- Unsound concrete shall be removed and the area repaired. Prepare the blockout recess by sand-blasting to remove laitance and contaminants. It must be clean, dry, and level across the joint opening. Tape off the edges of the recess for a clean installation.
- Place the multi units of Smidcrete® in the approved kettle and decant the liquids into the pre-measured cups. Small amounts can be heated in a microwave in individual single unit size containers.
- Apply a 1/8" thick layer of the Smidcrete® bedding mix (resins only) to the recess base, directly underneath where the flaps of the membrane will seat. After cleaning the SM membrane with an approved solvent, place it in the blockout recess. Centre it over the open joint making sure the sidewalls of the SM seal are supported by the

- concrete below. Press the flaps down into the resins and the Smidcrete® resins will ooze up through the holes.
- Mix the Smidcrete® resins with the bag of aggregate to form the mortar mix. [Note that the Smidcrete® and Smidcrete® C products have different mixing directions. See the appropriate data sheet and Installation Manual.] Place the mortar mix over the membrane flaps and fill the recess area. Compact the material so that no honeycombing can occur.
- Level off the Smidcrete® and trowel the finish smooth. The level of the Smidcrete® should span from the “forming ears” to the edge of the concrete recess. Strip the protective tape and paper from the concrete. For best results, use a trowel that is repeatedly heated by a propane torch.

- Cure the Smidcrete® as per the manufacturer's recommendations.

Smidcrete®: The standard Smidcrete® is a heat-cured material. Place lengths of the heat hoods over the expansion joint installation. Using a fan forced propane torpedo heater, heat the installation for 2 hours at a temperature between 140 and 160 degrees F. When the hoods and heater has been removed and the installation has cooled down, the installation can be turned over for traffic usage.

Smidcrete® C: Smidcrete® C will chemically cure. It will take an initial set in an hour and has a “drive over” time of 3 to 4 hours at 70 degrees F.

Limitations

- Blockout recess must be clean and dry.
- The concrete of the blockout recess must be sound.
- The anticipated movement should be within the movement limits of the membrane size selected.

Delivery and Storage

The Smidcrete® resin components are packaged in separate containers of various sizes. They are available in one unit kits, multi unit kits or bulk containers. The aggregate is premeasured, bagged, then placed on pallets and wrapped in plastic for protection. The elastomeric membrane is delivered in continuous lengths, rolled up on pallets or reels.

Until use, all components should be left in their original, unopened containers and stored indoors. The Smidcrete® resins should be stored at temperatures between 40 and 90 degrees F. When properly stored Smidcrete® has a shelf life of six months.

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