



20H SYSTEM™

DO NOT OPEN ANY MATERIALS or install this material until all members of your crew have read and understand these instructions as well as all relevant MSDS sheets. If you do not understand any part of these instructions CALL EMSEAL: USA: 800-526-8365, or 508-836-0280 Canada: 866-436-7325, or 416-740-2090

INSTALL DATA

1 Equipment & Material Storage

In addition to safety equipment required to comply with applicable safety regulations, equipment to prepare and repair the joint-faces, as well as normal tools for the trade, the following are required:

Equipment Checklist:

- Propane torch with 40mm (1 1/2-inch) diameter nozzle and long hose. DO NOT use small hand torch.
- Tape measure.
- Long-bladed bread knife and hacksaw for cutting inside and outside corners.
- Spray bottle with water.
- Gloves.
- Spatula to scrape epoxy from cans.
- Jiffy mixers and heavy duty, low speed, high torque drill for mixing epoxy.
- Duct tape (4 times the length of joint).
- 50mm (2") margin trowels for applying epoxy adhesive on material.
- Acetone solvent for cleaning joint-faces, trowels and mixer.
- Clean lint-free rags.

STORAGE:

Cold Days

Below 41°F (5°C):
Store sealant inside off the floor, at above 68°F (20°C) or, ideally, in a hot box at job site.

Hot Days

Above 60°F (15°C):
Keep sealant at room temperature and out of direct sun. At very hot temperatures, to slow foam expansion, cool material in boxes with ice or dry ice.

2 Prepare & Solvent-Wipe Joint Faces

Concrete:

- Remove loose particles and weak concrete to ensure sound concrete substrate. Spalls, chipped edges and uneven surfaces must be repaired using suitable patching material and proper patching geometry and techniques. Joint faces must be parallel. Joints must have unobstructed depth greater than or equal to the full depth of the largest material supplied plus 1/2-inch (6mm).
- Remove all contaminants by sandblasting or grinding to ensure a thoroughly clean and sound substrate for the full sealant depth. NOTE: DO NOT use wire wheel--this will polish the substrate and cause bond-failure.
- Dry all wet surfaces. NOTE: Do not use flame to dry substrate--this will leave carbon on the substrate and cause bond-failure.
- Wipe joint faces with solvent-dampened, lint-free rags to remove all concrete dust and contaminants.

Steel:

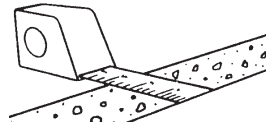
- Sandblast or grind to white metal and solvent-wipe immediately prior to applying 20H epoxy.

Caution: Keep solvents away from 20H foam as they could dissolve the asphalt impregnation.

Other Substrates: Contact EMSEAL.

3 Measure Joint Width & Find Correct Size Material

- Measure joint width at deck surface and below to ensure joint faces are parallel.
- Material has been supplied to suit your mean-temperature field-measured joint widths. Widths of material supplied are marked on each box.
- Find correct box and open it.
- Compare width of material supplied as marked on each stick against mean joint width. Actual width of material as measured between hardboard will be slightly less than marked size because material is over compressed to aide installation.



NOTE: If unsure of correct material selection, consult EMSEAL.

4 Pre Cut Joins & Lay Out Material

TIP: Pre-cutting any stick length to accommodate a determined joint will save production time.

- Using a power saw with a standard wood blade (not carbide tipped) make 90-degree cuts through the shrink-wrap, hardboard, and 20H foam where warranted for length measurements.
- TIP:** Continuously spray the saw blade with water to make cutting easier.
- Cutting may split the shrink-wrap which will allow the foam to begin to expand prematurely. To prevent this, wrap a piece of duct tape around each cut end.
- Lay sticks out along the joint-gap at installation points.

5 Mask Deck & Mix Epoxy Adhesive

- Using duct-tape, tape off the deck on both sides of the joint.
- 20H epoxy adhesive may be used in the 5°C (41°F) to 35°C (95°F) temperature range.
- Cut off the top of the container of Part B of the epoxy adhesive and pre-mix Part B with a stir-stick or jiffy mixer.
- Open Part A but do not cut the top of the container of Part A.
- Using a trowel, transfer the entire contents of Part B (hardener) into the contents of Part A (base).
- Mix the material thoroughly with a drill and jiffy mixer. Scrape the walls and bottom of the container to ensure uniform and complete mixing.

IMPORTANT: Always mix component B (hardener) into component A (base). Ensure that a uniform gray color with no black or white streaks is obtained. DO NOT thin the epoxy.

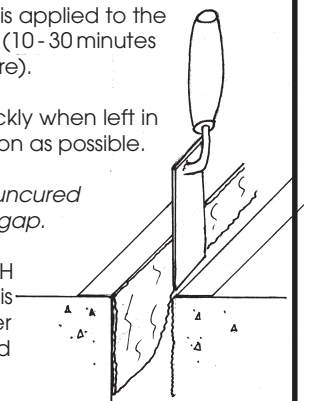
6 Apply Epoxy to Substrate

Ensure that the mixed epoxy adhesive is applied to the substrate before the pot life has expired (10-30 minutes depending on the ambient temperature).

WARNING: Epoxy will harden more quickly when left in the pot--get it onto the joint face as soon as possible.

IMPORTANT: The epoxy must still be uncured when installing 20H foam into the joint-gap.

If the epoxy cures before installing the 20H foam then reapply new epoxy. If work is interrupted for more than 2 hours after initial cure then grind the old epoxy and apply new wet epoxy.



7 Unwrap 20H Foam & Heat Both Sides

The 20H foam is kept under compression by plastic wrapping and hardboard on both sides.

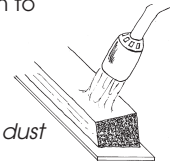
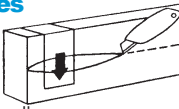
- Slit the plastic packing by cutting on the hardboard and remove hardboard and inner release liners.

IMPORTANT: Work quickly and deliberately after cutting the shrink-wrap to avoid material expanding beyond joint size.

- Lightly and quickly apply heat from torch to both sides of the 20H. The heat opens the outer cells of the foam to receive the epoxy.

Heating also expands the foam to a size that ensures a snug fit and allows the foam to support its own weight.

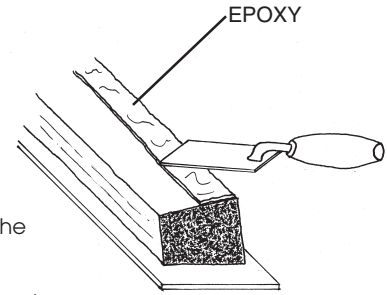
IMPORTANT: Heat ends well to remove cutting dust and to soften the asphalt for a good, tight join.



8 Apply Epoxy to Foam

- Apply a light coat of epoxy adhesive to the bottom third of both sides of the 20H foam.
- DO NOT apply epoxy on the underside of the material.
- DO NOT apply epoxy on the ends of material.

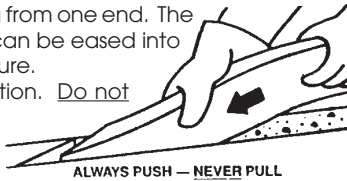
TIP: Use the hardboard packaging as a flat, clean working surface.



9 Install 20H in Joint

Important: Ensure that epoxy on the joint-face has not cured.

- When installed, the 20H must be flush to the top of the joint. (**Exception:** if being installed in a secondary position to field-applied liquid sealant, recess the 20H to a depth required by the liquid sealant manufacturer).
- Feed material into joint, starting from one end. The material should fit snugly so it can be eased into the joint with steady, firm pressure.
- Work sequentially in one direction. Do not stretch material.
- Push miter joints firmly together. Ensure there are no gaps at joints.
- **NOTE:** When material is correctly expanded for a snug fit it will support its own weight in the joint.
- During low temperature installation, provide as much ambient heat as possible around installed sealant to accelerate recovery.
- Before it cures, wipe away excess epoxy using a clean rag.



10 Apply Topcoat to Exposed Surface

- Before applying the topcoat, be sure that the 20H foam has had time to expand firmly in the joint.
- Mask deck again with duct tape leaving a 6mm (1/4-inch) band of exposed concrete on each side of 20H.
- Using a paint brush, apply topcoat along entire exposed top surface of 20H material and up to masking tape.
- Application thickness to be an average of 1mm (1/32-inch) achieved through two coats. Apply second coat after first coat has dried tack-free.

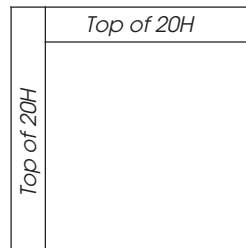
NOTE: If installing in a secondary position to field-applied liquid sealant, mask the edges of the concrete to which the liquid sealant will be applied, then paint on the topcoat.

After the topcoat has dried tack-free, remove the duct-tape, lay a polyethylene bond-breaker tape over the 20H SYSTEM, solvent clean the joint-face and install the liquid sealant.

11 Transitions and Special Conditions

FLAT CORNERS:

- Work towards the corner so that the last two pieces to install will join at the corner.
- Cut each piece to be joined 3/8-inch (10 mm) longer than needed.
- Install one piece so that it runs through the intersecting joint-gap. Firmly push and compress the extra length so that a tight fit in the corner is achieved.
- Butt the intersecting end firmly into the previously installed stick.

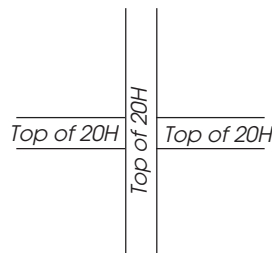


Flat Corner Transition (Plan View)

NOTE: The extra length will make it a tight fit--this results in a compression fit that aides watertightness.

CROSSES and TEES:

- Run one piece of material across the intersection. Firmly butt intersecting pieces into sides of already placed material..

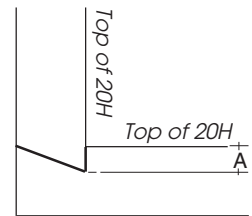


Cross (Plan View)

INSIDE CORNERS:

(Deck-to-curb, tread-to-riser etc.):

- Cut the 20H foam for the lower horizontal joint to be longer by an amount equal to the depth of the material being installed.
- The inside corner must be joined by cutting a keyway in the horizontal material with a matching key in the vertical material.
- To cut the keyway, first make a template using a piece of the hardboard packaging and a hack-saw.



Inside Corner (Section)

Keyway Dimensions:

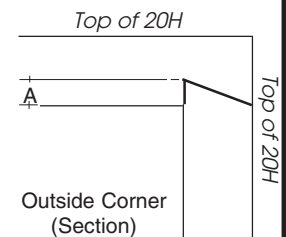
Nominal Material Size	Dim. "A"
Up to 3/4-in (20mm)	1/2-in (12mm)
Over 1-in (25mm)	1-in (25mm)

- Using the template and a water-sprayed bread knife or hack saw, cut the key at the end of the foam for the vertical section and the keyway in the end of the horizontal section.
- Install the horizontal section ensuring that the keyway is inserted past the vertical face of the joint.
- Be sure of a tight fit with no voids.

OUTSIDE CORNERS:

(Curb-to-sidewalk, riser-to-tread etc.):

- Using the template and method described above, join outside corners by cutting a keyway in the underside of the material to mate with a matching key cut in the piece of material for the vertical joint.



Outside Corner (Section)