Construction

Sikaflex Sealant Installation

Construction

Critical Success Factors

Substrate preparation

- If done properly would probably eliminate 95% of all call backs
  - Most common mode of sealant failure
- Must remove all weak material on bonding surface of porous substrates
- Surfaces must be clean, dry, free of dew or frost
- Use best practices as recommended by industry experts:
  - Porous: abrasive, high pressure water (allow surface to dry), grinding, wire brush, compressed air (oil free)
  - Non-porous: 2 rag method (clean, lint-free, and absorbent - solvent wipe followed by an immediate dry cloth wipe. Do not spread contaminants)

Construction

Mechanical Methods

- Wire brushing
- Sand blasting
- Grinding
- Sawing

Construction

Mechanical Methods

Saw cut joint – to provide proper width & sound joint interface.

Construction

Mechanical Methods

Sandblast to remove residues & provide profile

Construction

Critical Success Factors
Priming

- Priming can help get a better bond in many situations
  - Priming does not substitute for good prep
  - Many products perform w/out primers
  - Most commonly used on horizontal and submerged applications
  - Must be done properly to work (primers are not error free: ponding, waiting time, etc.)
  - Sikaflex primer are substrate specific

Proper primer application with brush
Prime only sides of the joint.
Primer outside the joint may stain the substrate.
Prime & seal the same day

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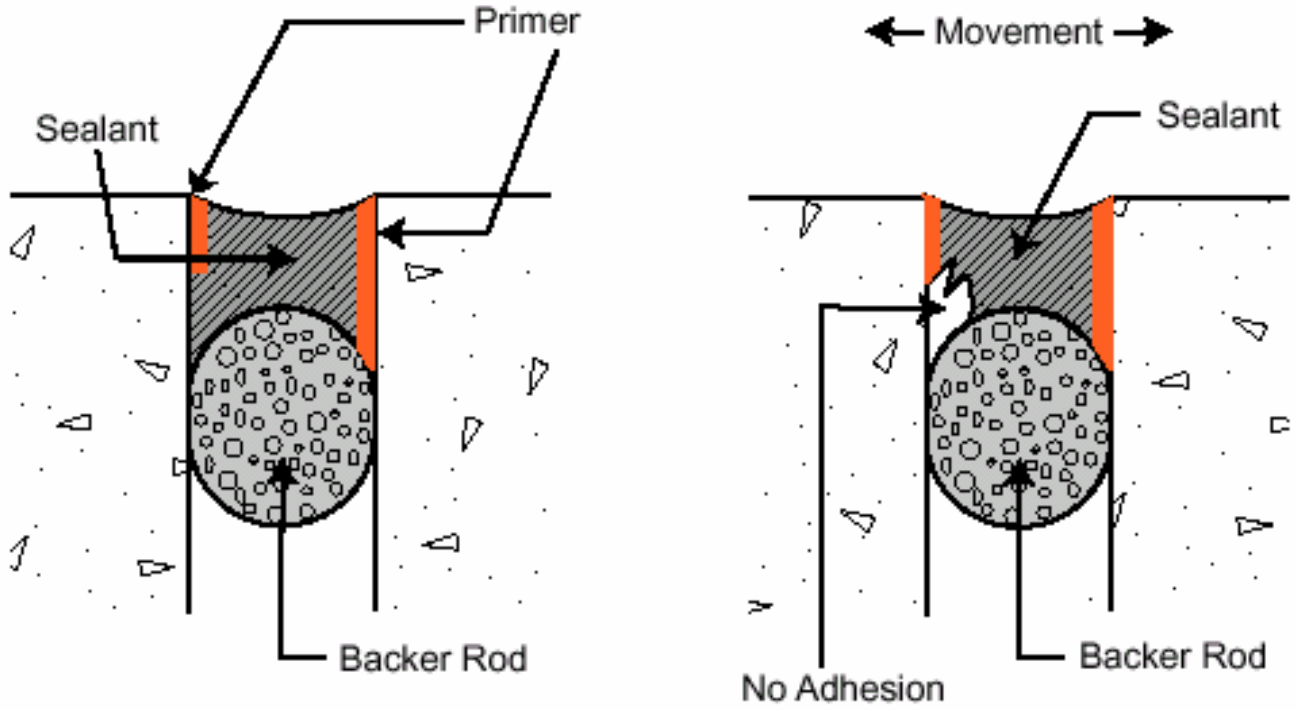
Critical Success Factors
Priming



Construction

Critical Success Factors

Backing materials

- Why use backer rod:
  - Attain proper wetting of substrate when sealant is tooled
  - Control sealant depth
    - ½” maximum
  - Prevent 3-sided adhesion
  - Provide support for traffic areas

Construction

Critical Success Factors

Backing materials

- Recommended Materials
  - Closed cell backer rod: primarily a foam material with a surface skin
  - Open cell backer rod: primarily a foam material without a skin
  - Bicellular backer rod: sometimes called “soft” rod, this foam acts like a hybrid between open and closed cell rods
  - Bond Breaker Tape or Backing Tape: primarily a self-adhesive polyethylene or Teflon material
  - Hard rectangular extrusions for horizontals

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Backing Materials

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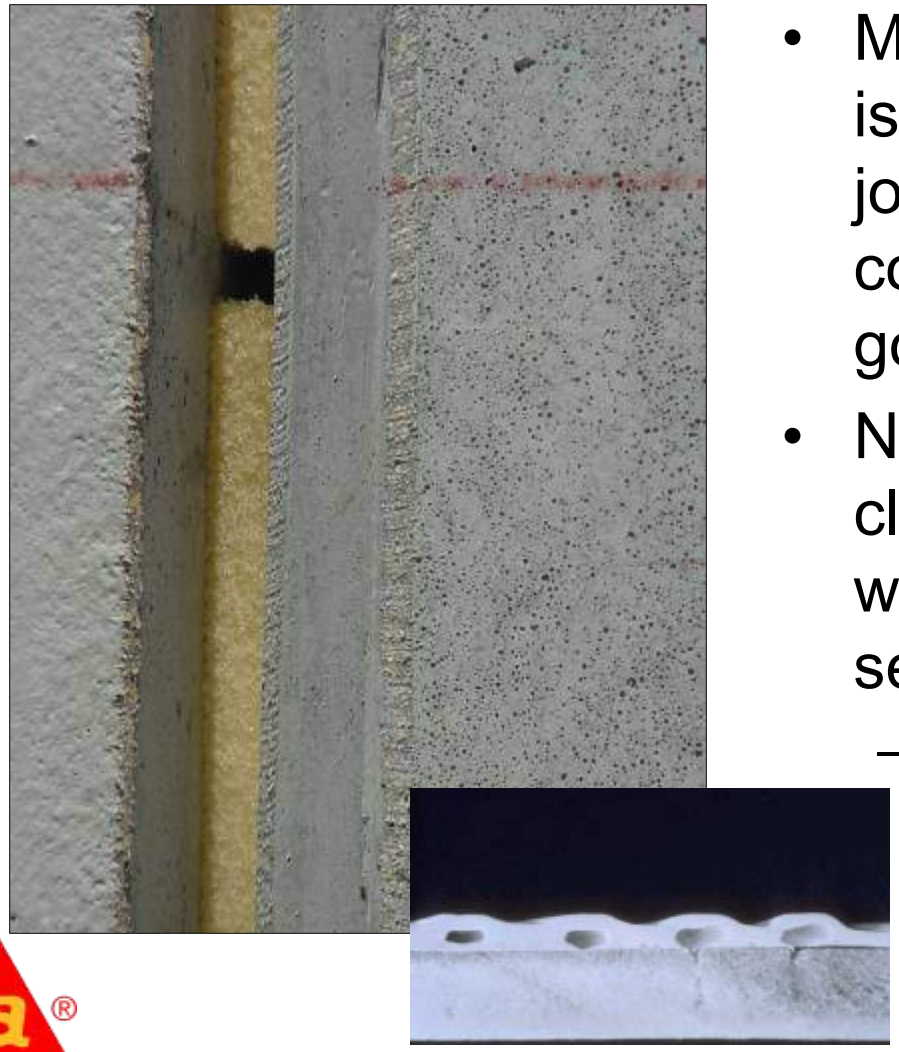
Backing Materials



- Make sure backer rod is 25% larger than joint width (under compression) to offer good tooling base
- No not puncture closed cell backer rod when installing prior to sealant installation
  - Will cause bubbling in sealant

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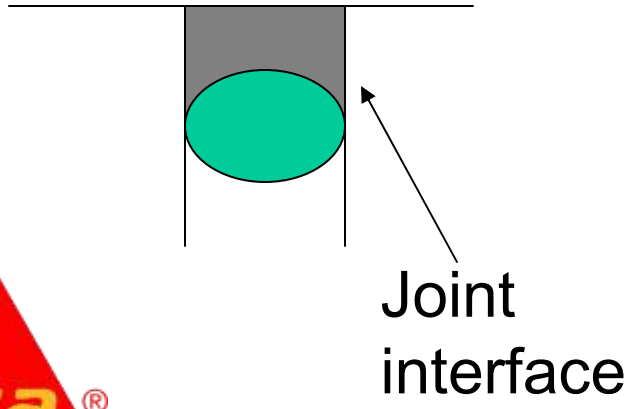
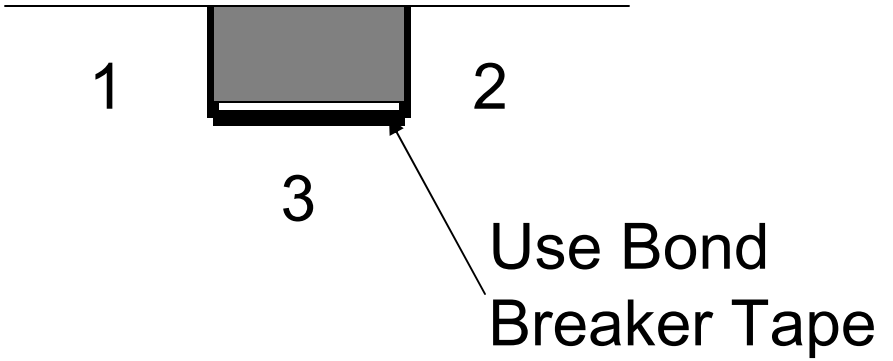
Critical Success Factors

Backing materials

- Joint Interface – the sides of the joint where the sealant is adhered.
- Three-sided Adhesion – where the sealant is adhered to the sides of the joint as well as the bottom of the joint.





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Critical Success Factors
Backing materials

Where the depth will not permit the use of a backer rod a polyethylene bond-breaker tape may be used.

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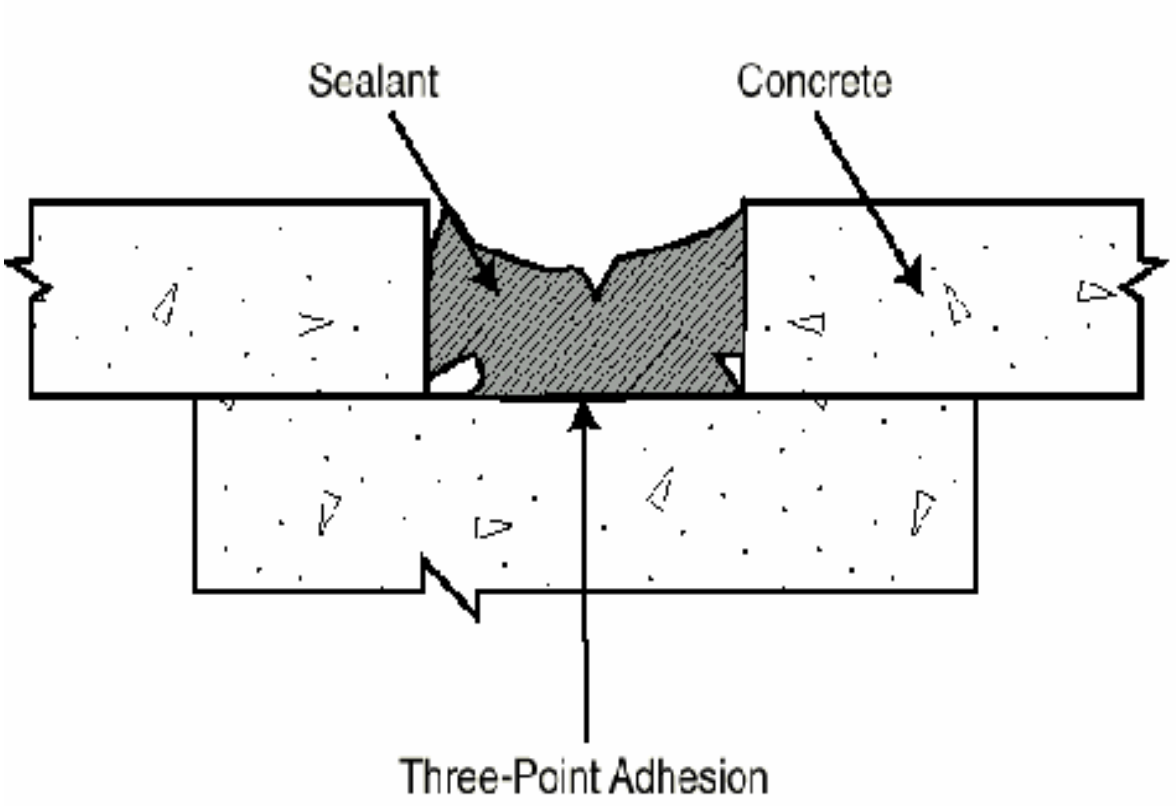
Joint without bond breaker tape



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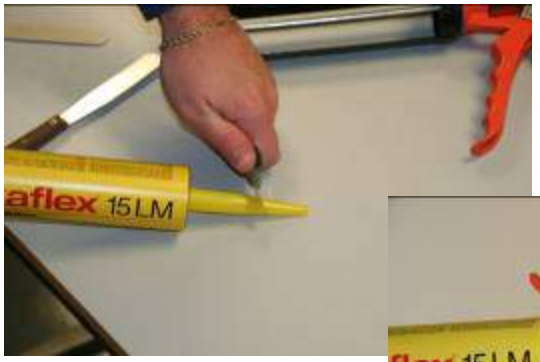
Sealant Installation

Loading

- Cartridge
  - Cut cartridge tip and puncture seal at the nozzle base
  - Load cartridge into caulk gun
- Sausage
  - Load sausage into sausage gun, then cut the metal clip off
  - Attach nozzle



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Sealant Installation

Gunning

- Place nozzle of gun into the bottom of the joint and fill the entire joint
- Keeping nozzle deep in the sealant, continue a steady flow of sealant preceding the nozzle to avoid air entrapment
- Avoid overlapping sealant
- Coverage:
  - 10.1 fl oz yields 12.2 linear feet of ½" x ¼" joint
  - 20 fl oz uni-pac yields 24 linear ft of a ½ " x ¼" joint

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Sealant Installation
Mixing

- Open pail of Sikaflex 2c and remove “B” component

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Sealant Installation
Mixing

- Pour entire contents of “B” component into pail of component “A”
- Add entire contents of color pak into pail if using tint base

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Sealant Installation
Mixing

- A cold weather booster can be added to speed up tack free time

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Sealant Installation

Mixing

Sealant Mixing Paddles

- Mix with a low speed drill (400-600 rpm) and a sealant mixing paddle.
- Mix for 3-5 minutes to achieve a proper consistency and uniform color
- Avoid entrapment of air during mixing

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Sealant Installation

Mixing

- Scrape down the sides of the pail periodically to ensure all of the material is properly mixed.

Sealant Installation
Loading

- Load sealant into a bulk sealant gun directly or use a follower plate system

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Sealant Installation

Gunning

- Place nozzle of gun into the bottom of the joint and fill the entire joint

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Sealant Installation
Gunning

- Keeping nozzle deep in the sealant, continue a steady flow of sealant preceding the nozzle to avoid air entrapment
- Avoid overlapping sealant
- **Coverage:**
  - 1 gallon yields 231 cubic inches or 154 linear feet of ½" x ¼" joint

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Sealant Installation
Gunning

When neatness counts always tape off the sides of the joint using Duct Tape.

(Remove tape immediately after gunning and tooling sealant)

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Sealant Installation

Gunning

Horizontal applications require excellent adhesion to concrete and self leveling option for flat work. Sealant must handle specified traffic conditions.

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Sealant Installation

Tooling

- Dry tool sealant to press material against joint walls or bonding surface
  - Never use alcohol or other solvents to tool a polyurethane sealant

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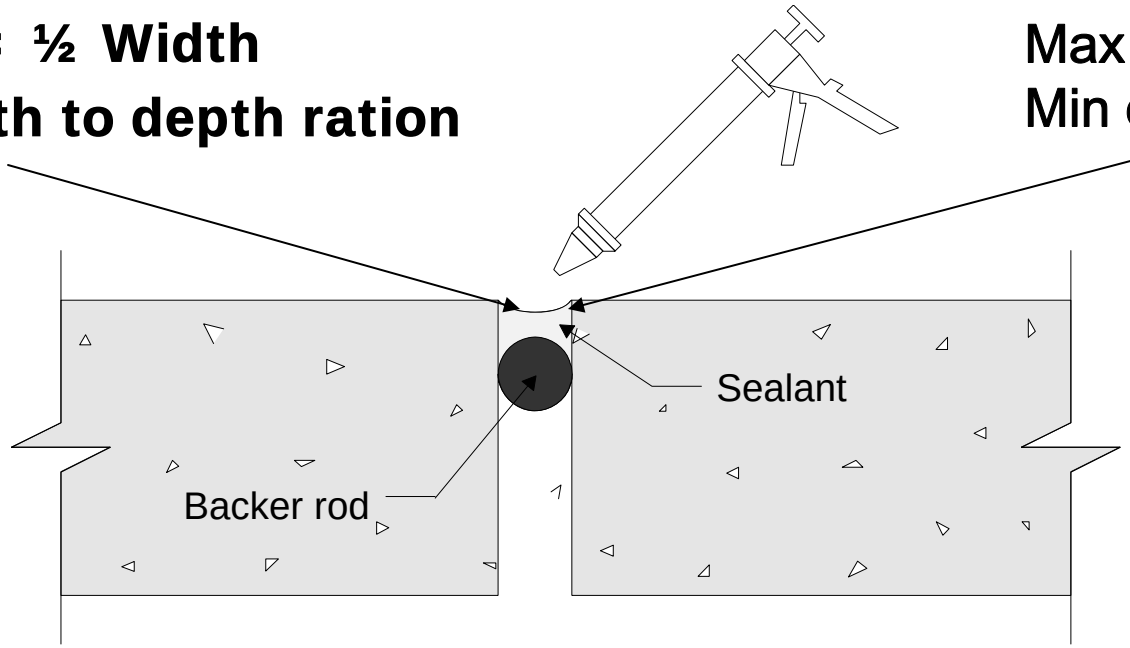
Joint Design

Depth = ½ Width

2:1 width to depth ration

Max depth = ½”

Min depth = ¼”



1. Install appropriate backer material to prevent three-sided adhesion and to control sealant depth.
2. Sealant should be gunned into joint at mid-point of designed expansion and contraction to maximize accommodation of movement. Joint dimension of 4X anticipated movement allows proper function of high performance sealants even if applied at temperature extremes.
3. Tool as required to properly fill joints and force sealant against joint interfaces, maximizing bond.

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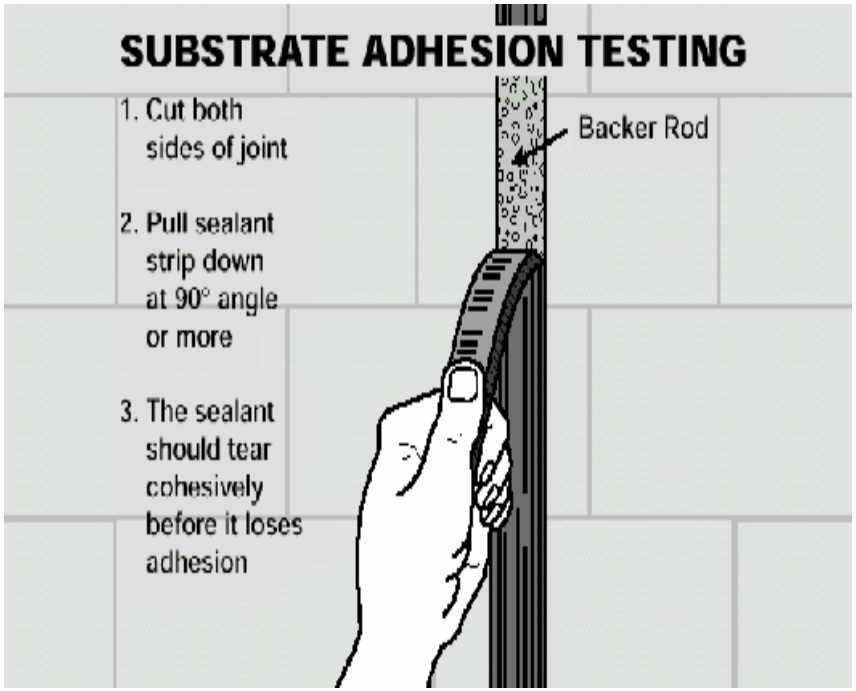
Adhesion Testing

- Always test for adhesion
- Jobsite Pull Test:
  - After material has cured to ensure proper bond
- Test actual substrates on site
- Document locations and times



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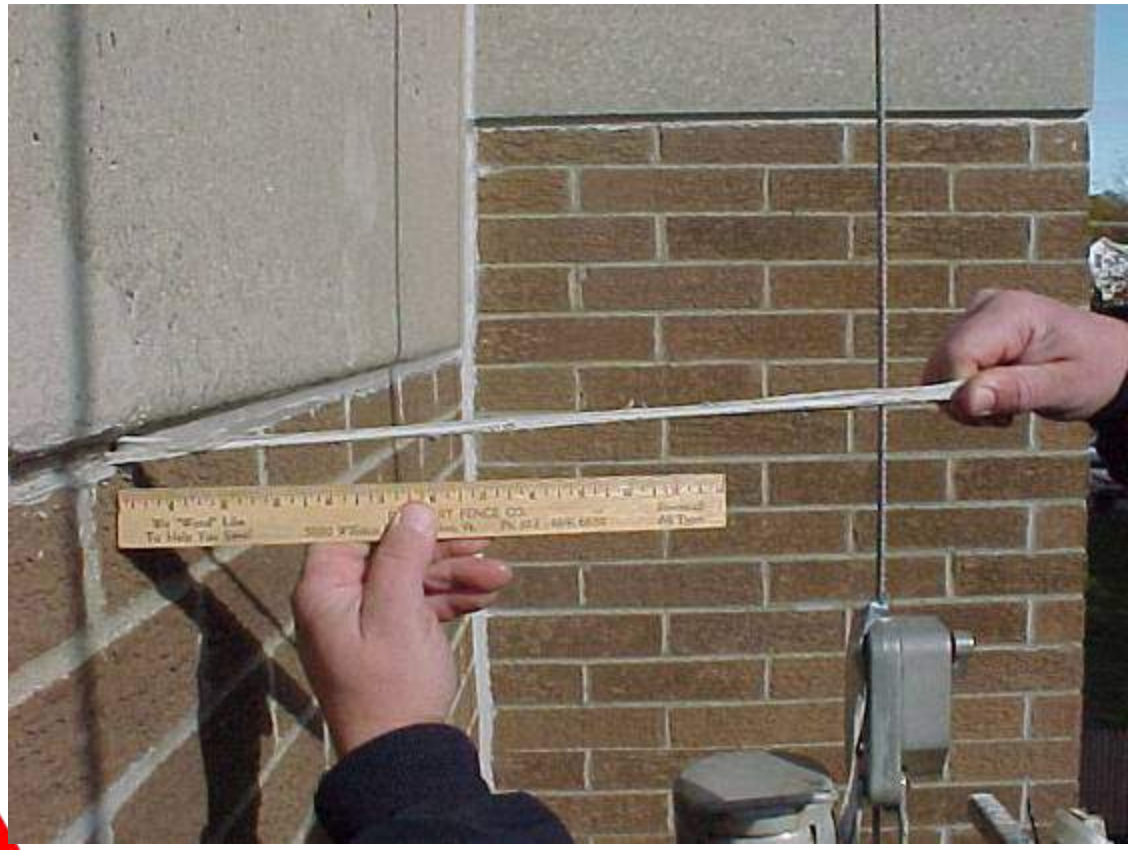
Jobsite Pull Test



Place sealant and allow to cure. Cut a 2-3” piece of the sealant and pull at a 90º angle from the substrate. The sealant should not “peel” from the joint interface.

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Sikaflex Sealant Installation

To take the Sikaflex Sealant Installation Certification Test click here:

Sealant Installation Certification Test