MAKING PROPER SEALANT JOINTS IN NEW CONSTRUCTION

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Objective:
To list proper sealant joint considerations to assist Contractors in building more accurately for longer durability of wet applied sealants.

Use:
The Contractor makes a major impact on whether joint sealants will function properly. A list of things a contractor should and should not do to improve proper joint construction is a valuable tool. This list is useful for contractors, subcontractors, suppliers and anyone interested in more successful joints.

GENERAL CONSIDERATIONS:

- Request clarification from the design professional on any detail that is unclear or suspect in design (especially joint width and depth
- If joints are not designed into the weak areas of a structure (such as radiating from corners of windows and doors), request clarification from design professional
- If shop drawings are required from other trades who make up the joints, allow review by the sealant manufacturer and/or installer before construction
- Before sealant installation, approve submittals including colors
- Consider giving preference to SWRI Validated sealants
- When selecting colors, keep in mind all sealants change color by the effects of the sun or dirt pickup (toward shades of gray)
- Require either full mockups or field applied mockups by all subcontractors applying sealants and test them for;
  1. proper specified width and depth
  2. Request written confirmation from designer that specified width and depth of joints will be adequate for the anticipated movements, loads and tolerances
  3. adhesion (and whether primer is needed)

4. proper backing type and placement
5. geometry (in general joints should be measured in the middle to be half the width of the joint and no thinner than ¼" and no thicker than ½")
6. color
7. neatness
8. paintability (if appropriate)

- Pre-construction meeting of all subcontractors who will build the joints

- Do not schedule sealants until concrete is cured 28 days and masonry for 7 days

- Ensure adhesive compatibility of different sealants at intersecting joints such as window frames and concrete or brick joints (whenever possible, request one sealant for all intersecting joints)

- If sealants are to be painted, ensure the paint is applied thinly after sealant has fully cured and will adhere (note: not all sealants are paintable)

- Ensure work above sealant work has halted for the sake of safety

- Do not allow joints that are too narrow

- Require applicators to perform non-destructive and destructive testing throughout application (per SWRI Applying Liquid Sealants training program)

- Witness and inspect periodic testing

CONSIDERATIONS BY SUBSTRATE:

Brick
- Brick expands -- build joints wide enough to account for this fact
- Require masons to keep all mortar out of the joint
- Ensure mortar joints are complete inside the face of the joints

Block
- Split faced block needs tightly tooled mortar joints to make sound sealant joints
- Walls must be anchored to the structure before applying sealants

Windows
- Hollow frames that do not allow installation of backing should be modified or not used

Tilt-up walls

- When patching spalled tilt-up panels, the repairs must be sound and dust-free for sealant adhesion (sealants are an inappropriate spall repair)
- Walls must be anchored to the structure before applying sealants

EIFS (exterior insulation finish systems)

- Use EIMA guides

Stucco

- See EIFS

Pedestrian joints

- See **Horizontal joints**
- Recess these joints slightly depending on the amount of anticipated movement to accommodate bulging sealants when in compression
- Harder (high durometer) sealants with a semi-rigid backing (such as high density Styrofoam) withstand heel penetration best though do not accommodate much movement

Horizontal joints

- See **Pedestrian joints**
- Where horizontal joints meet vertical surfaces, require a cove bead (45^0 angled joint) to reduce ponding against the bond line
- Horizontal joints may be considered similar to immersed joints and thus should always be primed
- Avoid soft backup materials if pedestrian traffic is expected
- Avoid absorbent backings which might hold moisture against the sealant and saturate the bond line

Continuously immersed joints

- Always require primer when sealants will be continuously immersed