



Review the concrete finish requirements with the concrete foreman... bentonite requires a relatively smooth base for proper installation.



There are many different types of waterstopping. Proper installation technique is key to the success of the system. We need to review the system with the installer and make sure that all proper components and instructions are on site and understood by the team. Knowing what to look out for will give us the confidence to verify the installation. Please do not hesitate to contact the Quality Department if you or anyone on your team would like to know more about your system.

*Corey Zussman, AIA, NCARB - Director of Quality Management*

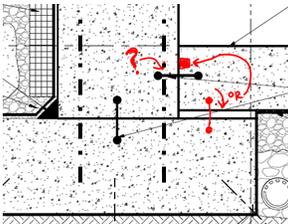
○ We must first verify the waterstopping system that is to be installed:

**PVC Thermoset Bentonite Rubber / Bentonite Asphaltic / Butyl Rubber (non-swelling) Other**

- Make sure that the installation instructions are submitted and on site for the installers and yourselves o reference.
- Understand the edge distance, the required concrete coverage, and minimum concrete thickness needed. Even bentonite has different distance requirements depending on the system used.
- Review if a primer or manufacturer adhesive is to be utilized with the system.
- Discuss sleeves in concrete...what material sleeves need to be, minimum size of sleeve, and distance apart from other sleeves (which could be 6"). Distance might be different in the slab and in the wall...or, are we installing knock-out sleeves?
- If sleeves need to be close together then 6", discuss with the waterstop manufacturer the possibility of alternating the placement of the waterstop on the sleeve in order to get the sleeves closer together, possibly 3" in lieu of 6".
- How are cold joints in slab or wall detailed? Protruding steel, such as cross bracing or tie rods which start in the slab? How does the system go together at these locations?
- Do we have existing construction that we are tying into? Do we need a special component or pre-work on the existing construction in order to make the tie-in?
- Is the waterstop system immediately sensitive to rain or standing water, such as most bentonites? How are we going to protect the waterstop system when it is in the forms of a high wall pour or the extension of the system at the end?
- PVC or thermoset system might need premanufactured components for corners & transitions, verify with the manufacturer.
- PVC or thermoset will take more Preinstallation prep then other systems...discuss how these systems are being set, held in place during installation/concrete pour, and how they are being protected from construction between pours.



Discuss any footing depressions that will be created due to rebar, base plate, or other component... these will need to be ground down smooth for the installation of a bentonite system.



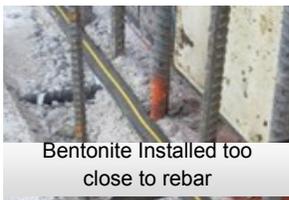
If we have horizontal waterstop being installed and it is the PVC or similar type... how is this going to be installed in the forms and will it possibly interfere with any vertical reinforcing?

Are we able to RFI the Architect to try and use the bentonite or similar type or move the waterstop to a vertical installation at these locations?



Make sure that the bentonite waterstop is protected during construction... This is a 1/2 pipe covering the bentonite, protecting from water.

### Typical Waterstop Installation Failures



Bentonite Installed too close to rebar



Bentonite ends do not butt tightly (overlap)



Bentonite ends are installed with sealant



Pre-Wet Bentonite—due to rain and staining water



Dumbbell or ribbed not in pour center



Splices installed with sealant...not welded



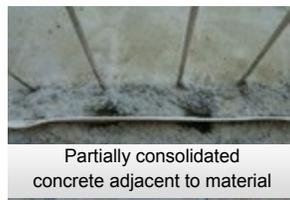
Installed with void or gap under or adjacent



Transition glued...no prefabricated part



Welded on one side...not full thickness



Partially consolidated concrete adjacent to material



Shifted material due to poor securement



Cut or punched flanges (hole for wire for placement)



Mis-aligned material



Concrete not cleaned off prior to next pour

Overheating the PVC and discoloring the system.

Bentonite type installed only with fasteners...no adhesive.