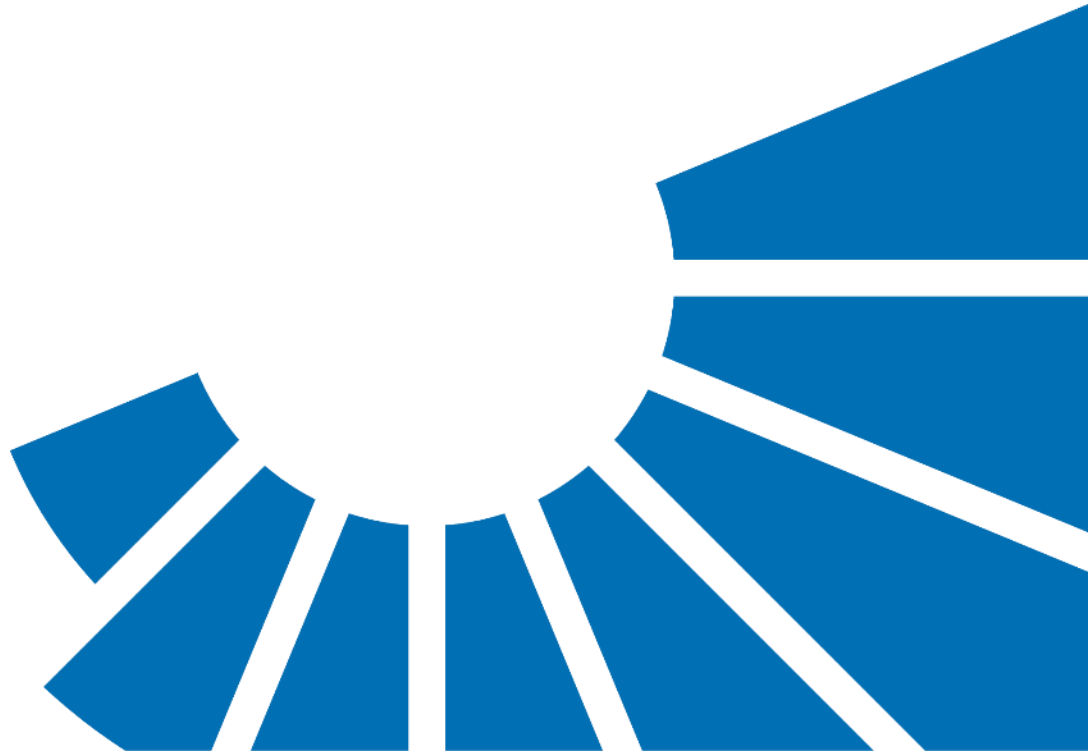
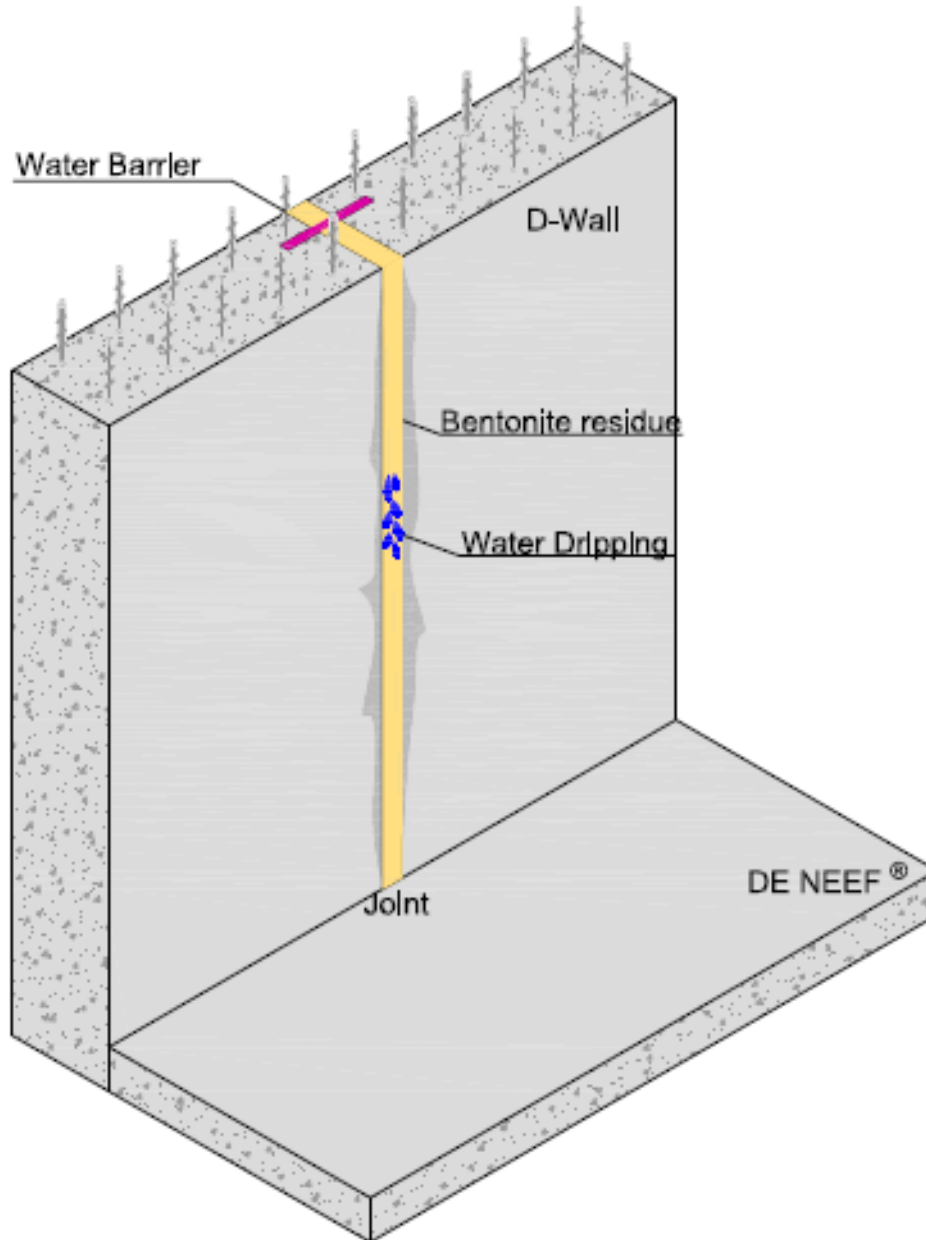


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Leak sealing injections

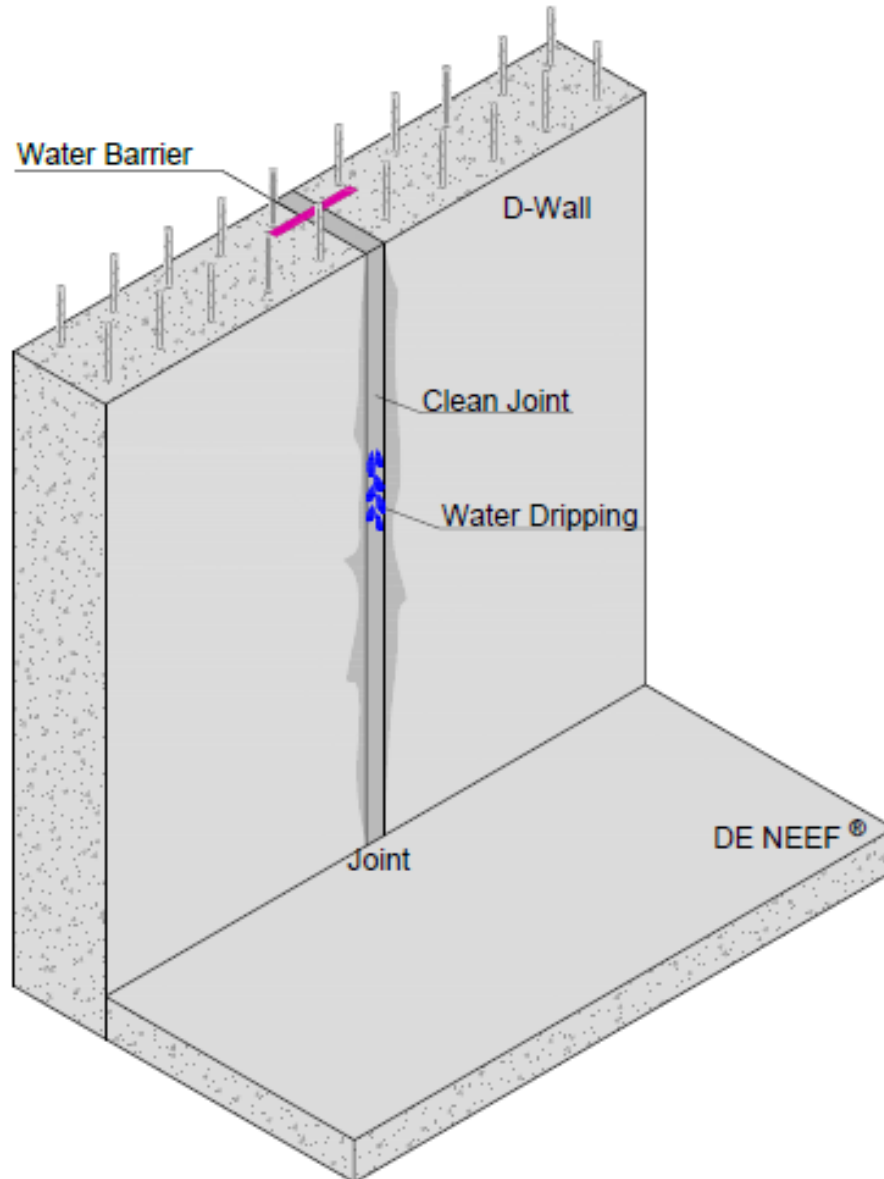


Diaphragm wall – small leak



- Leaking D-wall.
- Problem is addressed through injection with HA Cut CFL or HA Cut AF and max. 10% HA Cut cat AF.
- HA Cut CFL AF/ HA Cut AF is an hydrophobic PU resin which reacts in contact with water.
- Generally moist ingress is tolerated, injections are only required when running water is affecting the continuation of the jobsite.

Diaphragm wall – small leak

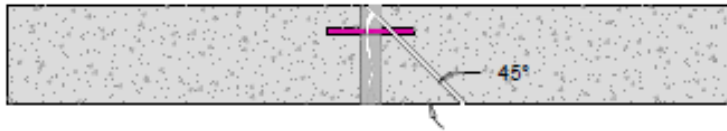


- Remove bentonite residue mechanically with a steel brush. Remaining bentonite residue might affect the effectiveness of the waterproofing injection.
- A hole of \varnothing 17 or 20 mm is drilled towards the center of the joint in an angle of 45° .
- The drilled hole is preferably reaching behind the waterstop
- Drill dust may remain in the hole and obstruct, the dust is removed by blowing air in the hole.
- When there is water pressure present, water may come out of the drilled hole, this indicates that there is a connection with the problem.

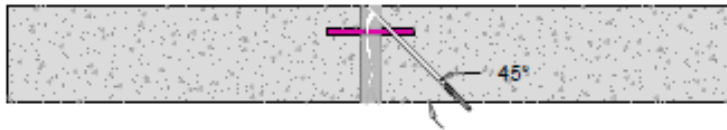
!!! The diameter of the drilled hole may vary depending on the circumstances and used packer !!!

Diaphragm wall – small leak

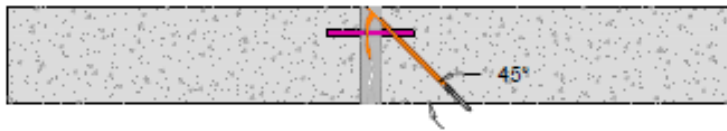
- Borehole Direction -



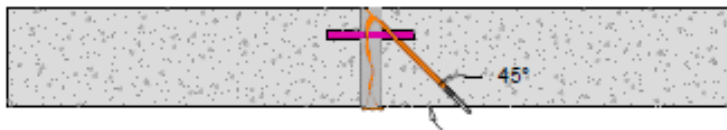
- Packer Insertion -



- Injection Start -



- Injection End -

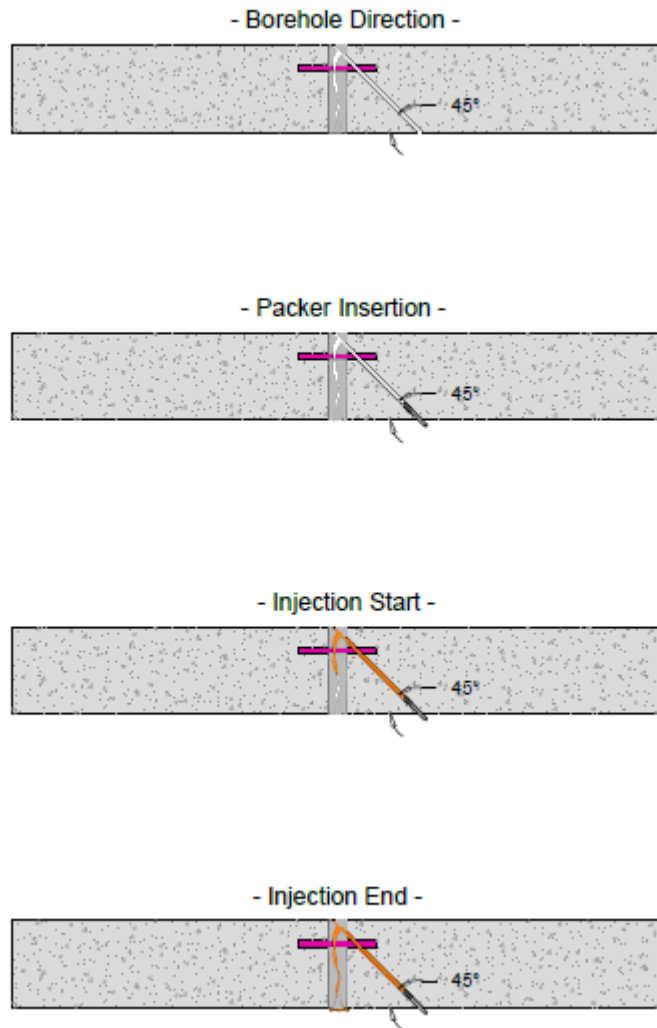


- A \varnothing 17 or 19 mm packer is inserted into the hole.
- The packer is inserted up to 2/3 of its length.
- The packer is tightened using a wrench until the packer is fixed sufficiently into the hole.

TECHNISCHE GEGEVENS PRODUCT

- Prepare the pump and the resin HA Cut CFL AF / HA Cut AF with HA Cut CAT AF “max. 10%”.
- Shake HA Cut Cat AF before adding
- The catalyst dosage and reaction time depends on the application and temperature
- Perform a cup test before the injection to have an idea about the reaction time.
- Don't mix more resin than needed within 4 hrs.

Diaphragm wall – small leak



!!! Too high injection pressure might damage the concrete !!!

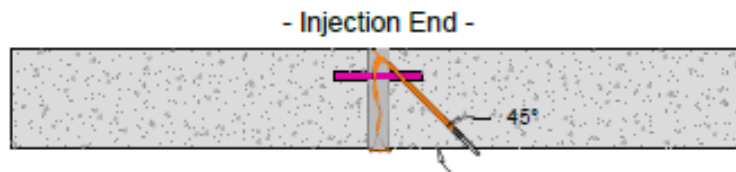
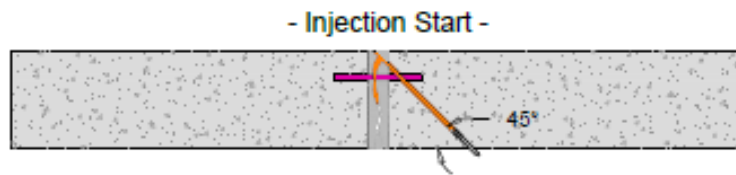
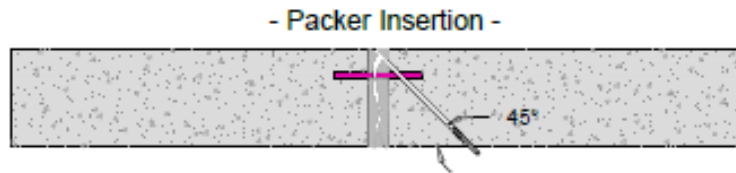
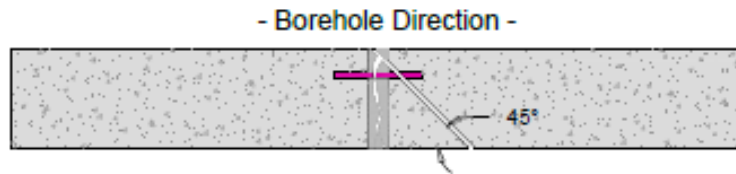
Rule of thumb: Concrete strength x 10

----- = Maximum pressure

3

- The injection hose is connected onto the lowest packer.
- Start the injection with the lowest possible pressure and slightly increase until consumption of the resin is seen.
- Water will come out of the joint, followed by foaming resin, inject until resin is coming out of the position of the next packer.
- When resin is seen at the next packer, connect the injection hose at the 2nd packer and repeat the procedure.
- The injection pressure may vary from 3 to 200 bars.

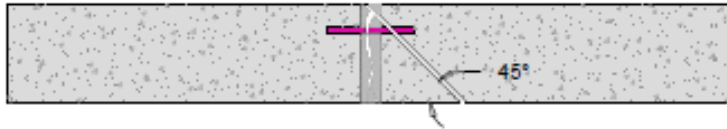
Diaphragm wall – small leak



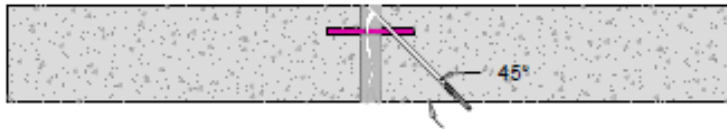
- When there is no consumption of the resin and pressure is raising quickly it means there is no connection with the crack. Stop the injection at this packer and drill another hole left or right from it.
- When pure resin is coming out of the crack, stop the injection for a minute and let the resin polymerize first.
- When there is too much water and water pressure use fast setting mortar, wooden wedges and rags to reduce the flow of the water prior to the injection.
- After injecting a few packers, return to the first packer and inject again (if possible), this to create complete confinement of the resin.

Diaphragm wall – small leak

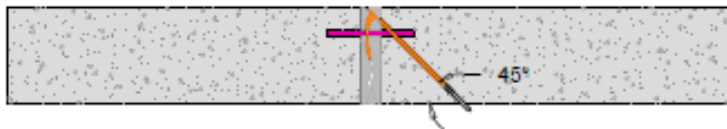
- Borehole Direction -



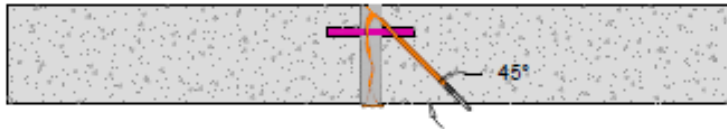
- Packer Insertion -



- Injection Start -



- Injection End -



- Continue to inject all packers until to water is stopped completely.
- Disconnect the injection hose and post-inject with water (separate pump) to let the resin react which remains in the drilled hole.
- The packers can be cut or taken out.
- The remaining hole is repaired with a repair mortar.
- Clean the pump with a solvent “Washing agent ECO”