



CASE STUDY - WATERPROOFING A CRITICAL TELECOMMUNICATIONS FACILITY

• Yorkton, Saskatchewan - Canada •

PRODUCT USED: HMI SOIL LINK™ ACRYLATE GROUT

APPLICATION: Crack Sealing & Water Infiltration Prevention.

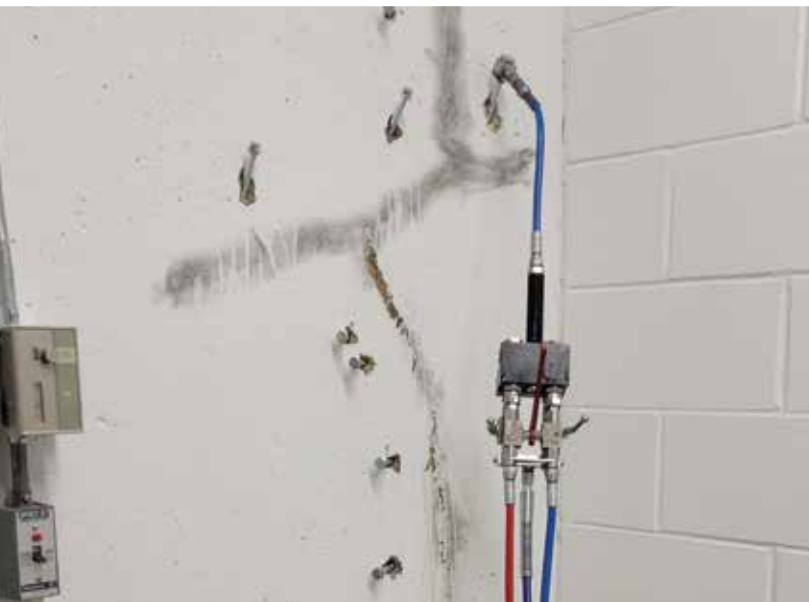


THE PROBLEM

A telecommunications switching station was facing chronic groundwater infiltration that threatened highly sensitive electrical equipment. The water intrusion stemmed from foundation settlement and was traced to four significant cracks in the structure's thick concrete walls:

- Two full-length cracks (10 feet each)
- Two six-foot cracks, one of which was actively leaking

Unlike residential foundations, the unusually thick walls at this facility presented added complexity in sealing efforts. A long-lasting, fail-safe waterproofing solution was critical to prevent operational disruptions.





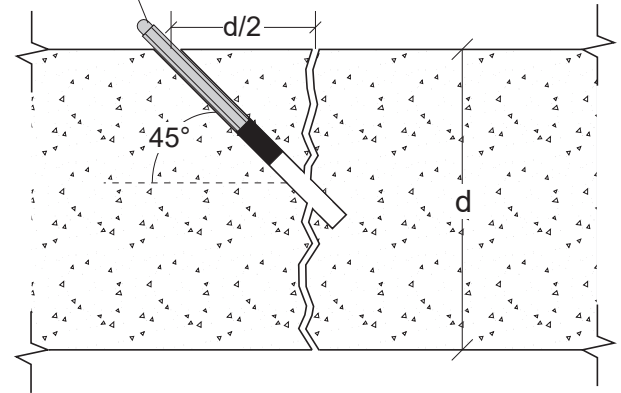
THE SOLUTION

Due to the age of the wall, thickness, and the need for a permanent solution without error to protect sensitive electrical equipment, a geotechnical engineer recommended HMI's Soil Link™ Acrylate Grout to provide a watertight seal.

The standard six-step interception process was modified to have an acid flush instead of water, when water testing, to ensure adherence by first cleaning the cracks of any dirt, organics, mold and debris built up over the many years. Hydraulic cement was also used when sealing the crack with an active water leak to ensure seal adherence.

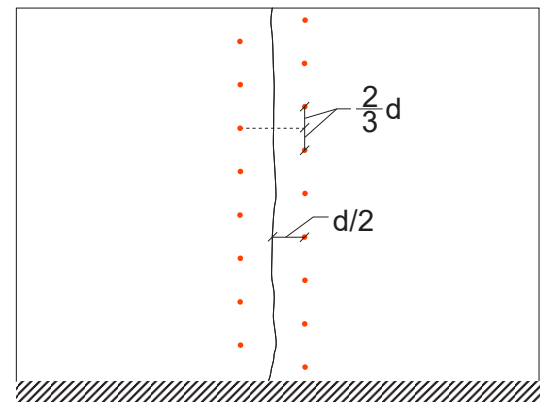
1. **Precision Drilling:** Small-diameter holes were drilled along the cracks to intercept it and allow injection points.
2. **Port Installation & Acid Solution Testing/Flushing:** Ports were installed at drilled points and tested with an acid solution to confirm crack interception and flow paths in addition to flushing out dirt and debris, including organics and mold.
3. **Indicator Ports & Epoxy or Hydraulic Cement Sealing:** Additional indicator ports were set up to monitor the grout's travel, and the surface of the crack was sealed with epoxy to contain the injection. Hydraulic cement was used to seal the crack with an active leak.
4. **Mixing & Quality Control:** Acrylate grout components were mixed and tested on-site to ensure proper gel times and performance.
5. **Injection & Solidification:** Using an easy-to-use pump, the grout was injected, filling the entire crack from bottom to top, penetrating tight spaces, and forming a flexible, watertight seal.
6. **Cleanup:** Once the grout was fully cured, the ports were removed, and the drilled holes were patched for a clean, finished appearance.

INJECTION PACKER



d = THICKNESS OF CONCRETE

● = CONCRETE INJECTION LOCATION



THE SUMMARY

The cracks were successfully sealed with HMI's Soil Link™ Acrylate Grout stopping water infiltration in its tracks. After an acid base flush cleaned out dirt, organics and debris, the low-viscosity acrylate gel effectively permeated the narrow and leaking cracks, forming a long-lasting waterproof barrier. Thus, effectively protecting the sensitive electrical equipment and solving the problem.

As a preventative measure, proper grading was performed after crack sealing by raising the concrete against the facility with HMI HF402 to help mitigate future settlement causing foundation cracking and control water flow.