

TECH TIPS

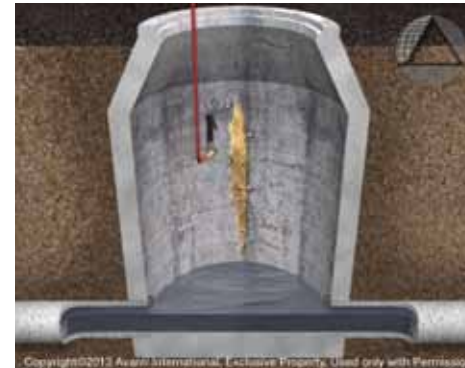
FROM NASSCO

TECH TIPS BY NASSCO IS A BI-MONTHLY ARTICLE ON TRENDS, BEST PRACTICES AND INDUSTRY ADVICE FROM NASSCO'S TRENCHLESS TECHNOLOGY MEMBERSHIP PROFESSIONALS.

NEVER LOSE MAN HOURS ON A GROUTING JOB: THE SIMPLE STUFF!

By NASSCO member Charlie Lerman, Field Service Manager and Training Instructor for Avanti International

Underground contractors, utilities and municipalities do big things well. It's the small jobs that can turn profitable projects up-side-down and lead to cost overruns. Underground structures such as manholes, lift stations, vaults, tanks and basements will eventually leak. The injection of chemical grout to eliminate intrusion of ground water in a structural defect is common, but not always profitable. There are two reasons for this: the unknowns and lack of preparation. With a little foresight, planning and preparation, these jobs can be rewarding and set your organization or team apart from others as a "problem-solver."



Representation of a defect (vertical crack) repair in a manhole.

LEAK MITIGATION CAN BE DECEPTIVE.

It's not all about the material. Labor is the driver. The drilling, mobilization, and confined space regulations all add up. On top of that, crack injection to stop infiltration is slow and methodical. What happens when the defect runs behind a plumbing system or an electrical conduit run? Often, urethane crack injection is done after the failure of several other repair methods. This means you may have a myriad of cementitious or epoxy coatings hiding the real leak. These are all man-hour eaters. Here's what can be done about it:

BE REALISTIC.

When possible, identify all the joints and structural defects with the owner beforehand. With a proper assessment, the challenging areas should no longer be unknowns. Depending on the size of the job, mock-ups are the best way to determine actual production rates. For manhole grouting, a two-man crew can comfortably seal two manholes per day including curtain grouting an older brick structure or point repair of a precast unit. For other jobs, production can vary widely depending on the type of structural defect or joint encountered. Twenty five to one hundred feet of crack or joint are typical production values. A good rule of thumb is the smaller the leak, the harder it is to seal. Try to avoid injection work if the crack or joint is not actively leaking. When no leaks are present, it is impossible to tell if you've waterproofed the joint or crack 100%, 95% or only 10%.

WATER FOLLOWS THE PATH OF LEAST RESISTANCE.

This means as you seal a leak, your product may be moving to another defect. This is called "chasing the leak". When this situation happens, it's a sign of

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progress, but can be a source of frustration. Since we all have budgets, some owners only want "x" amount of feet injected, which is understandable, but not always possible. Try setting the project expectations before you begin the work. An educated owner is the best and easiest to work with.

COMMON, BUT OFTEN OVERLOOKED, TIPS.

What makes common sense is not always common practice. Consider these helpful recommendations to keep your grouting job productive:

- Have extra injection ports onsite in case you gum one up.
- Line your grout buckets with thick mil garbage bags. This makes clean up easy, saves the pail, and prevents grout contamination from a dirty or wet bucket.
- Get a socket wrench to install packers. It really speeds up installation.
- Have extra drill bits onsite. It's just a matter of time before you hit rebar and snap one.
- Lastly, have plenty of disposable gloves because they are going to get grouted up. Do not waste money on expensive gloves.

In summary, chemical grout injections that stop leaks in cracks and joints are high pay-back activities for public or private owners. It can also be a high pay-back activity for the contracting entity with proper planning and preparation. Think safety first, then eliminate hindsight with foresight. Think through scenarios that may cost you productive man-hours and counter each with proactive alternatives. The simple stuff means manage the resources you can—be resourceful on the unknowns you can't.

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