

**TECH  
TIPS**

FROM NASSCO

**BEST PRACTICE OF INJECTION  
GROUTING IN MUNICIPAL SEWERS**

By NASSCO ICGC Co-Chair Jessica Williams, Avanti

Injection grouting is often recognized as the "original" trenchless technology of our industry. The first mainline pipe joints were sealed in 1962 in Cottonwood Falls, KS, and we have never looked back!

Every City, USA and beyond faces infiltration issues in their collection systems – even in historically dry areas. Do not let infiltration stay out of sight, out of mind. Ignoring the problem will eventually lead to worse issues – sinkholes or injury to the community. Establishing proactive grouting programs can quickly prove cost savings and infiltration reduction if completed holistically. When executed properly, injection grouting is a safe, efficient, long-term trenchless technology for infiltration control and soil stabilization needs.

There are many factors that can influence a grouting project. However, the goal is always the same: to properly install a product that will provide pipe stabilization and ultimately stop infiltration. The following are some best practices that will help to ensure your project is successful:

**Safety** – Safety is always #1. When mixing and handling injection grouts such as acrylamide, TyChem suits, rubber boots, organic respirator, nitrile gloves, and safety glasses/shields are required. To take a recognition of understanding course from NASSCO, visit [nassco.org/grouting/usopp-exam](http://nassco.org/grouting/usopp-exam) to access the Grouting Unified Safe Operating Practices Program (USOPP).

**Packer Equipment** – Inspecting remote packer



equipment daily before using is a must. Make sure to check the condition of the rubber skins, cables, winch lines, pressure sensors, connections and hoses.

**Grout Truck** – The grout truck is the heart of the operation. In the front studio, confirming that all the electronics are working correctly and keeping your workstation free and clear of trash, dirt, and debris is important. The rear section of the truck contains all the mechanical components crucial to grouting operations. Inspecting air lines, verifying hose conditions, and cleaning up chemical storage areas are key to a successful day.

**Proper Mixing** – An important aspect when grouting is to confirm your products are mixed properly. If not, gel times may be off or may not gel at all. Suspended solids could gum up your filters. Allow your tanks to mix long enough so that granules dissolve and liquids are properly mixed.

**Grout Cup Testing** – Testing tank set times are crucial. Cup tests should be performed periodically through the day when grouting. What if it is 60°F when your workday starts, and 90°F in the afternoon? It is likely your gel time will change as it is temperature sensitive. Furthermore, cup tests from the hoses that are on the hot asphalt or concrete versus from the tank inside the grout truck may yield different results.

**Grouting Log** – Keeping track of grout mixes and concentrations, temperature, gel times, specific gravity, and grout concentrations are all key aspects of grouting. This is especially important as a contractor monitors their overall grout usage and helps to deliver a consistent product.

**Gel Times** – Gel times can vary throughout the day due to changes in temperature. It is important to test your gel times regularly to confirm they are accurate. Gel times can be adjusted with optional additives such as potassium ferricyanide (KFe).

**Product Storage** – Keep products stored in their original containers and in a cool, dry spot. Keep out of direct sunlight. Do not reuse containers or drums for other use.

**Clean-Up – Daily** – Housekeeping tasks should be performed at the end of each day and include: cleaning and inspecting packers and camera equipment, cleaning PPE and disposing of items that cannot be re-worn (i.e. TyChem suit), disposing of containers according to regulations stated on safety data

sheets, and cleaning up your worksite – leave it better than how you found it!

**Clean-Up – Weekly** – If you are not grouting in 3+ days, it is recommended you flush hoses and pumps. If you do not plan to grout for a week or more, it is recommended to pump your tanks empty, and flush hoses and pumps so grout does not set up.

**TO LEARN MORE ABOUT INJECTION GROUTING AND ITS APPLICATIONS VISIT [NASSCO.ORG/GROUTING](http://NASSCO.ORG/GROUTING).**

**CATCH THE NEXT MUNICIPAL SEWER GROUT SCHOOL BEING HELD SEPTEMBER 18-19, 2024, IN WAUKESHA, WI. FOR REGISTRATION INFORMATION, VISIT [NASSCO.ORG/GROUTING/TRAINING](http://NASSCO.ORG/GROUTING/TRAINING).**

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



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