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TECH TIPS FROM NASSCO

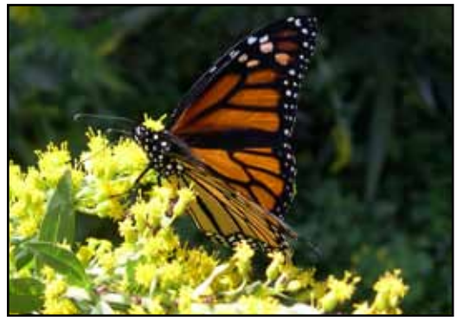
Tech Tips by NASSCO is a bi-monthly article on trends, best practices and industry advice from NASSCO's Trenchless Technology Membership professionals.

THE SPRINGTIME ENVIRONMENT AND ITS EFFECTS ON LINING

By NASSCO member Jason Mathey, Director of R&D, LMK Technologies

Mother Nature is one tough lady, and most of us have to deal with her mood swings. You can't fight her, only work with her. For crews installing Cured-in-Place Pipe (CIPP), she can either make your day or ruin it very quickly.

After the brutal winter of 2014, it's hard to imagine the transitional season of spring could cause havoc. But it does. The weather is unpredictable and this makes it hard on the majority of us that use thermo-set resins. What is happening below ground in and around the pipe is equally as important as the ambient air temperature.



The biggest challenge is to set your ambient resin cure time fast enough to cure in a timely manner, but allow for enough working time to install.

SPRING TEMPERATURES

Spring temperatures can fluctuate significantly, and setting your chemicals to do what you want them to do can be complicated. The majority of polyester resin users are held to a chemical makeup that is difficult to change on the fly. Epoxy can be even more challenging. Most have only two blends, one for summer and one for winter, which allow for much less adjustability. The biggest challenge is to set your resins high enough to cure in a timely manner, but allow for enough working time to install. To help our installers learn how to balance between these two important factors, I've provided some tips below that I hope you will find useful.

1. BASE YOUR RESIN ON THE COLDEST TEMPERATURES OF THE PIPE BEING LINED. Control wet-out and installation, as you are going to have less work time during weather and temperature changes. Spring can be sunny and warm. The snow has melted and the sun is warming the ground. The evidence around us says we need to slow our chemicals down and give us more working time to deal with warmer ambient air temperatures. This, however, can be a big mistake. Melted snow cools the pipeline, and this can create a situation that extends the cure times of the resin. It may be 70 degrees outside, and the pipeline is sitting in water that can be nearing 35-40 degrees. Active infiltration can further slow the cure time of the liner in the pipeline.

2. BASE YOUR CHEMICALS AND CURE TIMES ON THE DEEPER, COLDER SECTIONS OF PIPELINE. Pipeline depth can have a stronger impact on the cure times of resin at this time of year. Too many times I have seen a liner fail in a pipe that starts shallow and ends deep. The shallow pipe warms more quickly while the deeper section stays cold much longer. The result is a liner that is only cured half way through if not held, under pressure, long enough for the cure to be effective throughout the pipeline.

3. CONTROL YOUR AMBIENT WORK ENVIRONMENT. Trailers with air conditioning are a big advantage. Chill your resin per the manufacturer's specifications. Use tents to keep the sun off of your equipment and liner before and during wet-out and install. Check that all equipment and tools are set up and ready to proceed with the installation. This includes checking fuel in compressors, setting up tools and equipment, and making sure everything is in proper working order. You want to do everything you can to extend the working time of your resin and shorten the time it takes to install the liner.

4. GIVE YOURSELF THE EXTRA TIME IT TAKES TO CURE. The depth of the pipe, the amount of snow you had, and how long it has been warm, all affect proper curing time. Consider setting your chemicals a little higher cure time, so that they can generate internal heat needed to cure the liner.

Finally, do not become too comfortable with your process. It is then that small things get missed, and it is always the small things that can cause a proper liner cure. Most importantly, if there is ever a doubt that a liner has not cured enough, extend the curing time.