



THE TRENCHLESS ADVANTAGE

As a specialist in (trenchless) horizontal directional drilling (HDD) of water mains, AVERTEX Utility Solutions Inc. understands that a key to project completion is having the right systems in place to ensure rapid, accurate PVC pipe connectivity. With a growing number of Canadian municipalities looking into trenchless drilling as a means to preserve existing infrastructures, AVERTEX is leading the industry with innovative ways to overcome often challenging construction conditions. A key component of AVERTEX's trenchless drilling model is the NAPCO Cobra Lock® System. With Cobra Lock, the company says it has been able to help municipalities lower un-shrinkable fill (u-fill) requirements, minimize disruptions to local communities, and improve overall service reliability.

Application:
Water Main

Project Type:
Horizontal Directional Drilling
(Trenchless)

Product Used:
Cobra Lock®

Contractor:
AVERTEX Utility Solutions Inc.

CHALLENGE

When it comes to water main construction, disruptions to municipal communities and infrastructures can be widespread and costly. Traditional open-cut requirements and granular u-fill requirements can be extensive, not to mention the impact on local traffic and services.



APPLICATION

As municipal agency concerns about the disruption of open cut construction grow, trenchless drilling is increasingly gaining acceptance as a viable alternative, according to Jason Kottelenberg, Contract Manager for AVERTEX in Orangeville, Ontario. "By working trenchlessly rather than the traditional open cut approach, cities can save a lot of digging and backfill costs," he explains. "And since a lot of municipalities use PVC pipes, it often makes more sense in certain areas of a city to work trenchlessly. When deep drilling is involved invariably, it is more cost-effective."

Trenchless drilling however is not without its challenges, mainly because of working space limitations. "You're often working in tighter areas and having to avoid a bunch of existing surface features such as roads, sidewalks or driveways," Kottelenberg notes. Planning can also be more complicated, he adds. "You have to go in and locate all existing utilities to determine and verify depths prior to bringing in a directional drill unit at which time you have to navigate your way through very limited parameters."



MUNICIPAL CASE STUDY

An integral consideration is maintaining the bend radius of the product being pulled, he explains. “You always have to keep in mind when drilling the maximum bend radius of your product pipe.”

SOLUTION

Kottelenberg notes that PVC piping with a proper locking system is ideally suited to trenchless drilling because of its flexibility over more traditional materials. “You can pull in the pipe, attach it cartridge style and just put in one piece after another. That’s a tremendous benefit over fused pipe. If you have 150 metres to work through for example, you would have to have 150 metres of pipe (fused pipe) strung out behind the bore path. With cartridge PVC pipe like Cobra Lock you can do it in 20 foot (6 metre) sections which are much more flexible and takes up a lot less space.” He notes that this flexibility is increasingly important as the demand for trenchless drilling keeps building. “Nobody was doing it 10 years ago. Then it started creeping into plans little by little. But over the last five years, it has been picking up more and more. I’d say 20% of the projects we look at allow trenchless drilling work on average. It can be as high as 45% in some regions.”

Part of that momentum is a direct result of having systems that can be installed quickly, efficiently and error-free. AVERTEX began working with the Cobra Lock system in 2005. “We chose it because of how simple it was to assemble,” Kottelenberg says. “The spline lock design and positive stop within the couplings makes it very user friendly. If it’s not put together properly, the spline won’t go in it’s as simple as that. That’s important when you are working on something where accuracy is everything.”

While he has worked with other locking systems in the past, Kottelenberg says the process involves many more steps and leaves more margin for error. “With Cobra Lock it just wraps around the pipe, you don’t have to dig extra deep below the pipe and you always know everything is lined up perfectly. It couldn’t be simpler or faster.” Now he says, when AVERTEX goes trenchless, “When PVC is required we use Cobra Lock virtually exclusively, because we can always get the job done a lot easier and more cost effectively. And there’s a lot less disruption and inconvenience for local residents.

