

THINGS TO CONSIDER BEFORE SELECTING FLEXIBLE PIPE

MANHOLE CONNECTIONS:

Flexible pipe requires flexible manhole connections per ASTM 2321 and recommended by the leading flexible pipe manufacturers literature. The added costs of manhole adaptors and Kor-N-Seal boots along with additional labor for installation should be taken into account and clearly detailed when specifying flexible pipe.



TESTING REQUIREMENTS:

Will mandrel testing be required post installation pursuant to MDOT specifications? Who is responsible for the costly repairs if the mandrel testing determines the flexible product was compromised during the installation or backfill process?

TRENCH DETAIL:

Flexible pipe requires substantially different trench details than what is required for the installation of Reinforced Concrete Pipe. Flexible pipe gets most of its strength from the bedding and trench detail. Trench details with clear, specific bedding and backfill requirements should be included when specifying flexible pipe.



INSTALLATION:

Flexible pipe requires optimal field installation to achieve its strength, extra supervision and inspection should be accounted for to ensure the installation is optimal when the 'in the field' environment is always dynamic.

LONG TERM PERFORMANCE:

Flexible pipe requires additional care and caution for the entire life span of the project. Trenchless technology, future development, and additional infrastructure needs 50 - 100 years into the future must be considered when selecting flexible pipe.



Durable Reliable Infrastructure



Subject: Rigid vs Flexible Pipe constructed under Wisconsin DOT paving projects

To: Owners, Designers and Contractors,

The State of Wisconsin, starting with the 2016 construction season, changed the design and construction specifications to allow flexible pipe as an alternative to rigid pipe for certain storm sewer projects in conjunction with roadway projects using Federal and/or State funding.

The flexible pipe industry is suggesting designers and contractors consider substituting flexible pipe for rigid pipe under State of Wisconsin let storm sewer projects. The basis behind this recommendation is that the flexible pipe is cheaper, thus reducing costs for the owner.

Although the cost of the pipe may be less, there are added costs to the installation process that need to be taken into consideration. There are also risks to the designer, contractor and owner that you need to be aware of. Here are a few factors to keep in mind.

1. The Average Daily Traffic has to be less than 7,000 vehicles per day. This does not take into consideration the associated truck volumes, which can include heavy farming equipment. Should the pipe fail, there are potential costs to the owner, designer or contractor depending on the time of the failure.
2. The depth of the pipe needs to meet certain criteria. This does not take into consideration the depth to high ground water (buoyancy) nor the need for shoring the trench (loss of compaction when moved).
3. The contractor is required to do mandrel testing to determine if there is any deformation of the pipe. Both Minnesota and Illinois require 100% of the pipe tested with a waiting period of a minimum of 30 days after backfill reaches final subgrade. Wisconsin only requires 10% of the pipe tested and leaves the waiting period up to the inspector. With deflection greater than 5%, the pipe must be relayed or replaced with the process starting all over. The owner and designer need to ask if the overall project schedule can afford the delays that may occur? The contractor needs to know they are responsible for the costs associated with the relay or replacement.
4. Contractors need to know that inspectors will more closely monitor proper backfill for the flexible pipe. Your estimate of cost has to include the need to provide backfilling at 6 inch lifts from the spring line to one foot above the pipe while making sure the flexible pipe is not moving nor being deformed.

What may appear to be a cost savings on the surface, may end up costing those involved in the process much more, now and/or in the future. As the owner, designer or contractor, you need to ask yourself, are these risks worth taking?