

Know

You Should



A Message from the American Concrete Pipe Association

Bulletin No. 131

When is the Correct Pipe Material Important?

In the ongoing debate between rigid and flexible pipe suppliers as to what is the best, most cost-effective pipe alternative, the final selection should involve:

- the ability to perform in accordance with the engineer's design for the entire project life
- the pipe uses
- the ability to install the product to achieve structural integrity
- the overall cost.

Although there are many factors to consider, to sacrifice any of the above would jeopardize the project.

An example of the importance of these factors is made evident in the case of *Arvada Fire Protection District's* human interest story that can be found on the internet at www.arvadafire.com/press1.htm. The story explains how public safety officials were called upon to save a dog, stuck in a 24 inch (600 mm) HDPE storm drain pipe that was reduced to only 12 inches (300 mm). Since the pipe upstream had totally collapsed, the dog could go no further nor reverse direction in the small diameter pipe.



It took six firemen three hours equipped with heavy machinery and special camera equipment to rescue this canine in distress.



Back-breaking work for firefighters trained to save human and animal lives.

The three hour rescue involved at least six firefighters, a backhoe, a special camera, and cost taxpayers time and money, while making firefighters unavailable for other emergencies. This particular installation was through backyards of a residential area where the pipe had only three feet (one meter) of earth load with no traffic load. Still, the pipe deflected to one half the

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original diameter. It is evident this pipe had not performed as specified. This application emphasizes how critical the installation of flexible pipe is to the performance of the pipe. It is also a reasonable assumption that the line will continue to deflect vertically and horizontally from this damaged section since the bedding envelope has been compromised. Flexible pipe suppliers state their products should work PROVIDED the contractors build the structural strength into the soil envelope. Unfortunately this has proven to be extremely difficult.

In comparison, concrete pipe is delivered with the structural strength built-in. While installation is still important to the pipe, it is not as critical. Some may say that concrete pipe is too heavy. However the additional weight is an advantage. Precast concrete pipe is heavy because the structure is provided as part of the pipe, ensuring the project will perform as designed. Compaction can be performed without the pipe moving and flotation is generally not a concern. Any initial cost savings from using flexible products are greatly out-weighed by the cost of a replacement installation.

One of the greatest concerns throughout North America today is the status of the deteriorating infrastructure and the astronomical investment that will be required to maintain, upgrade or replace current systems. With this in mind, it makes great economical and design sense to use products that require only one installation in a lifetime.



Count on Concrete



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