

Understanding deformation in flexible pipe

Good collection system practices require regular inspections and ongoing maintenance. Recording the condition of assets requires a standard set of terms, procedures, and ratings. The Pipeline Assessment & Certification Program (PACP) helps fill this need.

The Defect Detective series, supplied by the National Association of Sewer Service Companies, provides an introduction to PACP and offers the opportunity to put your defect detective skills to the test.

Jerry Weimer

This installment focuses on the proper use of the Deformation code in flexible pipe (DF).

As opposed to pipes made from rigid materials, flexible pipe can undergo deformation and other defects without a visible loss of structural integrity. When using PACP codes, it is important to know the pipe material to determine if it is flexible.

The DF code is further described using modifiers and one or two clock positions depending on the size of the defect as follows:

- A Bulging Round (DFBR) is where one or more rounded projections protrude into the pipe.
- A Bulging Inverse Curvature (DFBI) is where an inward bulge is sharp crested taking on the shape of a heart point or shark fin.



Photo A

- Creasing (DFC) is where an outward folding of pipe wall in the longitudinal direction creates a crease in the wall of the pipe.
- Elliptical (DFE) is where the round pipe is compressed into an elliptical or oval shape.

Deformation in rigid pipe typically involves significant structural defects (fractures, broken pipe, etc.) which do not need to be coded if they are part of the deformation. However, in flexible pipes structural defects must be coded along with the deformed code as they are a sign of more significant structural distress. All other codes, O&M, Construction, and Miscellaneous always should be coded as well.

Jerry Weimer is president at Jerry Weimer Consulting (Cincinnati, Ohio).

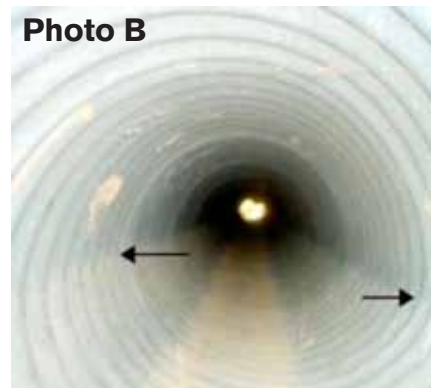


Photo B

Testing your deformed flexible skills

1. Referring to Photo A, which modifier would be used to describe this defect?
2. Referring to Photo B, which modifier would be used to describe this defect? (The arrows in this image give a hint.)
3. Which of the following pipe materials are flexible?
 - a. Ductile iron
 - b. Concrete
 - c. High-density polyethylene pipe
 - d. Vitrified clay pipe
4. If there is a fracture, along with deformation in polyvinyl chloride pipe, should it also be coded?
5. Can DF codes be used for cured-in-place pipe?

Decoding the February Defect Detective



Is this tap a factory, break-in, rehabilitated, or saddle tap?

This is a factory tap (TF), or a purpose-made or preformed pipe fitting built into the sewer during construction. The joints on either side show that it is a fitting, and the smooth transition between the main line and the lateral

pipe is consistent with factory-made taps.

The tap is not intruding, and assuming it is not defective or capped, what modifier should be used to describe the tap?

The flow coming out of the tap verifies that there is activity. Therefore, the modifier is A (activity), and the code is TFA.

If there is no flow coming from the tap, and there is no building in front of the tap, should we code it abandoned (B)?

Before using the B modifier, the inspector needs to verify that the pipe is abandoned via dye-testing or some other means. Verification is important to prevent the possibility of cutting off a property's lateral if there is a connection.

If the flow can be observed as infiltration running from a joint 2 feet up the lateral pipe, how would the tap be coded?

The defective (D) modifier is used to describe any defect observed inside the lateral from the sewer main. A description of the defect, in this case, infiltration running from a joint (IRJ), would be entered in the Remarks Column using appropriate PACP codes.