

Visu-Sewer, Inc.
Specifying Trenchless Sewer Rehabilitation Projects
2018 Engineers Brown Bag Sessions

Summary

Sewer Inspection

- Specify all cleaning work be completed per the NASSCO Jetter Code of Practice.
- Specify all pipeline inspection work be completed in accordance with NASSCO Pipeline Assessment and Certification Program (PACP).
- Consider specifying lateral inspection from the mainline using Lateral Evaluation Television System (LETS).
- Consider dye water flooding where sanitary sewer is installed in close proximity to storm sewer.

Manhole Inspections

- Recommend performing manhole inspections when specifying pipeline inspection work.

Manhole Rehabilitation

- Specify manhole rehabilitation per ASTM F2414-04 - Standard Practice for Sealing Sewer Manholes Using Chemical Grouting

Pipeline Rehabilitation

- Specify mainline sewer rehabilitation per ASTM F2304-10 – Standard Practice for Rehabilitation of Sewers Using Chemical Grouting

Lateral Connection Grouting

- Specify lateral connection grouting per ASTM F2454-05 – Standard Practice for Sealing Lateral Connections and lines from the mainline Sewer Systems by the Lateral Packer Method, Using Chemical Grouting.
- Laterals constructed of cast iron or with roots or mineral deposits cannot be grouted because the line cannot be properly sealed.
- Need to specify grouting length

Manhole Lining

- Cementitious lining is a structural, monolithic repair from bench to frame with a 30-year design life.
- Preparation includes water blasting, leak grouting, and debris removal.
- Specify manhole lining per ASTM F2551-09 – Standard Practice for Installing a Protective Cementitious Liner System in Sanitary Sewer Manholes.

Manhole Lining

- Epoxy lining is a non-structural lining system for use in highly corrosive atmospheres.

- Common epoxy lining applications are force main discharge manholes, manholes on large diameter interceptor sewers, and lift station wet wells.
- Specify epoxy lining systems using manufacturer's information as no ASTM standards exist.
- Polyurethanes and Polyureas require a dry substrate
- Consider Cured-in-Place-Manholes (CIPM) for special manholes – No ASTM

Pipe Lining

- Cured in Place Pipe (CIPP) lining is a fully-structural, permanent repair system with a 50-year design life.
- CIPP lining can be installed from manhole to manhole or sectional (spot) lining
- Consider specifying lateral connection grouting after lining.
- Specify pipe lining per ASTM F1216-09 – Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube.
- Sectional lining can be specified using “applicable sections” of ASTM F1216-09
- Design Considerations
 - Host Pipe Condition (partially or fully deteriorated)
 - Soil Density
 - Groundwater Load
 - Ground Cover
 - Ovality Reduction Factor
 - Live Load (surcharge)
- Consider specifying a minimum wall thickness – 6 mm FINISHED thickness.
- Consider specifying hydrophilic seals at manhole connections.
- Consider specifying brushing/buffing service connections after reinstatement.
- Consider specifying material testing of 10% minimum.
- Remove references to “sliplining” and “fold and form” pipe from CIPP specifications.
- Specify lateral replacement AFTER CIPP lining using Insert-A-Tee or saddle