

# Allowable Cleaning Methods In Various Pipe Materials

“Mechanical cleaning tools such as cutters and brushes should not be used in plastic pipe since they can score the pipe and reduce the flow characteristics by increasing the pipe wall roughness. A suitable pipe identification system should be in place to warn the operator where plastic pipe has been installed.”

- *Optimizing Operation, Maintenance and Rehabilitation of Sanitary Sewer Collection Systems*<sup>4</sup>

| Cleaning Process                   | Ceramic Pipe Material | Flexible Thermoplastic Pipe Materials |                      |                       |                       |
|------------------------------------|-----------------------|---------------------------------------|----------------------|-----------------------|-----------------------|
|                                    | VCP                   | PVC                                   | HDPE                 | CIPP                  | FRP/GRP               |
| <b>Hydro-Jetting Parameters</b>    |                       |                                       |                      |                       |                       |
| Safe Hydro Pressure (psi)          | 5,000 <sup>1</sup>    | 1,740 <sup>2</sup>                    | Unknown              | 1,500 <sup>5</sup>    | 1,200 <sup>4</sup>    |
| Jet Angle Range (degrees)          | 6 - 90 <sup>1</sup>   | 6 - 15 <sup>2</sup>                   | 6 - 15 <sup>3</sup>  | up to 40 <sup>5</sup> | 6 - 15 <sup>4</sup>   |
| Max. Nozzle Weight                 | 125 lbs. <sup>1</sup> | Unknown                               | Unknown              | Unknown               | 5.5 lbs. <sup>4</sup> |
| Min. Jet Standoff from Pipe Wall   | 1/4 in. <sup>1</sup>  | 1 in. <sup>2</sup>                    | 1 in. <sup>3</sup>   | Unknown               | Unknown               |
| Jet Stationary Position            | 5 min. <sup>1</sup>   | 60 sec. <sup>2</sup>                  | 60 sec. <sup>3</sup> | Unknown               | Unknown               |
| <b>Mechanical Cleaning Methods</b> |                       |                                       |                      |                       |                       |
| Mechanical/Power Rodders           | Yes <sup>1</sup>      | No <sup>2</sup>                       | No <sup>6</sup>      | No <sup>5,6</sup>     | No <sup>4,6</sup>     |
| Bucket Machines                    | Yes <sup>1</sup>      | No <sup>2</sup>                       | No <sup>6</sup>      | No <sup>5,6</sup>     | No <sup>4,6</sup>     |
| Brushes                            | Yes <sup>1</sup>      | No <sup>2</sup>                       | No <sup>6</sup>      | No <sup>5,6</sup>     | No <sup>4,6</sup>     |
| Chain Flails                       | Yes <sup>1</sup>      | No <sup>2</sup>                       | No <sup>6</sup>      | No <sup>5,6</sup>     | No <sup>4,6</sup>     |
| Cable Flails                       | Yes <sup>1</sup>      | No <sup>2</sup>                       | No <sup>6</sup>      | No <sup>5,6</sup>     | No <sup>4,6</sup>     |
| Grinders                           | Yes <sup>1</sup>      | No <sup>2</sup>                       | No <sup>6</sup>      | No <sup>5,6</sup>     | No <sup>4,6</sup>     |
| Root Saws                          | Yes <sup>1</sup>      | No <sup>2</sup>                       | No <sup>6</sup>      | No <sup>5,6</sup>     | No <sup>4,6</sup>     |
| Tap/Can Cutters                    | Yes <sup>1</sup>      | No <sup>2</sup>                       | No <sup>6</sup>      | No <sup>5,6</sup>     | No <sup>4,6</sup>     |
| Hydraulic Root Saws                | Yes <sup>1</sup>      | No <sup>2</sup>                       | No <sup>6</sup>      | No <sup>5,6</sup>     | No <sup>4,6</sup>     |

1 ASTM C1920 *Standard Practice for Cleaning of Vitrified Clay Sanitary Sewer Pipelines*, 2021

2 ASTM F3618 *Standard Practice for Cleaning of Thermoplastic Solid Wall Sanitary Sewer Pipelines*, 2022

3 Plastics Industry Pipe Association of Australia Limited 2009, *Water Jet Cleaning of Plastics Pipes*, <https://www.pipa.com.au/wp-content/uploads/2018/10/POP205.pdf>

4 Iplex Pipelines Australia Pty Limited 2017, *Flowtite® GRP Pipe Systems Cleaning*, viewed 27 April, 2017, <http://www.iplex.com.au/iplex.php?page=lib&lib=31&sec=232&chap=302>

5 Insituform Technologies, LLC 2018, *Inspection and Cleaning Guide for Cured-in-Place-Pipe (CIPP)-lined Pipes*

6 Black & Veatch Corporation for ASCE and U.S. EPA 2004, *Sanitary Sewer Overflow Solutions*, [http://www3.epa.gov/npdes/pubs/ss0\\_solutions\\_final\\_report.pdf](http://www3.epa.gov/npdes/pubs/ss0_solutions_final_report.pdf)