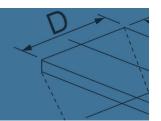


Allowable Cleaning Methods In Various Pipe Materials



"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 Systems⁴

Cleaning Process	Ceramic Pipe Material	Flexible Thermoplastic Pipe Materials			
	VCP	PVC	HDPE	CIPP	FRP/GRP
Hydro-Jetting Parameters					
Safe Hydro Pressure (psi)	5,000¹	1,740²	Unknown	1,500⁵	1,200⁴
Jet Angle Range (degrees)	6 - 90¹	6 - 15²	6 - 15³	up to 40⁵	6 - 15⁴
Max. Nozzle Weight	125 lbs.¹	Unknown	Unknown	Unknown	5.5 lbs.⁴
Min. Jet Standoff from Pipe Wall	1/4 in.1	1 in.²	1 in.³	Unknown	Unknown
Jet Stationary Position	5 min.¹	60 sec. ²	60 sec. ³	Unknown	Unknown
Mechanical Cleaning Methods					
Mechanical/Power Rodders	Yes¹	No²	No ⁶	No ^{5,6}	No ^{4,6}
Bucket Machines	Yes¹	No²	No ⁶	No ^{5,6}	No ^{4,6}
Brushes	Yes¹	No²	No ⁶	No ^{5,6}	No ^{4,6}
Chain Flails	Yes¹	No²	No ⁶	No ^{5,6}	No ^{4,6}
Cable Flails	Yes¹	No²	No ⁶	No ^{5,6}	No ^{4,6}
Grinders	Yes¹	No²	No ⁶	No ^{5,6}	No ^{4,6}
Root Saws	Yes¹	No²	No ⁶	No ^{5,6}	No ^{4,6}
Tap/Can Cutters	Yes¹	No²	No ⁶	No ^{5,6}	No ^{4,6}
Hydraulic Root Saws	Yes¹	No ²	No ⁶	No ^{5,6}	No ^{4,6}

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

⁶ Black & Veatch Corporation for ASCE and U.S. EPA 2004, Sanitary Sewer Overflow Solutions, http://www3.epa.gov/npdes/pubs/sso_solutions_final_report.pdf



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