

GUIDELINES FOR PRESSURE CLEANING THE INTERNAL DIAMETER OF DUCTILE IRON PIPE

The Ductile Iron Pipe Research Association (and its Member Companies), Federal Signal Corporation (and its subsidiaries Vactor, Elgin, Guzzler, Jetstream & Ravo), and Induron Coatings Inc. participated in a pressure cleaning research program which was conducted by the Missouri University of Science and Technology – High Pressure Waterjet Laboratory.

The test program included asphaltic seal coated cement-mortar lined and Protecto 401™ lined ductile iron pipe which resulted in guidelines for the pressure cleaning of the inside diameters of ductile iron pipe. Through a collaborative effort with the organizations above and the City of Moline, Illinois, field tests were conducted and the guidelines verified as effective and safe for cement-mortar and Protecto 401™ lined ductile iron pipe.

GUIDELINES ARE AS FOLLOWS:

1. The nozzle shall be configured with fan jets only (no round jets).
2. The fan jets should be oriented at a maximum angle of 30 degrees to the pipe wall.
3. The nozzle shall be a minimum of 2-inches standoff from the pipe surface.
4. The nozzle assembly shall be self-rotating and incorporate a rotational control mechanism - target speed of 30 rpm.
5. The water pressure at the nozzles shall be no more than 2,500 psi. (2:1 Safety Factor- Testing performed by VACTOR, DIPRA, and the University of Missouri-Rolla at the High Pressure Waterjet Laboratory)
6. The nozzle assembly shall have non-abrasive wheels and/or UHMW (ultra-high molecular weight) polyethylene skids positioned so that at no time does the nozzle assembly contact the lining of the pipe.
7. The nozzle assembly shall continually move when pressure washing with no hesitation in the pipe.
8. All hose couplings, hoses, etc. shall be smooth so as to facilitate movement across the pipe joints without creating damage to the lining.

Pipe diameters of 24-inch and larger may require additional passes for effective cleaning.



VACTOR BLUE TWISTER NOZZLE (OR EQUAL) AND APPROPRIATE ASSEMBLY

Although research shows no significant damage in testing, the decision to pressure wash, if made by the customer, engineer, or installer, may present some risk of damage to the Protecto 401™ lining.

Any such risk is dependent on water pressure, speed, jet design and angle to the lining, distance of the jet from the lining, type of lining, and other factors.