



**GUIDE OF
WATER JET CLEANING OF PLASTIC PIPES**

Environmental conditions during operation bring residues on pipe inside surface. Therefore high-pressure water jet cleaning is a common use according to practice of the situation. This application should be done properly in order to avoid a potential damage on pipe surfaces due to water emitted under high-pressure through a jet nozzle.

Nozzle Type

- The external surface of the nozzle should be smooth.
- Nozzles with jet holes around the circumference are preferred.
- Nozzles with flailing chains, wires or aggressively rotating nozzles should not be used.

Jet Angle

Nozzles with forward facing jets should be fitted with drain bars to reduce the likelihood of the nozzle turning inside the pipeline. The water jet discharge angle should be between 6° and 15° relative to the axis of the pipe. (See Figure 1.)

Standoff Distance

Whenever possible, a minimum standoff distance between the water jet orifice and the inner pipe wall of 25mm should be maintained. (See Figure 1.) If necessary, jetting/swabbing sleds with several runners may be used to ensure the standoff distance is maintained. It is acknowledged however, that the small internal diameter of many pipelines will prevent the use of sleds.

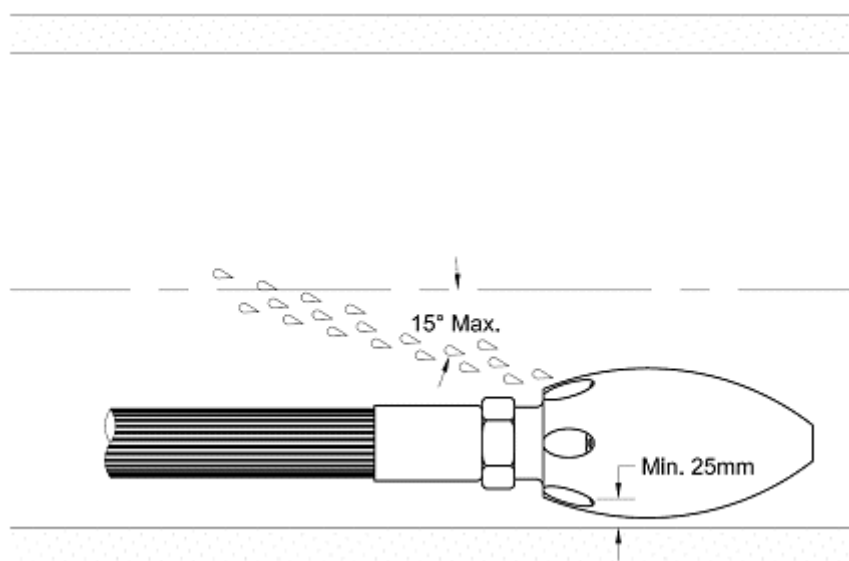


Figure 1: Jet angle detail

Special care should be taken at joint area where high water jet should not be contacted with pipe end. Water jet application should be made at least 50 mm away from the joint area to avoid any wall layer peel off from the edge (See Figure 2).

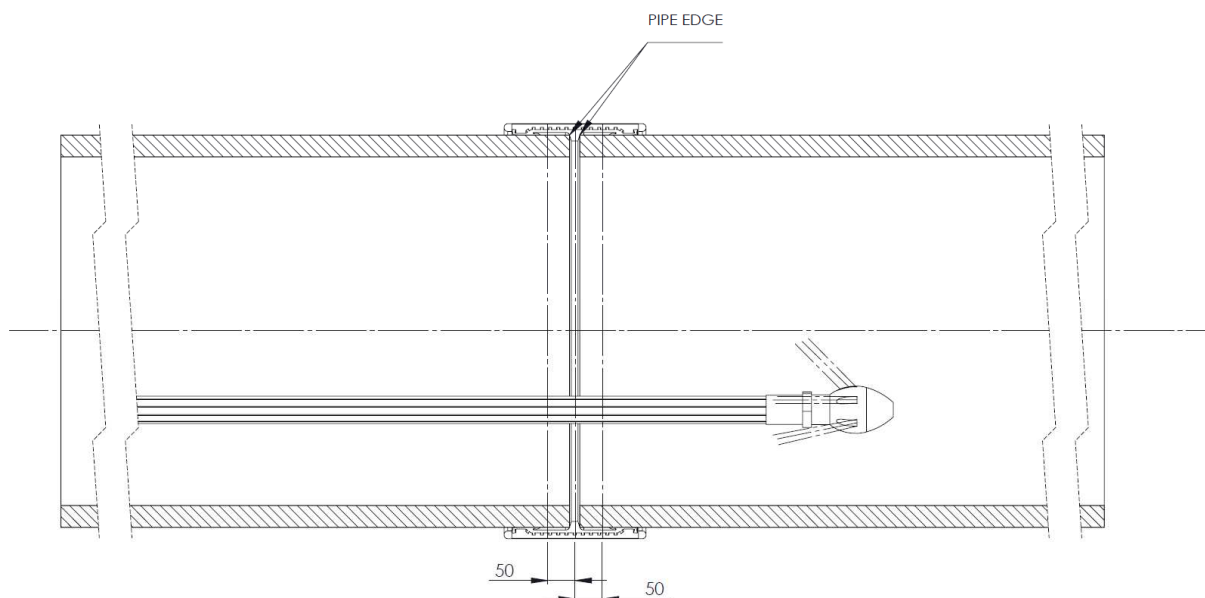


Figure 2: Application

Maximum Hold Time and Nozzle Speed

The maximum time a nozzle is permitted to remain stationary in a pipeline should not exceed 60 seconds. The forward/backward movement speed of the nozzle should be minimum 30 meters / minute. Duration of stay should not exceed 10 seconds at joint area.

Maximum Pressure at the Nozzle

Table 1: Maximum recommended jetting pressures

Pipe Material	Maximum Recommended Pressure for Pipes in Good Condition
PVC-U, PVC-M	12,000 kPa
ABS	12,000 kPa
PE	12,000 kPa
PP	12,000 kPa
GRP*	8,000 kPa

References

1. Lambert, J; Orman, N. R; Cant, J; Trew, J; Moy, F; Drinkwater, A (2005) **Sewer Jetting Code of Practice, 2nd Edition**, WRc Swindon, August 2005.
2. TEPPFA (2006) **The Plastic Pipes and Fittings Industry, Best Practice for effective jetting of sewer pipes**, a publication by The European Plastic Pipes and Fittings Association (TEPPFA), Brussels