



Title	Joint Restraints on existing Ductile Iron and Cast-Iron Piping
Issue Date	January 5, 2021
Document #	108.01

Precautions must be taken when installing Restraint devices on existing buried Iron piping. Iron pipe for utility service in the United States has been produced since the late 1800's and can be an issue with modern joint restraints. Here are some of the precaution that should be addressed.

The Installer should check the Pipe O.D. and match it to an O.D. chart and make certain it will accept the restraint per the manufacturer's recommendations. Pipe end must not be out of round and should be square cut on the end.

Pipe must be cleaned to remove any rust or patina to enable the restraint's gripping components to make full contact with the pipe. Older cast iron pipe may not have the annealing or surface texture to for the design of the wedge and set screw type restraints. Any pipe end with excessive pitting due to corrosion must be avoided, or that section replaced. A wire brush or chain style pipe scrapper is also recommended to clean the pipe so that it can be inspected to ensure an even surface for the joint restraint to engage the pipe.



Pipe Style Scraper



Wire Brushes

Extra caution should also be taken when installing Wedge Action and Set Screw style Restraints on older Cast-Iron Pipe, to avoid possible pipe splitting or cracking. If splitting or cracking is a concern using a harness / full circle style restraint device is recommended.

**Reference:**

- AWWA C600 - Installation of Ductile-Iron Mains and Their Appurtenances
- AWWA C110 - Ductile-Iron and Gray-Iron Fittings

