

Technical Bulletin #15811

Air Testing of Plumbing Piping Systems

Once a rough-in is completed on a piping project, it is important to test and inspect all piping after installation and before its use. The purpose of testing is to check the installation for leaks and to correct these prior to putting the system into service. In all installations, installers should comply with all local codes, regulations, manufacturers' instructions and architect/engineer specifications.

Air testing – of any piping system – is not a system capability issue; it is a life-safety issue. A pipe segment withstands air pressure in exactly the same manner as it withstands hydrostatic pressure; the physics don't change. What is different is the failure mode should the pipe rupture for any reason including impact from a tool, concrete block, scissor lift or, as in one unfortunate case, an inexperienced workman cutting into a pressurized line.

Air Testing vs. Water Testing

Water is not compressible and cannot store energy through compression, so under these scenarios nothing threatening will occur. Air is compressible and will store energy under compression which will release explosively, possibly throwing shards of pipe, test plugs, fittings or debris. These explosive events have caused serious injury and death. A major manufacturer of test equipment reported on an incident where, due to a faulty test gauge, a test ball was ejected and struck a young man, killing him. The system was being tested at 3.5 psi. For these reasons OSHA has published a series of bulletins warning of the dangers of air testing which can be found here, https://www.osha.gov/dts/hib/hib_data/hib19880520.html.

Safety First

Charlotte Pipe has great respect for the workmen of this country and for this reason we vigorously warn against air testing with any piping product we manufacturer. We think it unfortunate that any manufacturer would compromise worker safety for a competitive advantage – we will not.

For the reasons stated above, air testing of piping systems has been disapproved in plumbing codes at the State and model code level.

