**Note:** The following is a review of the five installer performed tests required by the NFPA-99 2012, Please read the NFPA-99 2018 5.1.12.2.1 for more details. Project specifications may require further tests, please read the specs for each job.

All these tests must be performed and documented by the installer prior to verification, please visit [www.MedGas.com](http://www.MedGas.com) for sample forms.

**Initial Piping Blow Down:** The initial blow down must be done after the piping distribution system is assembled and before any outlet/inlet back bodies or sensors/gauges or source equipment is installed. We recommend doing this at the end of every shift. Connect N2NF to the recently completed system and blow clear from each leg any debris, charge your hose and quarter turn ball valve to 75-90PSI and blast the lines clear. Start at the far end of the longest leg working your way back to the shortest. You are looking for any debris to come out of the tubing, your result should be zero particles of copper or copper-oxide.

**Initial Pressure Test:** This is a short test to determine if there are any leaks in the pipe joints only. The ability to valve off this portion of the distribution system from the existing portion is required. Install a valve (if necessary) and all rough ins leaving out sensors and gauges that can be damaged at 300PSI. Charge the system to 1.5x times the working pressure or 150PSI, whichever is greater. The pressure needs to be maintained while each joint is inspected for leaks using a leak detectant that is safe for oxygen and contains no ammonia. Ammonia negatively reacts with copper, weakening its hoop strength.

**Initial Cross Connection Test:** Install the inlet/outlet face plates. Installers have one cross connection testing method available to them, the individual pressurization method. All gases are reduced to atmosphere pressure and all sources disconnected. Connect and charge one gas distribution system using N2NF to 50PSI. Using the appropriate adaptors check each outlet to ensure only the outlets of system being tested have pressure. When all the outlets have been checked drain the pressure disconnect the source and repeat till all the gasses have been tested.

**Initial Piping Purge Test:** Also known as the “White Cloth Test” Charge the distribution system to operational pressure and start at the closest outlet to the zone valve. Using appropriate adaptors each outlet shall be purged with intermittent high-volume flow into a clean, lint free, white cloth until no discoloration is visible. If you brazed with a too low purge of N2NF this will be a long and difficult task.

**Standing Pressure Test, Positive Pressure Gasses:** After all the face plates, sensors, and gauges are installed the distribution system shall be charged to 20% over operational pressure, noting the time and pressure. This is a 24 hour test and the Authority having Jurisdiction needs to be notified for their witness paperwork to commence. After 24 hours there should be no pressure loss noted.

 **Standing Pressure Test, Vacuum Systems:** After all the face plates, sensors, and gauges are installed the distribution system shall be between 12” Hg and full vacuum with vacuum and time noted. This is a 24 hour test and the Authority having Jurisdiction needs to be notified for their witness paperwork to commence. After 24 hours there should be no pressure loss noted.