

**MEDICAL GAS SYSTEM
MAINTENANCE**

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Policy:

Ensure that the medical gas system after installation, modification or repair is tested according to prevailing standards.

Prevailing Codes and Standards:

TJC EC 02.05.09, NFPA 99

Procedure:

- I. **Cross Connect Testing** - Prior to closing of walls, it will be determined that no cross connection of piping systems exists.
 - A. When multiple medical gas lines and vacuum lines are interrupted, each should be pressurized individually using nitrogen (50 psig) with the other lines remaining at atmospheric pressure. Then each individual station outlet of all medical gas systems installed shall be checked to determine that the test gas is being dispensed only from the outlets of the line being tested.
 - B. All piping and outlets will be identified and labeled.

- II. **Pressure Testing** - Before closing the walls and prior to attachment or activation of system components (pressure switches alarms, etc.), but including outlets and valves, each section of the piping system shall be subject to a pressure test of 1.5 times the working pressure (minimum 150 psig) using nitrogen.
 - A. Examine all joints and connections using soapy water or equivalent.
 - B. A 24 hour standing test at a pressure 20 psig higher than normal operating pressure will be performed using nitrogen.
 - C. A high flow purge to remove particulates shall be put on each outlet. A full flow will continue until purge produces no discoloration in a white cloth.

- III. **Piping Purity Testing** - For each positive pressure system the purity of the piping system will be verified.
 - A. The test shall be for dew point 9°F, total hydrocarbons 1 PPM, halogenated hydrocarbons 2 PPM, and test results compared to a source gas.
 - B. Medical air test will include dew point 39°F, carbon monoxide 10 PPM, carbon dioxide 500 PPM, gaseous hydrocarbons 25 PPM and halogenated hydrocarbons 2

PPM.

- C. The test will be performed at the most remote outlet from the source or breach in the line.

IV **Piping Purge Test**

- A. The outlets in each medical gas piping systems shall be purged to remove any particulate matter, starting at the closest outlet/inlet and continue the furthest outlet in the zone.
- B. Each outlet shall be purged until the purge produces no discoloration on a clean white cloth.