

Hospitals Turn to Copper for Reliability Where it Matters Most

Copper piping is the lifeline for medical gas distribution

For centuries, copper has been viewed as one of the most versatile metals known to mankind, and today, copper is the benchmark for plumbing applications because of its reliability. We all expect that when we open our faucet, water will be there, so we take this reliability for granted. But what if a life is hanging in the balance. Copper medical gas systems deliver gases necessary for successful patient treatment in all healthcare settings. Having a reliable metal, and thus a reliable system for hospital applications is paramount.

Some common gases used regularly in hospitals are medical oxygen, nitrous oxide and compressed air. Usually these gases are used on patients who are having difficult breathing or who need anesthetic during surgery

“Medical grade oxygen is of extreme importance for patients who are hypoxic (low blood level of oxygen) to the point of being a basic life support measure,” said Gerald Schlette, MS, RRT and former Director of Respiratory Care Services & Hyperbaric Departments at Montefiore Medical Center in New York.

Proper delivery of nitrous oxide and oxygen to patients who rely on these gases as part of their treatment can mean life or death. The medical gas delivery system that supports the work of the doctor needs to be clean, efficient and reliable.

For such an essential system, copper is the obvious choice. According to Dale Powell, Project Manager & Piping Applications Specialist at the Copper Development Association (CDA), “brazed copper systems form strong, leak-tight systems that ensure gases are delivered to equipment and patients at the high pressures required and as pure as when they entered the system.” This is the kind of reliability and endurance that is essential to medical infrastructure. Even in fire conditions, brazed copper joints will hold up and provide the service that is required of them. “Copper is also impermeable,” says Powell, “so as unlikely as it may seem, it will not allow substances from outside the system contaminate the gas stream, such as in the cases of spills of cleaning chemicals or other substances.”

It should also be known that copper piping does not support the growth of microbial bacteria, according to various studies. This is important because medical gas needs to be kept as sterile as possible on the way to the patient. Copper prevents the buildup of microbial growth on the interior tube walls, ensuring not only that gas quality is maintained, but also that excessive buildup in the system over time doesn't restrict the gas flow - Both important considerations allowing the hospital to rely on the system for the lifetime of the facility.

For these reasons, medical practitioners have come to rely on copper for their facilities', especially hospitals', medical gas distribution systems. As Schlette explains, the proper and reliable delivery of medical oxygen "is basic but very real, just multiply its importance by 100 percent when talking about life support: In comes the good air (oxygen enriched) and out goes the bad air (CO2 enriched)... Many times it is up to our medical professionals to achieve this goal, (which is) not as easy as it seems!"

Copper became the preferred material for medical gas applications because it is long lasting, corrosion resistant, lightweight, durable and virtually no maintenance is required.

This is why medical professionals choose to rely on copper for this basic but essential medical treatment.