Copper Proves to Be Safer and More Reliable Option for Medical Facilities

Natural Properties of Copper Reduce Fire and Smoke Risks, Prevent Corrosion: Essential for Carrying Drinking Water and Medical Gas

Copper's role in medical facilities goes far beyond the standard piping and plumbing systems that are tucked behind walls and above ceilings of a building. In fact, copper is also an essential tool for respiratory care systems, delivering on a daily basis the gases needed by patients undergoing life-saving medical treatment.

The healthcare industry routinely uses copper tubing to dispense compressed medical air, oxygen and nitrous oxide critical for patient treatment and care; nitrogen and compressed air to operate life-saving tools, surgical and treatment equipment; and to operate the medical vacuum system, which remove gases and fluids from patient-treatment areas and surgery. Whether in surgery at a hospital, care at a dentist's office, or treatment at an out-patient facility, copper tubing plays an integral part in the medical procedure.

Copper tube has long been the preferred choice as a result of its internal cleanliness, durability, longevity, and low-maintenance requirements. Additionally, its' comparatively high-melting point is much less likely to spread flames or smoke throughout the building. "One of the advantages of copper over plastic is that copper doesn't burn, and it doesn't add smoke in the event there is a fire," said Dale Powell, CDA project manager.

Copper's non-flammable capabilities are especially significant where an emergency may occur and the people are less mobile or elderly, Powell said. Copper's melting point is 1,984 degrees Fahrenheit, far higher than that of plastic, which will soften at about 300 degrees and emit smoke when exposed to flames. Plastic tubing also expands and contracts up to 10 times more than copper when exposed to intense heat, making it less likely that the system can be put back in service following an event.

These characteristics make copper an essential material for plumbing and medical gas applications, therefore making it widely favored inside and outside medical facilities. While alternative materials might be considered to control construction costs, medical facility contractors consistently trust copper because of the long-term payback guaranteed by its versatility, reliability and dependable performance.

While the copper piping used to supply critical medical gases is the same material as the piping that is likely found behind the walls of a house, it is specially prepared to ensure that the interior surface is of the highest cleanliness. The piping is also supplied using special precautions, coming capped with sealed ends, to ensure that cleanliness is maintained throughout installation.

But like the piping in the home, at a very basic level – water distribution – copper's performance far outweighs most other materials. It doesn't corrode or rust as easily because of

a protective coating known as patina. What's more, studies have shown that copper can kill bacteria and limit the growth of potentially deadly microbes.

By comparison, plastic plumbing carries the risk of contamination, as the material can foster bacterial growth if not properly maintained. When exposed to high heat or fires, plastic has the potential to release toxins due to its composition. The semi-permeable membrane of plastic plumbing also has the potential to allow contaminants to enter the water stream.

When it comes to plumbing and tubing, copper's main properties have made it indispensable in medical settings. For comprehensive resource materials and more information about copper plumbing and tubing, please visit www.copper.org.