

# “Solderless Plumbing” Offers Green, Timesaving Advantages

Plumbing has seen significant changes in methods, codes and materials since it moved indoors in the 1920s. Despite this, copper tube continues to be the most common piping material found in both residential and commercial plumbing, and the standard against which all other types of piping are judged.

Pipe connections, in particular, continue to evolve. In today’s green building environment, these innovations – some old, some new – will increasingly compete with the familiar, time-honored trade practice of heat-soldering copper tube connections (for more on copper fabrication and installation, visit [www.copper.org](http://www.copper.org)). New solderless or “cold” joining products are the latest improvement in this area.

Although soldering is easy to do, it requires a gas-fired torch, and it’s not as quick – or as environmentally acceptable – as today’s newest cold

joining methods. With these fittings, no heat, solder or chemical flux are required to produce dependable, watertight joints.

The two principal types of solderless fittings for copper tube are press-connect and push-connect. Depending on the type, these connections are permanent or may be disassembled for refitting or adjustment. The press-connect method is generally permanent and requires a special tool to bond the fitting to the pipe. Push-on fittings simply require an installer to manually push or twist the fitting onto the tube. Both types employ gaskets to create a watertight seal.

Solderless copper fittings have been used in Europe for years and are gaining in popularity here. The key advantages are fast assembly and less skill required than soldering. They also can be used where using heat is difficult or dangerous, joints can be made with water in the tube,

and connections can be tested immediately after fabrication.

The growing adoption of cold fittings is already having an impact. In recent years, cold-joined plastic tubing offered a cheap, easy-to-assemble alternative to soldered copper systems. Today, solderless fittings for copper tube offer the same ease of installation, and they offer joint strengths that meet or exceed those of their plastic counterparts. Meanwhile, petroleum-based plastic products are currently experiencing their own price increase.

In terms of green building, plastic piping is rarely recycled. Because it contains little or no recycled content, it is less attractive to builders seeking to use sustainable materials. Copper tube and fittings are typically recycled—over and over again—to the same purity as their original content. Most copper tube and fittings contain up to

95 percent post-consumer recycled content.

Critics also argue that there is insufficient regulation of plastic piping materials, and studies indicate that chemicals used to manufacture plastic can leach into potable water, posing a health risk. Unlike copper tube, which has a time-tested record of dependability, the long-term safety and durability of plastic pipe and fittings are still to be determined.

Material choices aside, cold joining systems have proved their value and are here to stay. As installers become accustomed to them, and prices fall as use increases and additional products become available, more labor-intensive or less environment-friendly joining methods will inevitably decline—and may disappear. With the rapid pace of change, the question is no longer whether this will happen, but when. **HP**