



HOW TO SOLDER COPPER TUBE & FITTINGS

The craftsmen who built the great pyramid for the Egyptian Pharaoh, Cheops, fashioned copper into pipe to convey water to the royal bathing pool. A remnant of this pipe, buried for centuries, was found some years ago, its excellent condition a testimonial to copper's durability and resistance to corrosion. Today, 5,400 years after Cheops, man has recognized that no other metal is superior to copper for conveying water and has re-established it as a prime metal for such purposes. Copper piping is considered the ELITE piping system.

Assembling copper tube plumbing is a simple, quick procedure that can be performed by any DO-IT-YOURSELFER. Only a few tools are needed to do the job: a measuring tape, a tubing cutter, a cleaning tool (emery paper, steel wool or wire copper cleaning brush), a propane or butane torch, a roll of lead-free solder and a can of solder paste or flux.

Excess solder paste should be wiped from around fitting and pipe after it is inserted and ready for sweating. Capillary action is the basic principle that makes possible strong and neat solder joints for copper tubing. This action

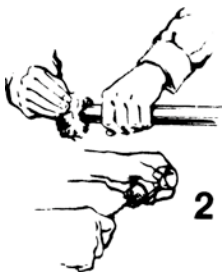
is caused by heat. It draws the molten solder into the void between the pipe and fitting from any direction, even upside down. When doing the job, assemble a section of your piping according to Steps 1 through 3 so that when you light up your torch, you can solder the entire section. When soldering a fitting, do the lowest socket first as the rising heat will warm the higher joints which, if they are done first, may subject them to extreme temperatures. If a fitting is heated too hot, it may cause the solder to boil out of the joint leaving it poorly fixed.

After the soldering is completed, it is good practice to set the solder by applying a damp cloth around the fitting *BUT* be cautious to avoid being burned by the steam that is generated. Buff or steel wool the finished fitting to remove any paste or flux residue so no corrosive action will occur later.

HOW TO SOLDER COPPER TUBING WITH LEAD-FREE SOLDER



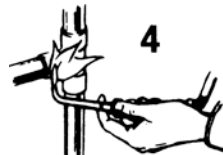
1 Cut the tube end square; ream, burr and size.



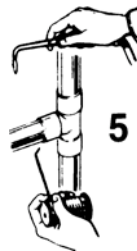
2 Use sand cloth, steel wire brush or steel wool to clean both tube and cup to a bright metal finish.



3 Apply solder flux to outside of tube and inside of cup of fitting carefully so that surfaces to be joined are completely covered.



4 Apply flame to the fittings to heat tube and solder cup of fitting until solder melts when placed at joint of tube and fitting.



5 Remove flame and feed solder to the joint at one or two points until a ring of solder appears at the end of the fitting. *The correct amount of solder is approximately equal to the diameter of the fitting — 5/8" solder for 5/8" fitting, etc.*



6 Remove excess solder with a small brush or wiping cloth before the solder cools and hardens, leaving a fillet around the end of the fitting.