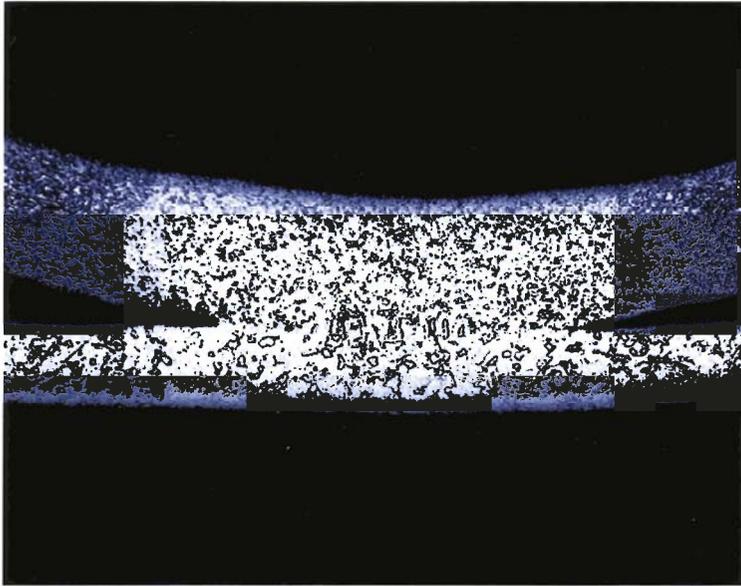


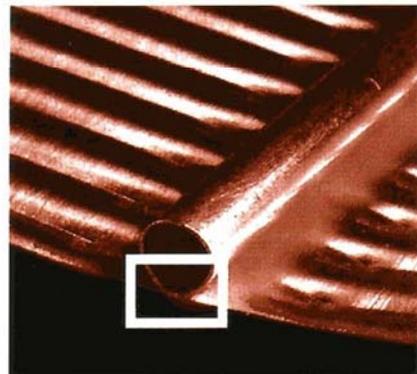
THERMAFIN MANUFACTURING



Photograph above of a fintube cross section (magnified 46 times) shows how the high frequency forge welding process provides complete and permanent bonding of fin to tube as evidenced by the grain growth across the joint.

Photograph at right shows end portion of actual fintube. Superimposed rectangle shows area of magnified photo above.

**Will the solar system you're considering still heat your water after 1 year?
...5 years?
...30 years?**



PROTECT YOUR INVESTMENT, INSIST ON THERMAFIN

Efficient solar energy collection starts with high thermal conductivity between fin and tube inside the solar collector. For lasting performance and durability, this fin-to-tube joint must be highly conductive and strong enough to endure the unrelenting torture of the sun's rays - which can cause other types of joints to weaken, expand and pull apart. The high frequency weld of our fintube joint insures high efficiency and unsurpassed strength. There are no solder or crimped-seam joints to weaken and fail. THERMAFIN Manufacturing components perform with the highest efficiency year after year.

Only THERMAFIN Manufacturing components come with a 30 YEAR WARRANTY* - a warranty that is based upon proven durability. To find out more about THERMAFIN Manufacturing fintubes and absorber plates, contact:

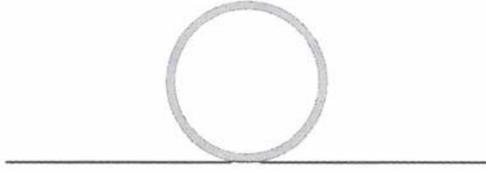
THERMAFIN Manufacturing, LC
1057 Ellis Road, Unit #2
Jacksonville, FL 32254
Phone: (904) 695-2500

*Contact us for full details.

THERMAFIN MANUFACTURING

COMPARISON OF VARIOUS ABSORBER TECHNOLOGIES...

A. ULTRASONIC WELD



Ultrasonic welded fin-tube is very similar in appearance to Thermafin's, but there the similarity ends. Ultrasonic welding does not create a true fused joint and it actually weakens the copper fin which may cause a heat flow restriction. This is due to a reduction in the thickness of the fins at the edge of the weld zone. Another result of this process is fin breakage at the edge of the weld.

B. INTEGRAL CONSTRUCTION - SAME TUBE WALL & SHEET SURFACE



The tube and wall must be thick enough to withstand fluid pressure and prevent corrosion. The absorber sheet, in turn, is necessarily twice as thick as the tube wall, resulting in an ultra-thick plate that weighs almost twice as much and cost 50% more than the tube and fin absorber, yet provides only a small gain in efficiency.

C. TUBE & FIN CONSTRUCTION - MECHANICAL JOINING



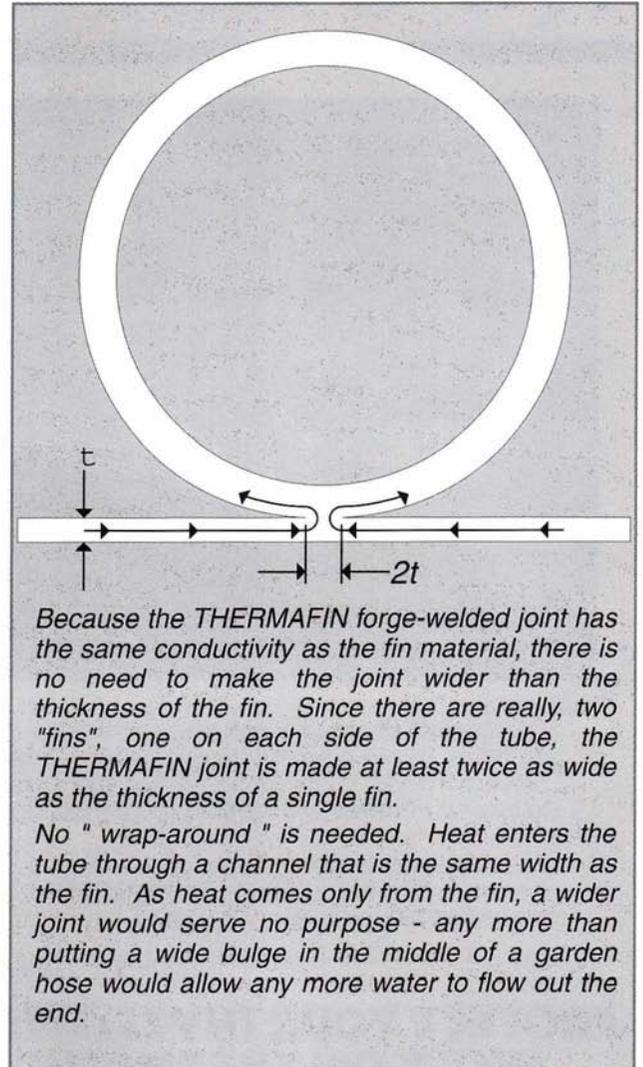
The mechanical joint is the simplest construction, but it offers comparatively poor thermal conductivity. To overcome this problem, the contact area must be large and the joint must be uniformly tight (requiring wrapping the fin around most or all of the tube). However, when the joint loosens with age and thermal cycling and develops a gap, or when the contacting surfaces corrode, the heat transfer capability will be greatly reduced.

D. TUBE & FIN CONSTRUCTION - ADHESIVE OR SOLDER BONDING



Although solder or adhesive bonding avoids certain of the problems of mechanical joining, low thermal conductivity remains a problem. To provide sufficient heat flow from fin to tube, both a large contact area and a thin, continuous layer of the bonding agent are necessary, and this bonding agent can deteriorate with aging and thermal cycling.

THERMAFIN CONSTRUCTION



Because the THERMAFIN forge-welded joint has the same conductivity as the fin material, there is no need to make the joint wider than the thickness of the fin. Since there are really, two "fins", one on each side of the tube, the THERMAFIN joint is made at least twice as wide as the thickness of a single fin.

No "wrap-around" is needed. Heat enters the tube through a channel that is the same width as the fin. As heat comes only from the fin, a wider joint would serve no purpose - any more than putting a wide bulge in the middle of a garden hose would allow any more water to flow out the end.

THERMAFIN CUSTOM DESIGN

While standard THERMAFIN designs are available to meet the most common size collectors, let us know if you need special designs. We have the ability to make variable lengths of fin tubes & headers to meet your need. Contact our office for specification sheets which define our limits.

THERMAFIN MANUFACTURING

THERMAFIN Manufacturing, LLC
1057 N. Ellis Road - Unit 2
Jacksonville, FL 32254 - USA
Phone: 904-695-2500
Fax: 904-781-0042