

New Developments Favor the Use of MicroGroove Smaller Diameter Copper Tubes, Says the International Copper Association

MicroGroove is the New Benchmark for Energy Efficient Coils

Orlando, Florida (22 January 2016) – As industry phases out high-GWP refrigerants and strives for energy efficiency, MicroGroove smaller-diameter copper tubes are now more relevant than ever. The march toward smaller diameter tubes began more than a decade ago and now tube diameters of 5 mm or smaller are commonplace in round tube, plate fin (RTPF) evaporators and condensers. MicroGroove copper tubes are the new benchmark for coils in residential and commercial ACR products.

On the eve of the 2016 AHR Expo, several new developments are contributing to the widespread adoption of smaller tubes.

- MicroGroove correlations are now contained in CoilDesigner® software which is widely used by OEMs in the design of ACR products.
- A wide variety of tube handling and fin handling equipment specifically designed for smaller diameter tubes is now available.
- Non-invasive pressure expansion has proven to be a fast, simple and reliable manufacturing method compared to the bullet expansion method.
- Smaller diameters allow for refrigerant reduction, which is extremely desirable considering the flammability of many of the low and ultralow GWP refrigerants, such as R32, HFO blends and hydrocarbons.
- For the same wall thickness, smaller diameter tubes have higher burst pressures, which are suitable for the high operating pressures of low-GWP refrigerants.

Copper, of course, is one of the best thermal conductors. Tubes made of copper provide the strength, durability and corrosion resistance that is needed in ACR applications. Furthermore, the RTPF configuration has inherent advantages compared to microchannel or multichannel tubes made of aluminum. Consequently, smaller diameter copper tubes are widely considered to be the new benchmark for many kinds of heat exchanger coils that are used in air-conditioning and refrigeration, including room air-conditioners, split systems, outdoor condensers, beverage coolers, heat pumps, various large commercial applications and more.

“OEMs are discovering that MicroGroove is well-suited for nearly all of their coil application requirements,” says Nigel Cotton, MicroGroove Team Leader for the International Copper Association. “Advances in manufacturing coupled with the phase out high-GWP refrigerants is resulting in widespread adoption of MicroGroove tubes in the ACR industry.

For more information, visit www.microgroove.net. Join the MicroGroove Group on LinkedIn to share your ideas about research directions and product development.
www.linkedin.com/groups/Microgroove-4498690.

About ICA

The International Copper Association, Ltd. (ICA) is the leading organization for promoting the use of copper worldwide. ICA's mission is to promote the use of copper by communicating the unique attributes that make this sustainable element an essential contributor to the formation of life, to advances in science and technology, and to a higher standard of living worldwide. Visit www.copperinfo.com for more information about ICA.

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