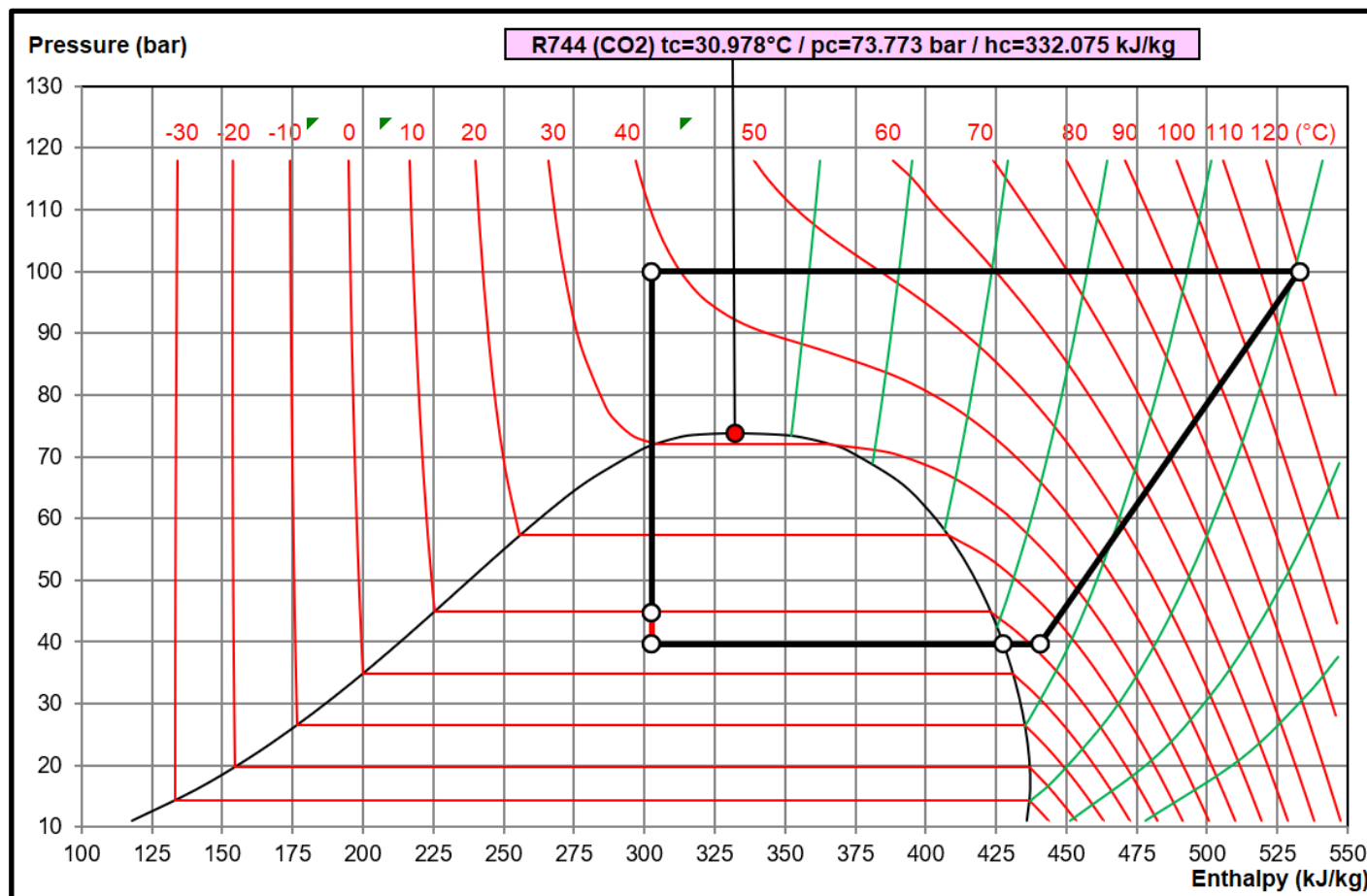




# Tube wall thickness

CO<sub>2</sub> coolers in the supercritical range place high demands on the manufacturers of finned heat exchangers. At a working pressure of 100 bar, the required test pressure is 130 bar, which is why normal copper tubes can no longer be used. The situation is better for stainless tubes in various qualities. A typical application for heat pumps in midsummer can be seen in the diagram below.



Online calculator [Arbeitsdruckrechner](#) | [Lawton Tubes](#) , temperature  $150^\circ\text{C}$ , pressure 136 bar

Copper tubes with an outside diameter of 6.0 mm require a wall thickness of 1.0 mm! This is used as capillaries in injection evaporators, but not as tubes for finned heat exchangers, which is why copper tubes cannot be used for CO<sub>2</sub> in the supercritical range!

Online calculator [heco - Edelstahl - Rohrauslegung](#),  
Welding factor 0.8, temperature  $150^\circ\text{C}$ , pressure 130 bar

Stainless tubes with an outside diameter of 16.5 mm and a wall thickness of 1.0 mm can be used, for example, for CO<sub>2</sub> coolers in the supercritical range. With an outside diameter of 12.4 mm, a wall thickness of 0.73 mm is required.

For example, the staggered tube arrangement of  $40.0 \times 34.6 \times 16.5 \times 1.0\text{ mm}$  in stainless steel, which is known for its high performances, produce [www.faco.it](http://www.faco.it).

