



HVAC-R and Hydronic Fittings

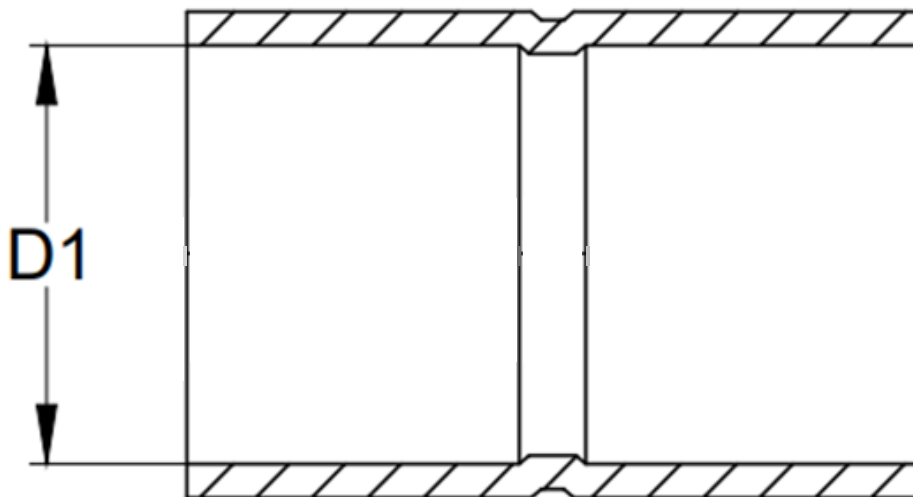
What's the difference?

Dimensions

HVAC-R tubes and fittings are measured in outer diameter. Tubes and fittings for hydronic are measured in inner diameter.

For example, if we take a coupling for 1/2" tube (The drawing to the right):

D1 diameter is the same as tube outer diameter. In the case of HVAC-R tubing $D1 = 0.502$ In., the HVAC-R tube with 0.500 In. outer diameter fits into it.



In the case of hydronic tubes and fittings, $D1 = 0.627$ In. This is because the inner diameter of the hydronic pipe is 0.500 In., and the coupling must consider the thickness of the wall. The result is: tube inner diameter + 2 x wall thickness + tiny gap for soldering/brazing. pipe is 0.500 In., and the coupling has to take into account the thickness of the wall. The result is: tube inner diameter + 2 x wall thickness + tiny gap for soldering/brazing.

The same logic applies to all types of fittings: Couplings, Tees, Elbows, etc.

When buying fittings for copper tubes, you must know if it is for HVAC-R or for hydronic.

Certifications and Pressures

Hydronic fittings are made for low pressure applications, which are water supply and drainage. For hydronic, it is more important to have materials that are certified to be safe for our health. That is why our plumbing fittings are NSF/ANSI 61 certified.

In HVAC-R applications, pressure rating becomes a more important parameter. For this reason, our PAC and ACR fittings are made according to B16.22 requirements and in most cases exceed it. When compared to our plumbing fittings, PAC and especially ACR fittings have thicker walls to withstand higher internal pressures. PAC fittings are standard for regular AC installations, while ACR fittings provide even higher-pressure ratings required by refrigerants that operate at higher pressures, like R410A, R32 or subcritical CO₂. Our PAC fittings have CRN registration, and ACR fittings have both CRN registration and UL approval.

