

When you sit down to design any type of coil, replacement or new, it's important to remember what costs money and what doesn't. There are many design changes that you can make to a coil that are free and there are others that increase the cost of the coil dramatically. Let's go over all the changes that you could make on a coil that would make it different from a standard coil. Some of these changes could be optional and some could be 100% necessary. If you understand how much latitude you really have in designing a coil, you won't be tempted to just build what a manufacturer offers as standard. You can make the appropriate changes based on your job requirements.

Tubes

Tube material is almost always copper with ½" OD tubes offered at .017in.thick and 5/8" OD tubes offered at .020in.thick. Just because this is the standard, that doesn't mean you have to live with it. You can upgrade wall thickness to .025in., or .035in., or .049in. You can change materials to 90/10 cupro-nickle or steel or even 304/316 stainless steel. There are lots of tube options and some are very expensive and some not very expensive at all. For most HVAC applications, standard wall thickness is acceptable. If you have an important project or your customer wants to spend a little extra money, upgrading the wall thickness adds a lot of value to the coil. For an add of 15% to 20% you can make the tube wall twice as thick and double the life of the coil. That's not a lot of money to get this benefit, and it won't add any extra shipping time to the coil. Any really knowledgeable coil manufacturer does it automatically for you when the performance and duty require it (steam, corrosion, etc.).

Fins

Standard fins are aluminum at .006in. thick. You can upgrade to .010in thick or change materials to copper, steel, or stainless steel. Again, some of these options are expensive and some are not. Keeping the fins aluminum and just changing the thickness does not cost a lot of money. Changing fin material is a really expensive proposition, however. As an example, changing 10 fins/inch from aluminum to copper can easily double the cost of the coil. On condenser coils of 14 fins/inch, it can cost even more than double. You have to have a pretty compelling reason to want to want to change fin material. This is why so many coils are coated in lieu of changing fins. The reality is that it's not as good a way to build a coil, but it's a lot cheaper

Casing

The vast majority of HVAC coils are built with 16GA. galvanized steel casings. You can upgrade this to 14GA. or 12 GA. or change to 304/316 stainless steel. As an example, if you changed the fins to copper because of corrosion, then why would you ever leave the casing galvanized? The answer is you never would! Changing the casing (tubesheets included) to stainless is not very expensive at all. Upgrading the gauge from 16GA. to 14GA. because you are "stacking coils", and require a heavier casing is not very expensive either.

Basically, the most expensive change that you can make to any coil is changing the fin material. There is a lot of fin material on any coil and changing that material becomes a "big deal." Changing the tube thickness or casing is not nearly as expensive. Below is a list of things that you can change that won't cost you anything. Any coil manufacturer should do it for nothing, just because you ask

- 1 - Casing dimensions - it doesn't matter if the casing around the coil is 1 " or 1 1/2" or 21/2". It's all the same cost to the coil manufacturer.
- 2- Connection materials - it's the same cost for steel or copper. Changing to cupro/nickel or some exotic material costs money.
- 3- Header materials - the header usually matches the tube material, and is built into any extra pricing for changing the tube material. Example - 90/10 cupro-nickle tubes = 90/10 cupro-nickle headers also.
- 4- Connection sizes - there is no cost for a manufacturer to change connection OR They are just matched to the G.P.M. or steam flow. Also the cost is the same for M.P.T. or F.P.T.
- 5- DX distributors - There is no add to make a coil DX in lieu of water. You just substitute a distributor for a water connection. This does not include the expansion valve, however.
- 6- Coil depth - a coil can be 6" thick or 8" thick. There is always a minimum required, based on the number of rows but the rest is just sheet metal and requires no added cost.
- 7- Steam coil pitch - all steam coils should be pitched internally within the casing. This should just be built into the cost of the coil.
- 8- Stackable flanges - coils are often stacked one on top of each other. Flanges need to be built to allow this to happen, but it shouldn't cost you any money.
- 9- Extra connections - any time you add an extra connection it does cost money, but when you split a DX coil (row split, etc.) the extra distributor should be figured into the cost of the split.

Many manufacturers become so "production oriented" that they forget that the HVAC industry is a specialized business. Most of your coil jobs should or at least can require something special. It's up to you to know what to ask for based on the job conditions and how much money your customer wants to spend. In addition, a lot of what you can ask for doesn't require any money at all. Please call USA at 800-872-2645 and we'll walk you through any coil questions that you might have.



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