

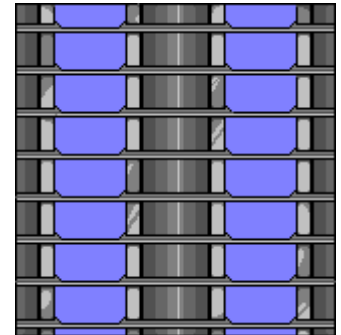
Fin Types for Finned Tube Heat Exchangers

There are a number of available fin types for Gas to Fluid Heat Exchangers, each with their own unique fin design and attachment. Each fin type has advantages and disadvantages in specific applications so the most appropriate fin selection is dependant the environment in which it will be applied.

Plate Fin

In the Plate Fin design, tube holes are pressed in thin sheets of metal, where tubes are inserted and then expanded. This highly efficient fin type provides a very large surface area that helps evenly distribute heat. The fins can be waffled or rippled for greater efficiency. The fin thickness can be varied from thin in situations where cost is important and cleanability is not an issue to thick fins in applications where ruggedness and cleanability are important.

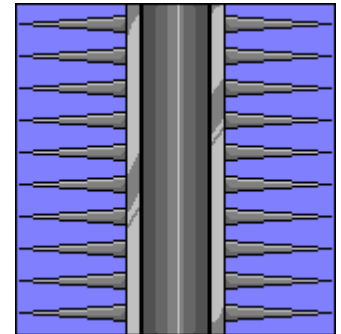
Common Applications: HVAC Coils, Steam Coils, Air Preheaters, Air Cooled Heat Exchangers, Transformer Oil Coolers, Motor and Generator Coolers.



Tension Wound Fin

The Tension Wound Fin has the fins wrapped tightly around the tube and stapled or welded at the ends to hold the form. Tension Wound Fins can also be solder-coated to help increase corrosion resistance. Tension wound fin works especially well with fins and tubes that are made of the same material.

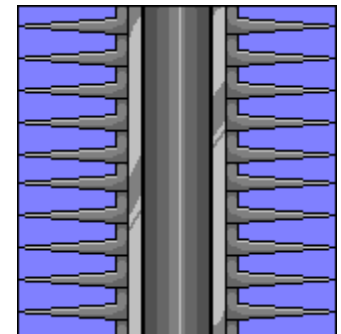
Common Applications: HVAC Coils.



'L' Footed Fin

The 'L' Footed Fin has a lip at the base which is tension wound around the tube. This increases the contact area and increases the heat transfer contact area between the tube and the fin and decreases the exposed joint at the fin base.

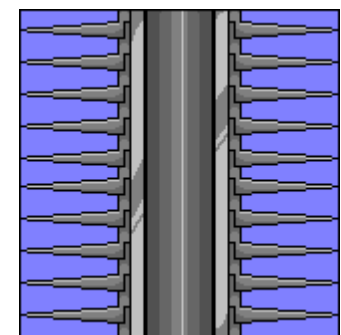
Common Applications: HVAC Coils, Steam Coils.



Overlapped 'L' Fin

The Overlapped 'L' fin design has interlocking fins that are wound together to prevent movement and separation. The fin protects the entire tube, so the design works well for applications where corrosion is a factor.

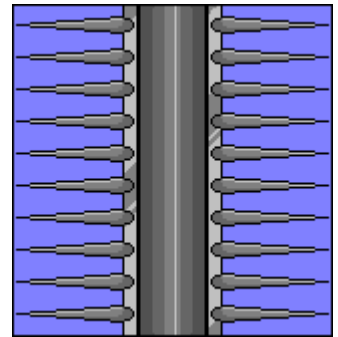
Common Applications: Steam Coils, Air Preheaters.



Embedded Fin

The Embedded Fin design involves the fin inserted and welded into a helical groove cut into the tube. They can withstand higher temperatures, and are very durable. Embedded fins are best suited for applications that involve high temperatures or thermal cycling and where the fin side will be subjected to frequent cleaning.

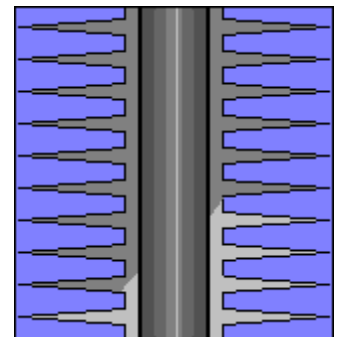
Common Applications: Steam Coils, Air Preheaters, Air Cooled Heat Exchangers.



Mono-Metal Extruded Fin

Extruded, or Integral Fins are created by sending thick-walled tubes through a press which extrudes the fin from the tube in a cold worked process. The cold working process hardens the fins making them well suited to cleaning. There is no bi-metal joint exposed to the gas side eliminating galvanic corrosion. The Mono-metal fin is best suited for low pressure applications.

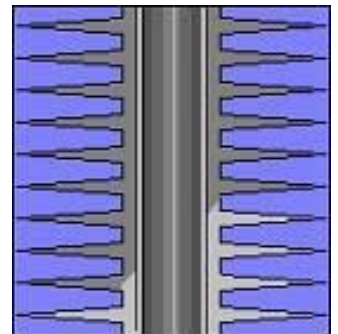
Common Applications: Transformer Oil Coolers, Heat Pipe.



Bi-Metal Extruded Fin (Integral Fin)

Extruded, or Integral Fins are created by sliding a liner tube inside a thick-walled tube and then sending this assembly through a press which extrudes the fin from the thick walled tube in a cold worked process. The outer tube is pressed into a fin pattern while creating a mechanical bond between the outer (finned) tube and the liner tube. Since the fins are one piece there is no exposed bi-metal joint at the base of the fin. The liner tube can also be chosen to best suit the tubeside fluids as only a small area of the liner tube is exposed to the gas side.

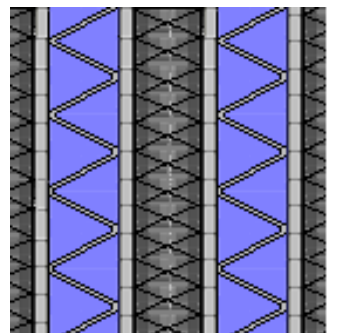
Common Applications: Steam Coils, Air Preheaters, Motor and Generator Coolers, Transformer Oil Coolers, Air Cooled Heat Exchangers.



Brazed Aluminum (or Plate and Bar) Fin

Fins are laid between aluminum braze sheets and fitted with headers and face bars. The assembled unit is placed into a vacuum braze furnaces where precise control of time and temperature produces a unified core. Often an internal fin is used on the inside to enhance heat transfer.

Common Applications: Oil Coolers, Compressor Coolers, Charge Air Coolers, Radiators.



[Click Here for a Comparison of Fin Types](#)