



ISTEAM

→ **Steam coil heat exchangers**

Manufacturing **expertise** at work

For sustainable exchanges ...

→ ISTEAM : Custom Built Steam Coils

The ISTEAM exchanger was the first heat exchanger product designed by Thermofin. Over the years, its evolving design has benefited from Thermofin's significant experience with thousands of installed units. The ISTEAM coil's purpose is to transfer heat from steam. Steam, sometimes referred to as a "wild beast" by experienced boiler operators, can be unpredictable if all aspects of the heat exchanger, either thermal or mechanical, are not controlled properly. Accordingly, Thermofin is pleased to offer a wide range of specially designed steam heat exchangers, custom made to meet the exacting needs of your process.

Type Z



Type Z exchanger

This is the most widely used steam coil model, particularly in the pulp and paper industrial sector. Its tubes are specifically bent to allow for the thermal expansion of the tubes exposed to high temperature steam. The inlet and outlet connections are at opposite ends and allow for easy vertical or horizontal installation.



Tube bending that absorbs thermal expansion



Integrally bent U-tubes without fins at the bend (no welding)

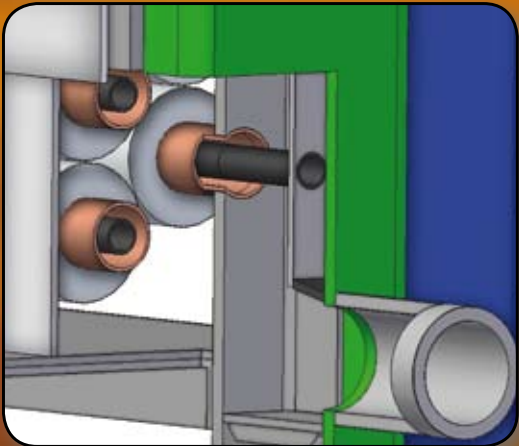
Type UH

This type of steam coil incorporates integrally bent U-tubes and a special casing design to insure a minimum of welding is used at assembly, and that the tubes can thermally expand. There is no risk of cracks at welds for this horizontally installed steam coil. This design also stands out for its ease of installation since both inlet and outlet connections are at the same end.

Mastery

Type VC

This steam coil was specifically designed for air temperatures that are below freezing, to prevent the costly consequences of freezing condensate. The concept is to insert an open-ended shorter distribution tube within an outer fin tube thus allowing the condensate that is flowing in the annular clearance to be kept warm by the steam condensing in the distribution tube. The tubes are inclined in order to promote the condensate flow by gravity. Consequently, the type VC steam coils always have both their inlet and outlet connections at the same end of the coil. Installation may be horizontal or vertical. This type of coil is also ideal for conditions of operation with superheated steam.



Header detail



Type VC

Type AFZ

The Type AFZ steam coils represent the best choice for preventing condensate from freezing, they are recommended for extremely low air temperatures. The benefits of this vertical tube installation design are related to the geometry that promotes the continuous purging of noncondensable gases from the first row of tubes and the flowing of the condensed water to the condensate main drain separately at each row. With this design the steam is fed in series to each row further enhancing the prevention of airbinding in the first row, typically the air in contact with the second row will be above freezing and not be a cause for condensate freezing concerns.

Thermofin has also developed other designs that are the result of combining the aforementioned concepts. Thermofin's strength is the development of heat exchanger solutions that match and exceed the unique needs of your operation.



Type AFZ

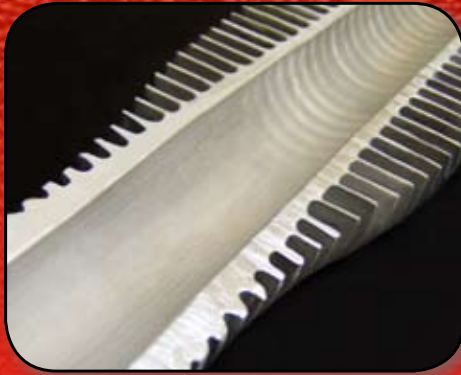
Specificity

Robustness



Excellence in every aspect

Frequently used in industrial processes that put equipment such as heat exchangers to the test, Thermofin's ISTEAM coils are designed to last.



Fin tube section view

In fact, our famous extruded aluminum finned tubes render our steam coil heat exchangers extremely resistant and capable of attaining superior heat transfer duties. The fin tubes can even be cleaned with the use of high-pressure water jets, without damaging the fins!

Through its mastery of every aspect of the design and fabrication of extruded aluminium finned tubes, Thermofin has achieved the development of numerous geometrical fin tubes configurations (fin pitch, diameter and thickness). With this unique know-how, Thermofin and the end user will together be able to select the perfect Thermofin product that will conjugate ideally performance and maintenance.



5 fins per inch

In addition to a fully welded assembly, the use of thick plates for the casing and the headers reinforces the robustness of our exchangers.

The service life of a steam coil is not only dependent on the quality of its fabrication but more importantly of the manner of its installation. Accordingly, the adequacy of its connections and attachments as well as the drainage and trapping design must respect the secrets of the trade in order to insure proper evacuation of condensate and noncondensable gases. Without adequate installation, corrosion and erosion may attack internal parts of the unit, resulting in premature failure.



14 fins per inch

In the event of steam exhibiting high corrosiveness that cannot be inhibited by the introduction of chemical additives, the selection of stainless steel or other special alloys could help preserve the integrity of the heat exchangers.

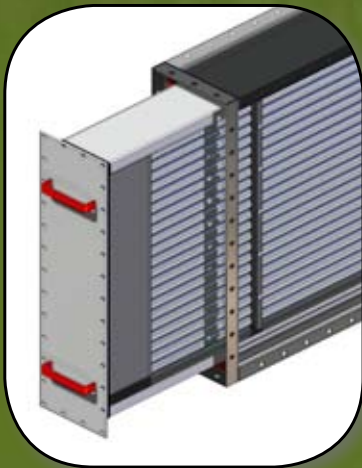
As with any other Thermofin heat exchanger, the ISTEAM steam coils are constructed in accordance with the highest standards of the industry, they may be registered with the local jurisdiction (CRN), stamped per ASME or designed to exceed any particular end user specifications.



Options

To better suit your exacting needs, Thermofin offers an array of options such as:

- Air-tight construction: This option is usually needed when the airside pressure is higher than the ambient conditions of the site.
- Drawer type: The design of a casing that incorporates the concept of a drawer that contains the exchanger simplifies maintenance and replacement of the unit. No need to disassemble the air ducts to remove the steam coil heat exchanger!
- Exterior surface protection: special coatings ("Heresite", hot dip galvanizing, special paint, etc.) that help protect the fins and/or the heat exchanger's casing from corrosive environment.



Drawer option



"Heresite"-coated
exchanger

Flexibility

Applications

- Air preheaters for industrial boilers
- Heating coils for pulp and paper process drying
- Heat recovery
- Wood drying coils
- Room comfort heating
- All types of dryers
- Chemical process heating



The heat exchange specialist

Thermofin



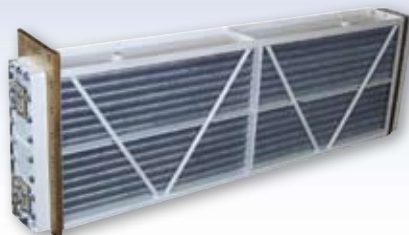
Since 1993, Thermofin has designed, manufactured and marketed a large range of high quality exchangers for industrial processes. Over the years, Thermofin has become one of North America's leading name in thermal exchange. Through its expertise and its dedicated workforce, Thermofin will always offer you the right exchanger: the one for sustainable exchanges ...



→ EOLIA: Industrial air cooled heat exchanger



→ ITEX: Gasketed plate heat exchangers



→ ELECTRA: Generator and motor coolers



→ CALEOS: Shell & Tube heat exchanger

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