

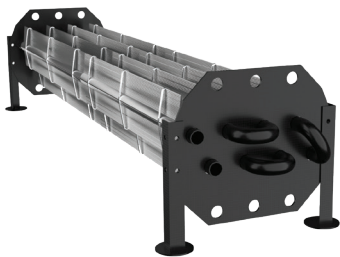
Advanced heating solutions for high viscosity industrial processes

QMax Industries

Industrial processes with high viscosities and melt/pour points normally require active heating when being held in tanks. Vessels for both long-term storage and day use are regularly equipped with finned internal heating coils to maintain these processes at the ideal temperature for flow and pumpability. Compared to finned coils, the heat transfer rates of unfinned coils, also known as “slick pipe,” are typically so inefficient that the length of coil required makes their use impractical. As process viscosity increases, however, the primary challenge with finned internal heating coils is the buildup of process material on the external surface of the coils. This buildup leads to fouling of the coils and reduced performance of the system over time, decreasing system efficiency and shortening costly maintenance intervals.

For context, a common fin technology used in asphalt service is the spiral welded fin or helical welded fin. This is an inexpensive technology from a capital cost perspective and works well with lower viscosity neat asphalt. Due to the limitations in manufacturing and materials, spiral fins

are prone to fouling with higher viscosity modified asphalt. The long residence time of asphalt in the interstitial space between the fins can cause overheating, premature age, hardening and buildup on the fin surface. Increasing the spacing between the fins and decreasing their height mitigates overheating issues but rapidly diminishes the coil performance along with its value proposition. In the past, many modified asphalt producers resorted to slick pipe coils to minimize fouling, requiring excessive lengths of pipe to make up the performance deficit.

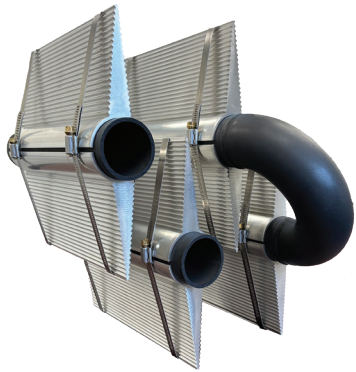


Example of MakoFin 10-foot coil bank custom designed for internal tank heating of polymer and rubber modified asphalt

MakoFin: Finned coil innovation

Modern polymer modified and rubber modified asphalts (PMA and RMA), depending on their chemistry and state of cross linking, can be especially challenging to store from an internal coil standpoint. QMax has recognized the need for a finned coil apparatus for service in high viscosity modified asphalts that may contain suspended particulates. QMax’s new patent-pending fin technology, the MakoFin, is the industry’s only purpose-built fin specifically for modified asphalt.

QMax’s MakoFin design incorporates a highly conductive aluminum singular fin with an optimized mass-to-length ratio. This design includes a waveform ridged surface to interrupt the formation of thick boundary layers and yields high fin efficiency. The singular fin does not create small interstitial spaces where overheating can occur and there are no areas where particulates can collect if they fall out of suspension. When arranged in a serpentine bank configuration the collective fins create parallel heat transfer “channels” that generate a greater buoyant force than standard





The unique design of the fin surface on the MakoFin

coils, increasing flow velocity over the fins and promoting tank turnover and mixing.

QMax Industries designs and manufactures specialized process heating systems for industrial piping, vessels and equipment. Offering high performance heat tracing, equipment jacketing and tank heating solutions, QMax’s innovative systems make it a leader in steam tracing.



For more information, visit qmaxindustries.com.



BECAUSE RESULTS MATTER

Axis Industries delivers when others can't, with the leadership and experience to ensure your job gets done safely, on time, and within budget. Industrial solutions for maintenance, turnarounds and capital projects:

- Scaffolding
- Insulation
- Coatings
- Linings
- Fireproofing
- Abatement



ABOUT US CAREERS

www.axisindustries.com

Call to discover how together we can save the world 100 Trillion BTUs by 2029



SIMPLIFYING OUR WORLD
One BTU at a Time





We commit to simplifying your project with an effective heating solution, keeping every BTU in mind. QMax Tank Heating Solutions are designed to maintain specific process temperatures or provide rapid heat-up inside Tanks, Vessels and other containers using internal tank heating or external tank heating.





qmaxindustries.com • +1 704-643-7299 • sales@qmaxindustries.com