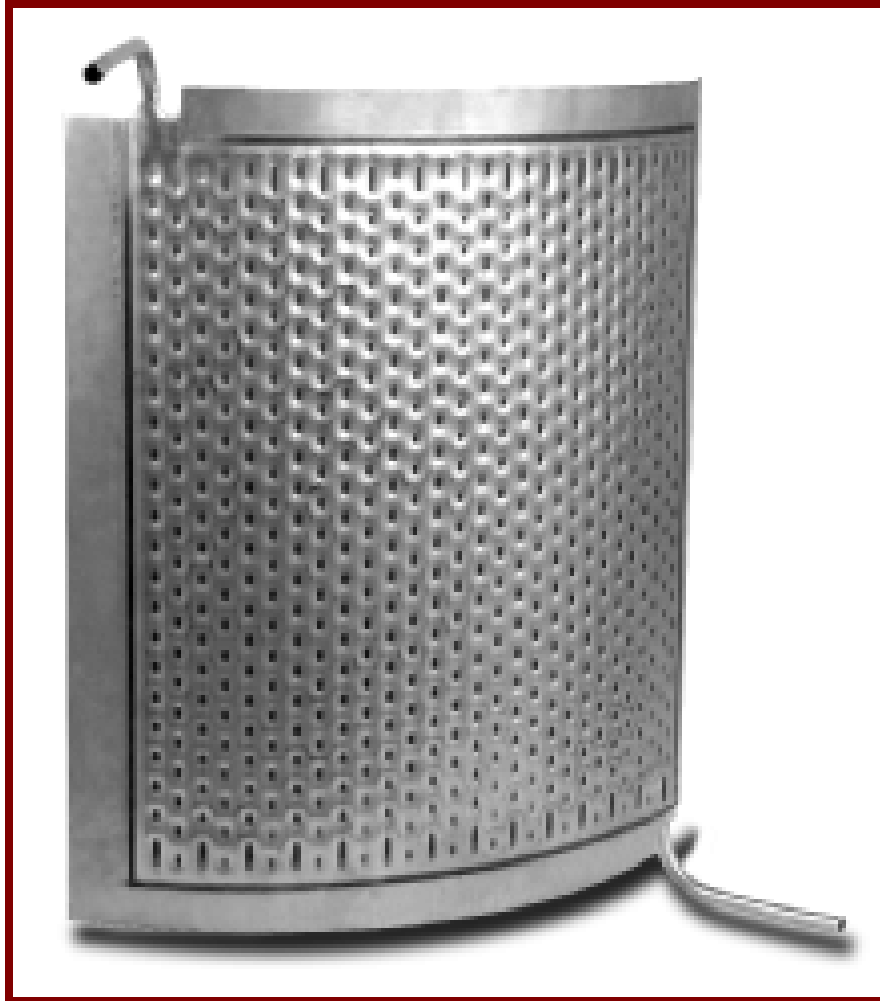


## HeetSheet® Waffle Pattern Keeps Fluids Flowing



## Thermon HeetSheet® Tank Heating/Cooling Units

### Construction Of HeetSheet Units

HeetSheet units are surface plate-type heating units made up of two sheets of 20 gauge 304 stainless steel conforming to ASTM-A240. The sheets are positioned face-to-face and continuously seam-welded together with an outer border to define the fluid holding portion. Interrupted seam welds are arranged within the border to provide a waffle like pattern. The unit is then hydraulically inflated to provide a passageway for steam or other heat transfer fluids. Although they are light and pliable, HeetSheet units can withstand relatively high pressures and temperatures. They are rolled to fit the outside wall of a tank that must be heated or cooled. The units are equipped at the factory with 12mm (1/2" OD) stainless steel tubing inlet and outlet connections. A special non-hardening heat transfer compound is factory applied on the surface that will be in contact with the tank wall.

### Waffle Flow Pattern Versus Serpentine Pattern

The waffle style pattern provides multiple flow paths avoiding internal blockage that may occur with single flow serpentine designs.

### How A HeetSheet Works

When a HeetSheet unit is fastened to a tank wall, the factory installed heat transfer compound having a coefficient of expansion greater than the material of construction of the HeetSheet unit, expands to fill any air pockets that may exist between the tank wall and the HeetSheet. The expanding Non-hardening heat transfer compound eliminates all air pockets and creates an uninterrupted thermal path between the heating fluid and the product being heated.

### Efficiency Of HeetSheet Units Versus Plate Type Coils

With HeetSheet Units, heat is transferred to the tank wall at a rate of 114 to 227 W/m<sup>2</sup> K (20 to 40 Btu/hr-°F-ft<sup>2</sup>) compared with typical externally installed plate-type coils that deliver heat at a rate of approximately 17 to 28 w/m<sup>2</sup> K. For this reason, 2 to 3 times more surface area is generally required for plate-type coils to maintain the same process temperature as HeetSheets.



## **HeetSheet® Units Provide Even Temperature Distribution**

HeetSheet units are applied to the external wall of a tank; therefore, no danger of cross contamination between the process fluid and the steam exists, as is the case with internal steam heating coils or a jacketed tank. Further, with HeetSheet units, there is no danger of developing hot spots that could “cake” or cause degradation of the material in the tank that frequently occurs with internal tank heating coils. The special mastic type heat transfer compound conducts heat directly into the tank wall. The highly conductive metallic wall of the tank then transfers the heat around the periphery of the tank in a relatively uniform fashion when the tank is covered with thermal insulation.

## **Economics Of HeetSheet Units Versus Plate-Type Coils**

The fast and simple installation of HeetSheet units makes them more economical than other external plate-type-heating coils. HeetSheet units weigh only about 16.5 kg/m<sup>2</sup> (3.375 lb/ft<sup>2</sup>) compared to a weight of approximately 39.2 kg/m<sup>2</sup> (8 lb/ft<sup>2</sup>) for a typical external plate-type-heating coil. These heavy coils require lifting equipment for handling, and difficult mounting techniques are necessary, which results in higher labor cost. Two workers can easily install a HeetSheet unit of the largest size. Simplified banding methods, factory applied heat transfer compound and the requirement for fewer square meters (square feet) of HeetSheet surface area, combine to permit the installation of HeetSheet units in minutes compared to hours for other methods.

## **HeetSheet Applications**

HeetSheet units may be used in a wide variety of applications. Typical applications include temperature maintenance for storage tanks handling products such as: Caustic soda, phthalic anhydride, soap, paraffin, syrup, sulfur, asphaltic materials, naphthalene, malic anhydride and food products.

## **Temperature And Pressure Ratings For HeetSheet Units**

HeetSheet units are rated for use with 17.24 bar g (250 psig) steam pressure at temperatures of 186°C (366°F) when used with NH (Non-hardening) heat transfer compound. Steam pressures up to 17.24 bar g (250 psig) may be used with Thermon's T-63 grade heat transfer compound. These units may be installed on flat as well as curved surfaces. Product temperatures to 177°C (350°F) can be maintained in tanks, vats, or other types of vessels.

HeetSheet Specification form TSP0014 and Installation Procedures form TSP0026 are available upon request.

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