

Pensteel Range of Active IBCs

Finncont Heated IBCs



Pensteel Limited

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Finncont Active IBCs can be supplied with three different heating methods, these are:-

- 1) Steam heating.
- 2) Jacket Immersion heating.
- 3) Trace heating.

The method of heating is based upon the properties of the liquid being transported and its heating requirements.

These parameters are:-

- 1) Purpose of heating; maintain or increase temperature of contents.
- 2) Accuracy of control; can be chosen to + or - 2°C.
- 3) Temperature range.
- 4) Maximum allowed surface temperature.
- 5) Direct or indirect heating.
- 6) Insulated or not.
- 7) Other requirements; mixing etc.

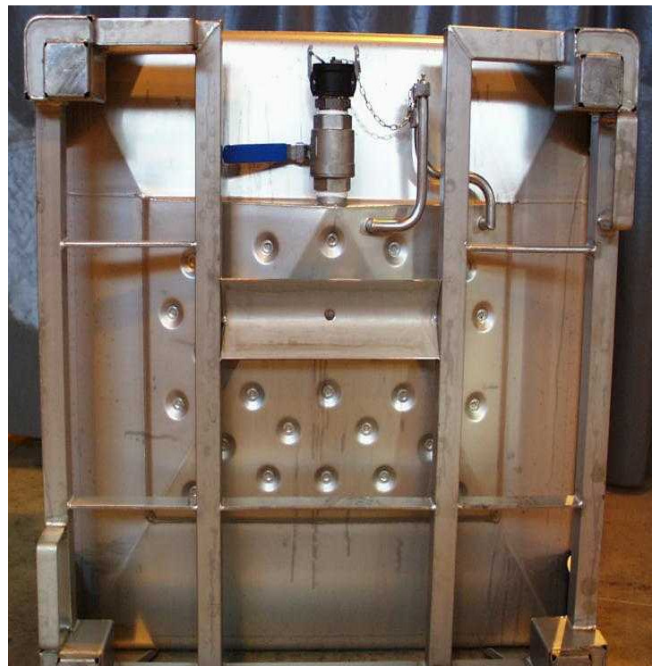
1. Heating Methods

2.1a. Steam Heating – Steam Coil.

The simplest method of heating an IBC is with the addition of a Steam Coil. The coil is approximately 18 metres in length and is attached to the top of the IBC. This enables the operator to easily connect the Steam Inlet and Outlet connections prior to heating.

The advantages of this method of heating is its relative low cost (approximately an additional £400 to the price of a standard container) and its ability to rapidly increase the temperature of the product.

The disadvantages are cleaning of the coil, high surface temperature causing degradation of the product and difficulty in controlling the steam temperature. There is available, on the U.K. Market, a thermostatically controlled steam coupling. This costs in the region of £300. Obviously the use of hot water instead of steam through the coil will reduce some of the disadvantages listed opposite.



Underside of an IBC with WOK

2.1b. Steam Coil – Wok Pan.

As the name implies, the Wok Pan is designed as a localised method of heating just the valve area. This method of heating the product adds approximately £240 to the price of the IBC and is best suited in conjunction with an insulated jacket to help

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retain the heat. Again steam or hot water can be passed through the system. Base price for the CF/MC 1000 litre containers would be in the region of £1850.00

2.2 Immersion Heated.

This IBC has a double wall construction. The number of heated walls can be chosen according to your requirements. The bottom of the IBC is always heated and either the back or all four walls are heated. Between the inner and outer walls there is an intermediate agent. The agent is usually a mixture of alcohol (30%) and water. The agent is heated with two electric heating resistors; either 2x1500W, 220V or 2x200W, 380V. The design where all four walls are heated is also equipped with a water circulation pump to provide homogenous heating throughout.

The temperature is controlled with two thermostats. One for the intermediate agent and the other in contact with the transported product. The system is also equipped with an overheat guard.

Maximum temperature is a 55-60°C (accuracy + or - 5°C). It should be noted that this system is designed to maintain temperature, the capacity to increase temperature is very limited.

Budget price for 1000 litre unit in Aisi 304, four walls heated is £3500.

The advantage to using the immersion-

heated system is its simplicity and its ease

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of maintenance of all parts.



The disadvantage is that the outer jacket is as warm as the intermediate agent. It is also fairly heavy (400 -500 Kgs) due to the system requiring approximately 200 litres of the intermediate agent. (The intermediate agent is not included in the price).

1.3 Trace Heated.

The IBC is double jacketed and a trace heating cable is fixed to the outer surface of the inner tank. The heating cable can either be standard or self-regulating. The self-regulating cable allows an unequal heating of

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the container. This is particularly useful when the IBC is partially filled, as the self-regulating cable heats the product only.

The IBC is also insulated all over (in between the double jacket) with polyurethane foam providing a built in thermal jacket of 40mm thickness.



The IBC is supplied with its own IP65 control box (accuracy to + or - 2°C) and one thermostat. This thermostat is fixed to the bottom cone of the container.

Various trace-heating cables are available covering the following temperature ranges, below 35°C, below 60°C, below 100°C, or below 130°C.

The advantage is that this system is more “sophisticated”; accuracy of control is high and it is economical and convenient to use.

The only disadvantage is that you cannot service the trace heating cable. Certain guarantees are however offered for covering the cable.

We would also like to point out that the heating equipment and capacity is designed to maintain temperature and not to increase temperature rapidly. Trials with 800 litres of water show that the increase in temperature is approximately 1°C per hour during the heating cycle and, with the heating circuit switched off, will cool at around 2 -3°C per 24 hours. The ambient temperature was between 10° and 16°C.

Budget price for 1000 litre unit in Aisi 304, four walls heated is £4800.00/£5300.00

1.4 Mixers for Heated IBCs

We can supply Air driven or Electrical mixers to assist in the distribution of heat should the product have a low IBC low thermal conductivity, these can be permanently mounted, or de-mountable, so that one mixer motor can be moved from one IBC to another, with the shaft and paddle assembly either permanently attached to the IBC or removable.

ATEX approved bearing assemblies and motors are also available for zone 1 and 2 areas.

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