



# **COMPARISON OF FULLY WELDED PLATE HEAT EXCHANGERS TO SHELL AND TUBE HEAT EXCHANGERS**

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## **ABSTRACT**

The Fully welded plate heat exchanger is an economical and efficient type of heat exchanger on the market with its low cost, flexibility, easy maintenance, and high thermal efficiency.

The Fully welded plate heat exchanger proves superior in many aspects when compared to shell & tube heat exchangers with the usual construction design and identical conditions for process engineering.

The use of less material in fully welded plate heat exchanger in compare to shell and tube heat exchanger means considerable cost reduction potential when high-grade alloys are required.

The welded plate compact design allows a heating surface density of 700 m<sup>2</sup>/m<sup>3</sup>. The special construction of the flow pattern ensures that the heat transfer for gases as well as for liquids is extremely enhanced.

A further advantage in comparison with shell & tube heat exchangers is the high economic efficiency of the welded plate heat exchanger.

There are different types of fully welded plate Heat Exchangers. They usually have a high-pressure capability and wide operating temperature range in comparison to equivalent shell and tube types.

This article makes a comparison between welded plate heat exchanger and shell and tube heat exchanger in cost, liquid charge, maintenance, application, operational weight and thermal efficiency and also describes different types of welded plate heat exchangers.

### **Key words:**

PHE: Plate Heat Exchanger

Evaporators :device which causes water to be evaporated.

Herringbone: decorate in a zigzag pattern .