

PLATE HEAT EXCHANGER



Solar/heating plate heat exchanger

The plate heat exchangers are made of thin, corrugated stainless-steel (AISI 316) plates, soldered together under vacuum using copper as solder. Max. design temperature is 160 °C, max. design pressure is 16 bar for types PWT 10N-50N and 32 bar for all the other types.

Solar/swimming pool plate heat exchanger

The plate heat exchangers are made of thin corrugated stainless-steel (AISI 316) plates, joined using stainless-steel diffusion technology. (Corrosion-resistant like stainless steel) A higher pressure, temperature and corrosion resistance compared to copper-soldered plate heat exchangers is achieved in this manner. (See following pages)

Heat insulation

Made of polyurethane with blue ABS coating. Insulation thickness: 30 mm, max. temperature: 140 °C.

Screw connections

Made of red brass with male thread.

Foot and mounting brackets

Made of galvanised steel. Types PWT 100N-200N may be floor or wall mounted. Types PWT 300N-500N may only be floor mounted.

TANK ACCESSORIES

PLATE HEAT EXCHANGER PRESSURE LOSSES

Plate heat exchanger pressure losses on the primary side (prop. glycol 46%)

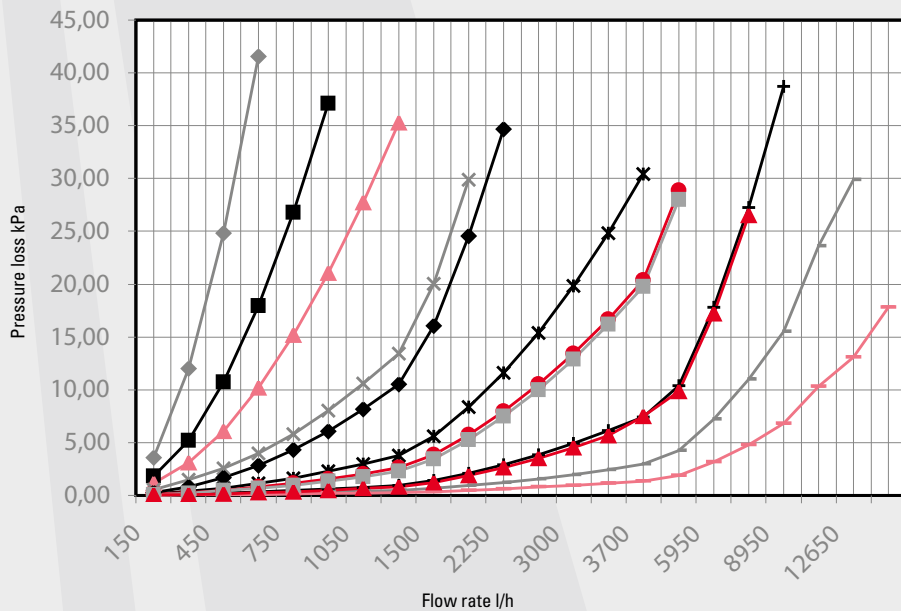
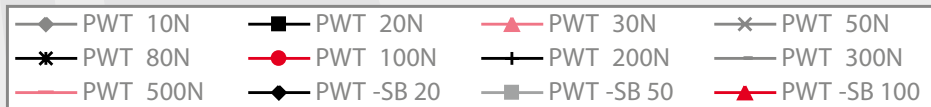


Plate heat exchanger pressure losses on the secondary side (water)

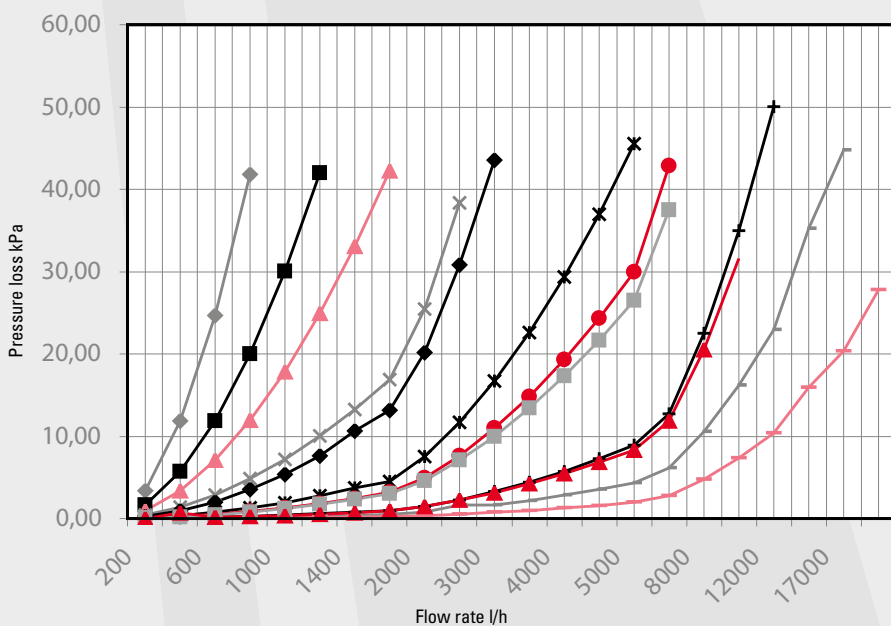
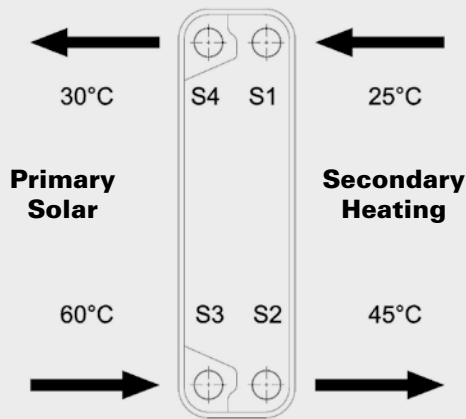
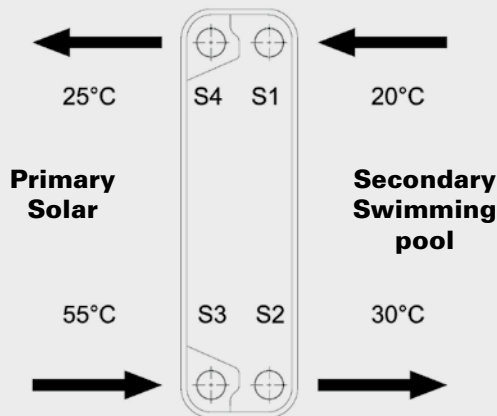


PLATE HEAT EXCHANGER TEMPERATURE EXAMPLES



Solar/Heating



Solar/Swimming pool

Effects of water constituents in hot water systems on copper-soldered plate heat exchangers

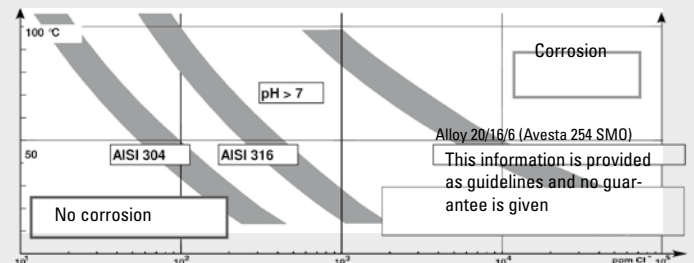
The following water quality values should be observed for hot water systems in order to minimise the corrosion effects in copper-soldered plate heat exchangers:

pH value	7 to 9	Free chlorine	< 0.5 ppm
SO ₄ ⁻⁻	< 100 ppm	Fe ⁺⁺⁺	< 0.5 ppm
HCO ₃ ⁻ /SO ₄ ⁻⁻	> 1	Mn ⁺⁺	< 0.05 ppm
Cl ⁻	< 50 ppm	CO ₂	< 10 ppm
PO ₄ ⁻⁻	< 2 ppm	H ₂ S	< 50 ppb
NH ₃	< 0.5 ppm	Conductivity	> 50 µS/cm < 600 µS/cm
Wall temperature	< 80 °C		

Further corrosion-relevant factors include:

Water contamination, flow rates, impurities/incrustation in heat exchangers and mixing installations. The figures are provided as guidelines and do not represent a basis for warranty.

Effects of chloride ion concentration and temperature on pitting and stress crack corrosion tendency in stainless steel.



Other factors influencing these types of corrosion include:

- pH value
- Surface properties
- Water velocity
- Impurities (biological and incrustation)
- Contaminants such as CO, HS, SO, iron
- Redox potential of the solution (depending on oxidizing substances such as oxygen, hypochlorous acids, sodium bicarbonate)