HEATEX
QUALITY & COMPETENCE

Technical Information Counterflow Heat Exchangers

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Leakage and sealing of heat exchangers

Leakage

It is important to understand that a 100% tight plate heat exchanger is not possible to manufacture. The exchanger will always have some small leakage so the design of the air handling unit should be made in such a way that leakage will take place from the clean side to the less clean side. This is achieved by making sure that the pressure on the clean side is higher than on the other side.

If it is unacceptable with water leaking over to the supply side the design of the air handling unit must be made in such a way that there always will be a higher pressure on the supply side than on the exhaust side.

As a standard we put glue in the foldings of all our M-type exchangers. This results in a heat exchanger that has very low leakage (internally and externally), around 0.1% of the nominal air flow at a pressure difference of 700 Pa.
For lower pressure drops the leakage will be smaller (at 150 Pa it will be about half as big).

Should an even tighter exchanger be required we can as an option offer an extra sealing that is achieved by putting a layer of lacquer coating over all the joints. This will result in an extremely tight heat exchanger. By using this options the heat exchanger will be suitable to reach IP65 tightness in the application provided that maximum allowed pressure drop of 700Pa not is exceeded.

IP 65 suitable heat exchangers available on request

In general a statistical testing of leakage is performed and as an option customers can have every single heat exchanger leakage tested and delivered with a leakage test protocol.

Sealing

Standard sealing material on all aluminium (and epoxy coated aluminium) heat exchangers is a silicone free sealant. This can be used for temperatures up to 90°C.

Please observe that silicone may never be used in connection with paint spray booths or with cooling of electronics because that will damage the process.

Non-Silicone

Physical / chemical properties

Uncured sealant:		
Type:	MS-hybrid polymer, 1-component	
Colours:	Grey	
Contains fungicide:	No	
Consistency:	Paste, tixotropic	
Specific gravity:	approx. 1,5 kg/litre	
Cured sealant		
Paintable:	Yes	
Hardness:	approx. 35 Shore A	
100% modulus:	approx. 0,7 N/mm^2	
Maximum movement accommodation	+/- 20%	
Elastic recovery:	approx. 60%	
Resistance:	Temperature:	approx. -40^0 C to +90^0 C
	Climatic ageing:	Good
	Good resistance to:	Water, seawater, aliphatic solvents, oil, grease, diluted organic acids and bases.
	Not resistance to:	Concentrated acids and chlorinated organic solvents.