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| Consultant specification sheet Brazed heat exchangers |

Product family: Brazed heat exchangers, BHE

Specific products: Crazed heat exchanger, BHEto XXX-----------------------------------------------B16, 18, 20, 30, 60, 110, 112, 200, 300, 400

Comment: Standard version of products

General specifications:

* Supplier of the heat exchanger is Alfa Laval.
* Design of the heat exchanger shall be based on plate technology.
* Supplier of the heat exchanger shall control all steps in the chain;   
  R&D, design, material purchase, plate pressing, brazing, testing, sales, after market etc.
* Supplier shall include all maintenance and installation manuals for the heat exchanger.
* Supplier shall be able to supply 2 and 3D drawings for the heat exchanger.
* All plates shall be single step pressed to secure uniform thickness of the plate and have no weak spots.
* All plates shall be pressed with herring bone or arrow pattern to give maximum turbulence, heat transfer capacity and contact points in the heat exchanger.
* Heat exchangers with asymmetric channels shall be selected where needed for pressure drop or flow reasons.
* All channel plates shall be with pressed alloy 316 stainless steel material.
* Pure copper (minimum 99,9%) shall be used as brazing material.
* The stainless steel plates should be brazed together in all contact points created between the adjacent plates as well as around the periphery of the plates to ensure a pressure resistant unit.
* Available pressure vessel codes from the supplier shall be; CE, KHK, KRA, CRN, UL, and ASME.
* Supplier shall test 100% of the heat exchangers prior to dispatch.
* All heat exchangers shall be tested in accordance with the specific pressure vessel code it has been produced for.
* All heat exchangers shall be pressure tested with air.
* All heat exchangers shall be leak tested with helium.
* All heat exchangers shall be produced in production facilities that are quality certified according to ISO 9001.
* All heat exchangers shall be produced in production facilities that are environmentally certified according to ISO 14001.
* All heat exchangers shall have an environmental product declaration in accordance with ISO 14021.
* Insulation for cooling or heating shall be offered by the supplier.
* All heat exchangers shall be marked with a sticker showing:
  + Manufacturer
  + Article number
  + Type
  + Manufacturing number
  + Manufacturing date
  + Max/min temperature
  + Max/min pressure
  + Test pressure
  + Volume
  + Fluid group
  + Part number
  + Pressure vessel stamp
  + Inlet/outlet orientation