

Data Required for Selection of a Shell & Tube Heat Exchanger

ASME: yes/no

Date: _____

TEMA class: C / B / R / Not Required

Type: _____

Applicable codes: _____ (CRN / ABS / PED and etc)

(Straight tube/Fixed and etc)

| | | Hot side | Cold side |
|--|--|------------|------------|
| | | Tube/shell | Tube/shell |
| 1 | Inlet pressure (psig) | | |
| 2 | Fluid Circulated (eg. Water, steam, oil ISO VG 68) | | |
| 3 | Flow rate (GPM or lb/hr) | | |
| 4 | Temperature in/out (°F) | / | / |
| 5 | Heat load (Btu/hr) | | |
| 6 | Allowable pressure drop (psi) | | |
| 7 | Fouling factor | | |
| Fluid Physical Properties: (only required for unusual fluids) | | | |
| 8 | Specific Gravity | | |
| 9 | Specific Heat (BTU/lb-°F) | | |
| 10 | Viscosity (cP) | @ °F | @ °F |
| 11 | Thermal Conductivity (BTU/hr-°F-ft ² /ft) | | |

MATERIALS OF CONSTRUCTION REQUIRED

| | |
|---------------------------|-----------------------------|
| Shell: | |
| Baffles: | |
| Tubes: | |
| Tubesheets: | |
| Bonnets/Channels: | |
| Gaskets: | Compressed Fiber (standard) |
| Plate & Frame: | 304 / 316 / Titanium |
| Brazed plate | Copper / Nickel |

SELECTION RESTRICTIONS (Optional)

Min. Tube Diameter: 1/4, 3/8, 1/2, 5/8, 3/4, 1"

No. of Tubeside Passes: _____

Must Bundle be Removable: _____

Are Lo-Fin Tubes Allowable: _____

Max. Overall Length: _____ ft.

Are Flanged Conns Req'd: _____

Are U-tubes Allowed: _____

Special Requirements/Notes:

Friendly note: Q_{hot} must equal Q_{cold}

$$Q_{hot} = \dot{m}_{hot} \times C_{p_{hot}} \times \Delta T_{hot}$$

$$Q_{cold} = \dot{m}_{cold} \times C_{p_{cold}} \times \Delta T_{cold}$$

Where \dot{m} is mass flow rate; C_p is specific heat; and ΔT is temperature difference