

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

### MATERIALS OF CONSTRUCTION REQUIRED

<b>Shell:</b>	
<b>Baffles:</b>	
<b>Tubes:</b>	
<b>Tubesheets:</b>	
<b>Bonnets/Channels:</b>	
<b>Gaskets:</b>	Compressed Fiber (standard)
<b>Plate &amp; Frame:</b>	304 / 316 / Titanium
<b>Brazed plate</b>	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  $\Delta T$  is temperature difference**