Avishkar 2011

PROBLEM STATEMENT 4

Tubular heat exchangers are very important and widely used in process industries. Here, the task is to design a shell and tube heat exchanger which cools a process gas using boiler feed water (BFW).Following data has to be used for designing the exchanger.

	PROCESS GAS	BFW
Flow rate	243701 kg/hr	182089 kg/hr
Inlet temp	226° C	176° C
Outlet temp	190° C	199° C
Operating pressure	29.8 kg/cm^2	130 kg/cm^2
Allowable pressure drop	0.2 kg/cm^2	0 .15 kg/cm^2
Density	12.3 kg/m^3	899 kg/m^3
Viscosity	0.021 centi poise	0.156 centipoise
Specific heat	0.496 kcal/kg$^\circ$ C	1.039 kcal/kg$^\circ$ C
Thermal conductivity	0.08 kcal/m$^\circ$ C hr	0.587 kcal/m$^\circ$ C

The dirt factor is 0.0002.

Submit your answers @ anveshans.rasayans2k11@gmail.com