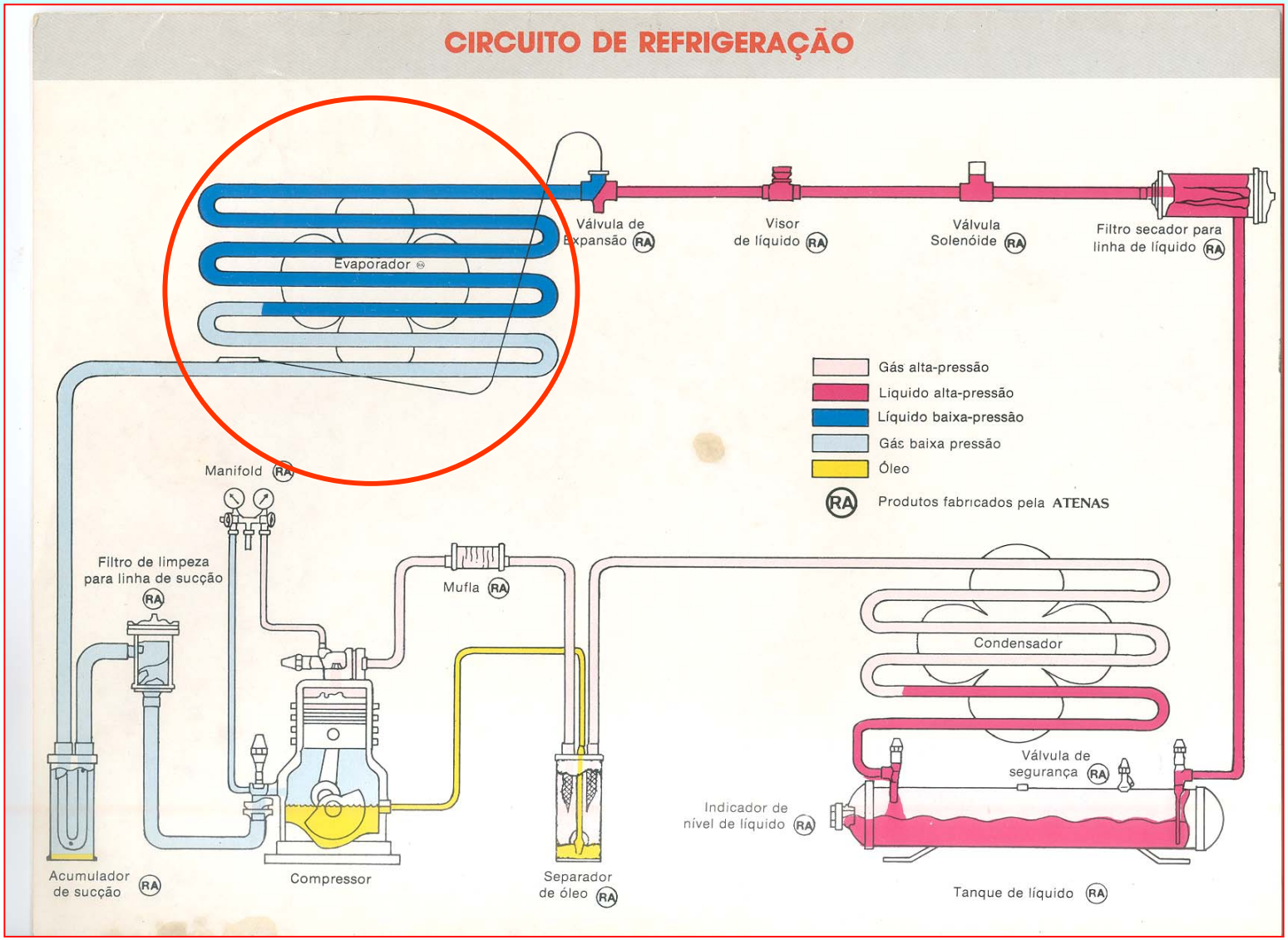
Universidade Federal do Paraná
Setor de Tecnologia
Departamento de Engenharia Mecânica

TM-182 REFRIGERAÇÃO E CLIMATIZAÇÃO

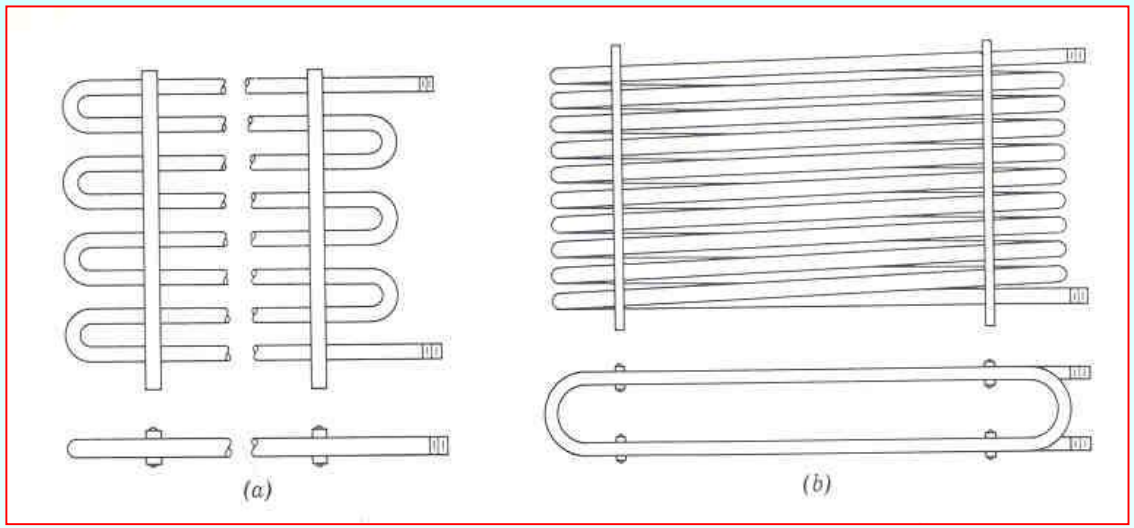
Prof. Dr. Rudmar Serafim Matos

8. EVAPORADORES



8. EVAPORADORES

8.1 TIPOS CONSTRUTIVOS DOS EVAPORADORES



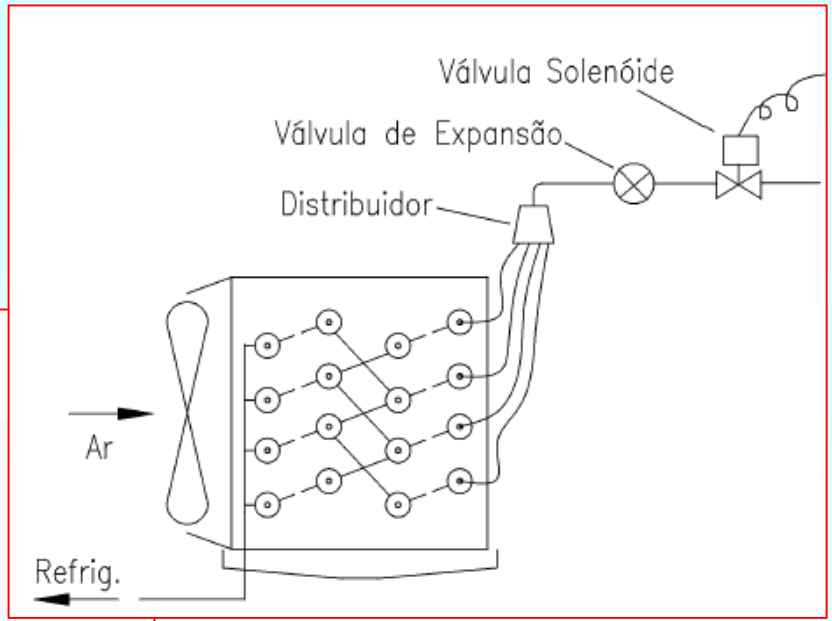
DE TUBO LISO

DE PLACA

8. EVAPORADORES

8.1 TIPOS CONSTRUTIVOS DOS EVAPORADORES

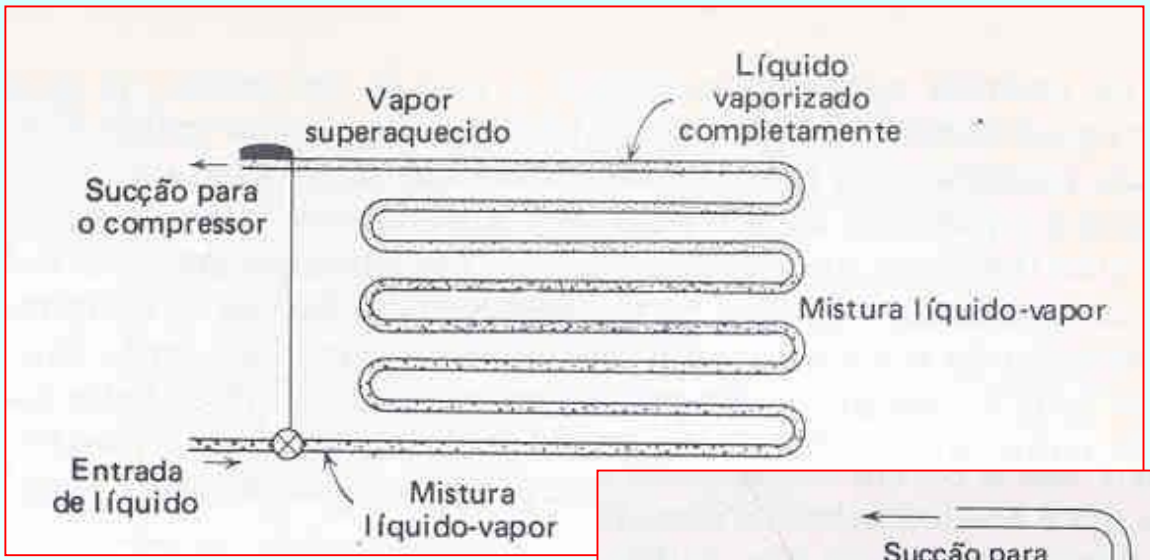
DE TUBOS ALETADOS



CIRCUITO DO EVAPORADOR

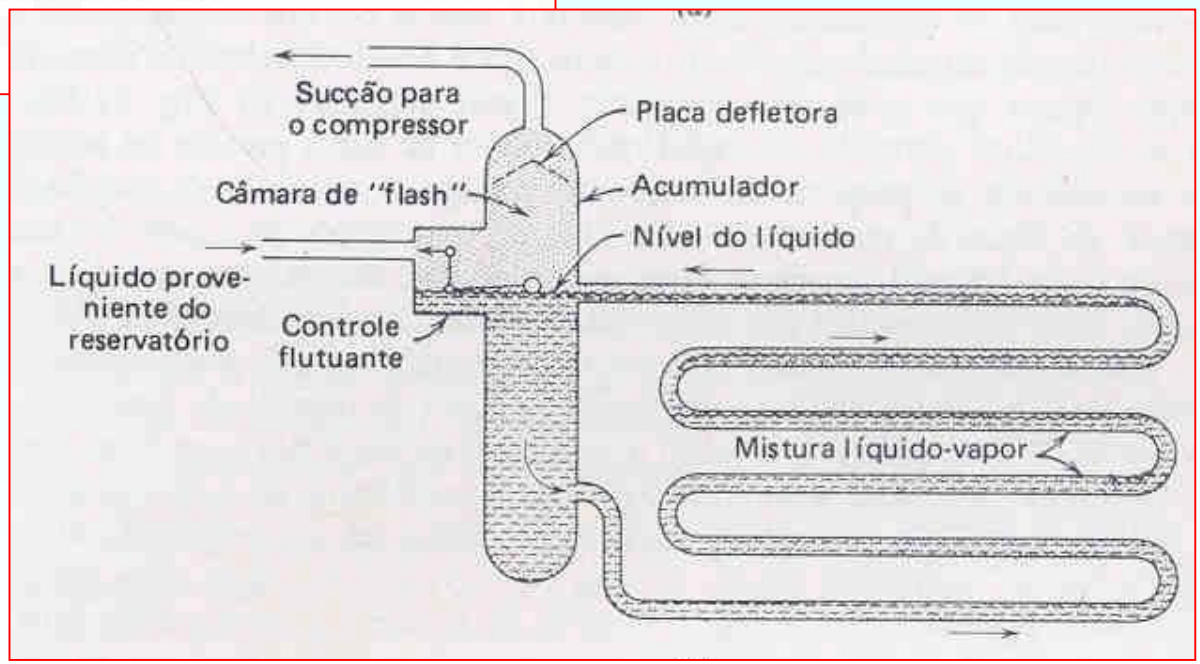
8. EVAPORADORES

8.3 MÉTODOS DE ALIMENTAÇÃO DOS EVAPORADORES



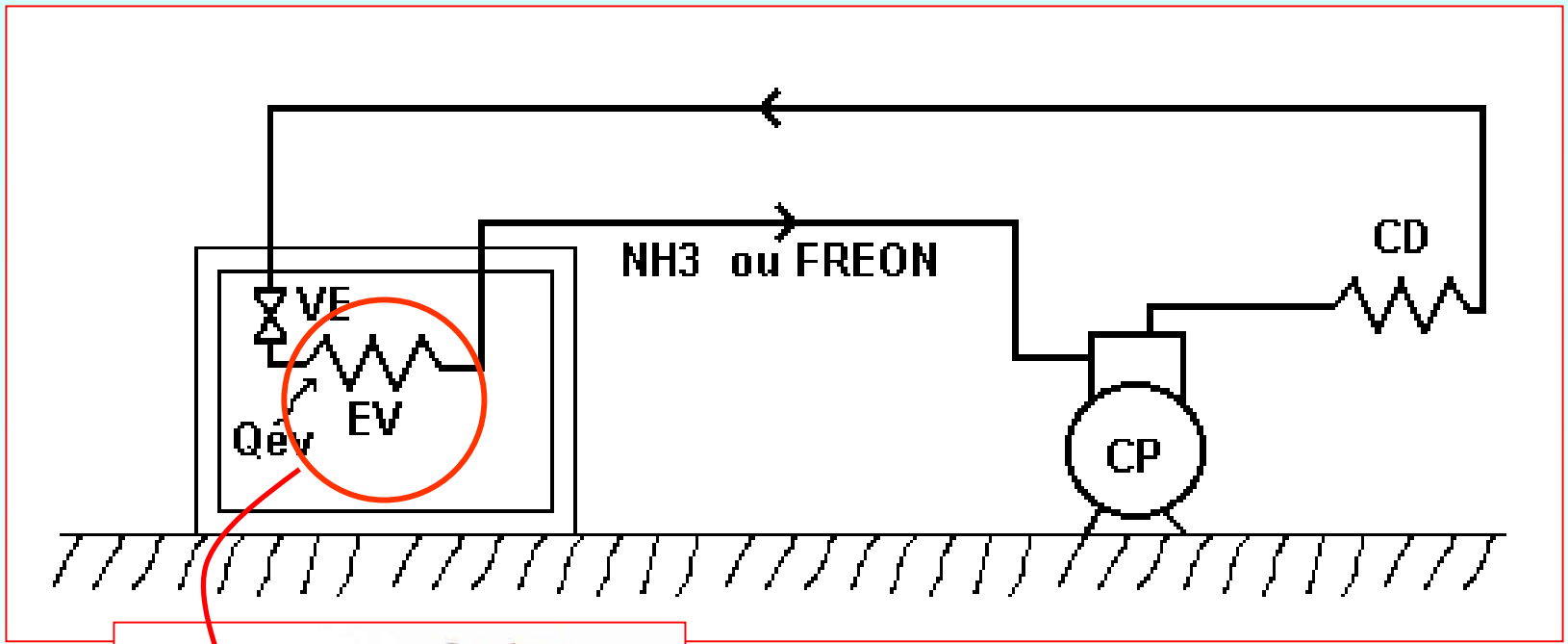
DE EXPANSÃO SECA

INUNDADO



8. EVAPORADORES

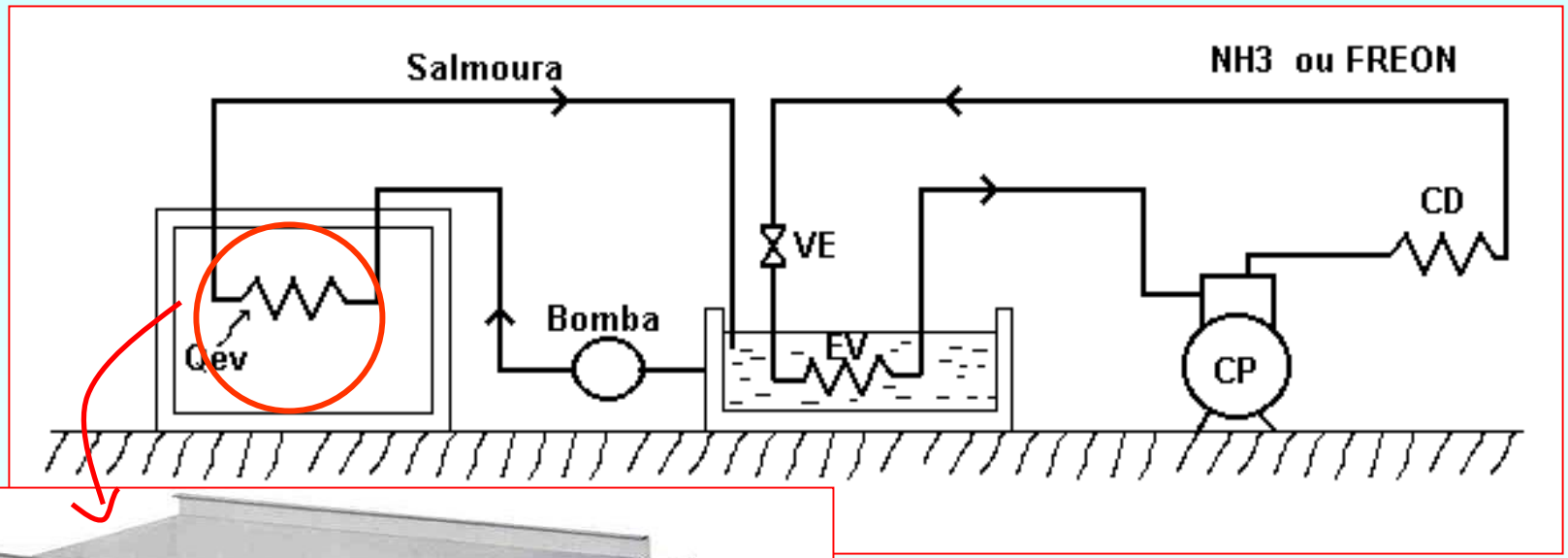
8.4 SISTEMAS DE EXPANSÃO DIRETA E INDIRETA

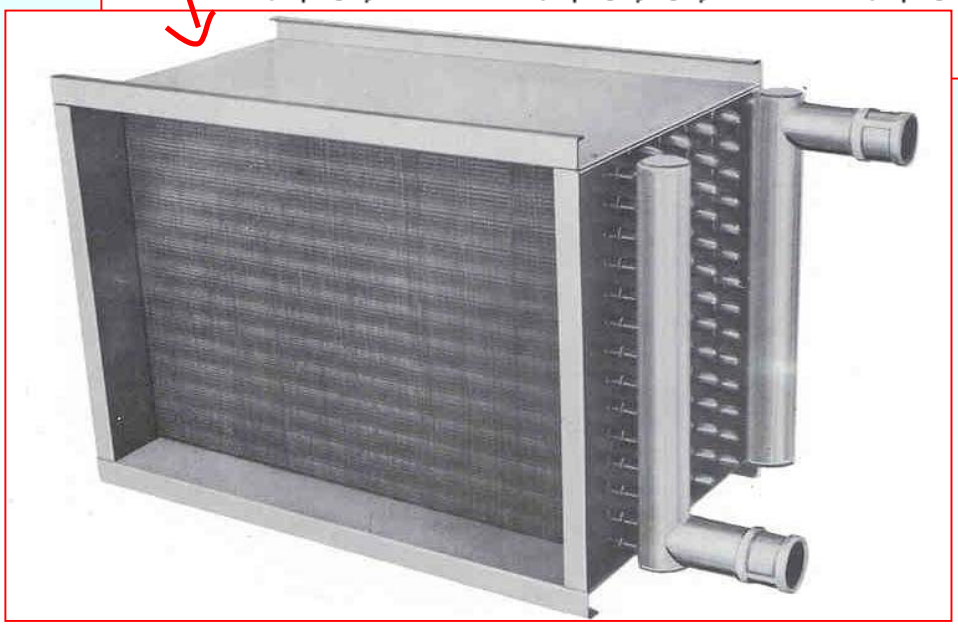


DIRETA

8. EVAPORADORES

8.4 SISTEMAS DE EXPANSÃO DIRETA E INDIRETA

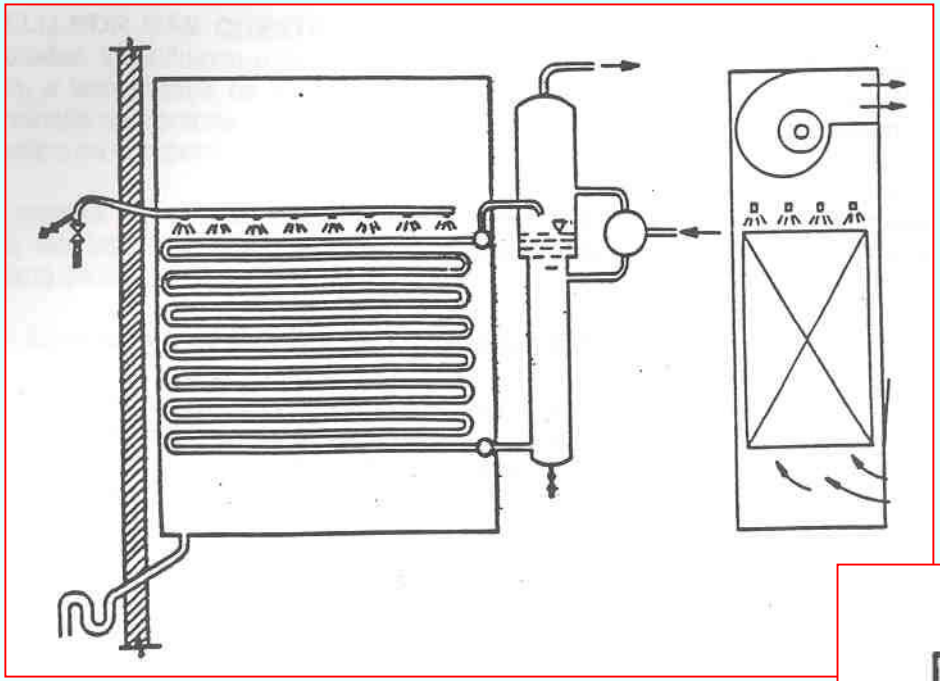




INDIRETA

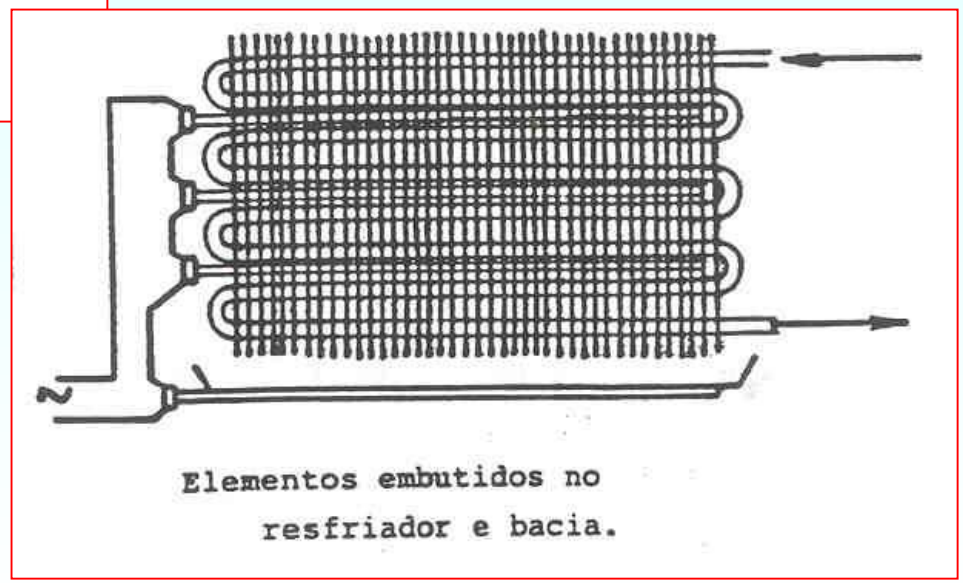
8. EVAPORADORES

8.6 METODOS DE DEGELO



A ÁGUA

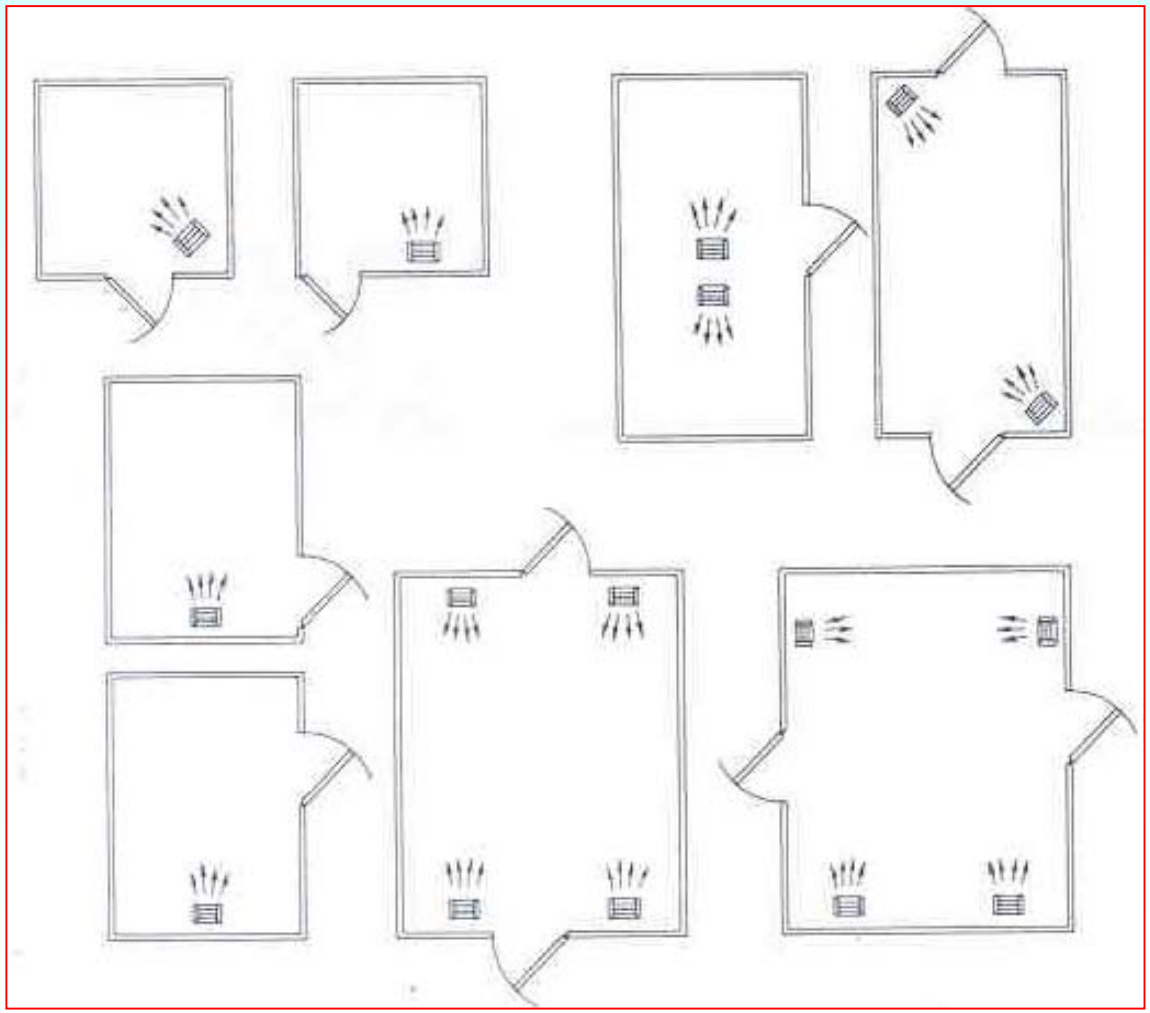
ELÉTRICO



Elementos embutidos no resfriador e bacia.

8. EVAPORADORES

8.7 LOCALIZAÇÃO DO EVAPORADOR



8.8 CAPACIDADE DO EVAPORADOR

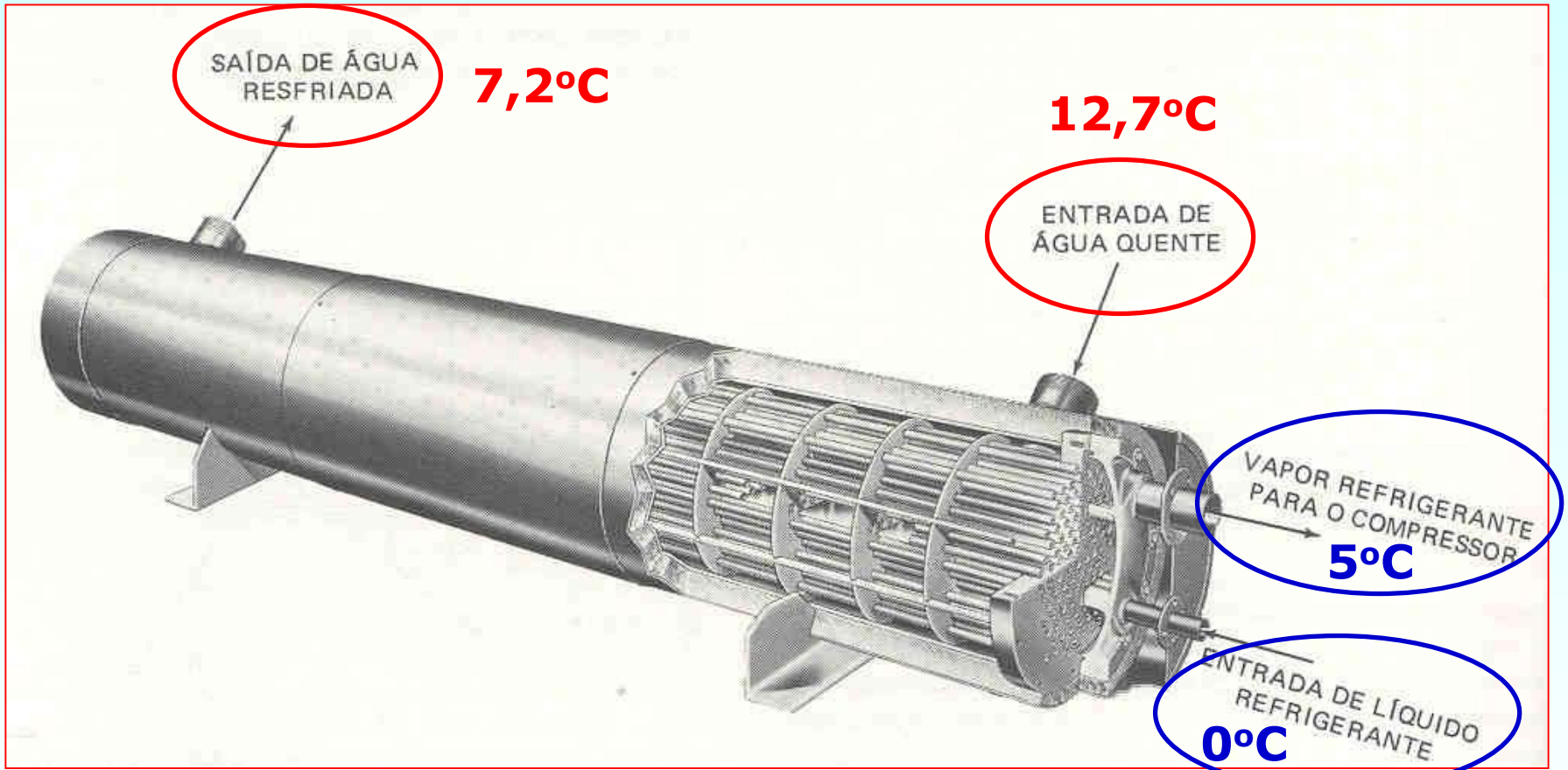
$$\dot{Q}_e = U \times A \times LMTD$$

$$LMTD = \frac{(t_e - t_r) - (t_s - t_r)}{\ln \frac{(t_e - t_r)}{(t_s - t_r)}}$$

$$v_{ar} = \frac{\dot{Q}_{ar}}{A_f}$$

8. EVAPORADORES

8.10 RESFRIADORES DE LÍQUIDO



8. EVAPORADORES

8.11 TROCADOR DE PLACAS