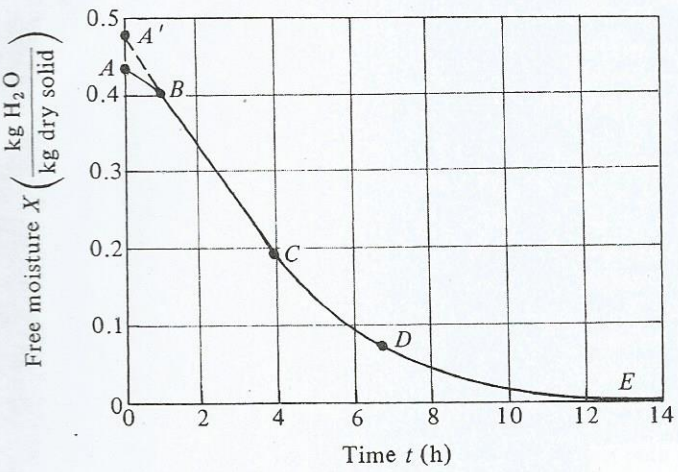
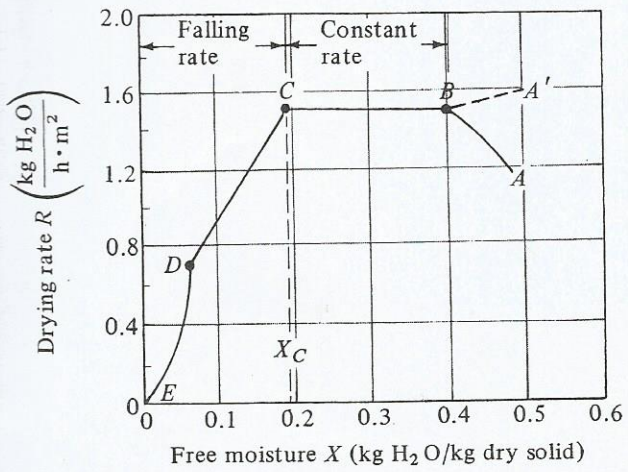
where $R$ is drying rate in kg $H_2O/h \cdot m^2$, $L_S$ kg of dry solid used, and $A$ exposed surface area for drying in $m^2$. In English units, $R$ is $lb_m$ $H_2O/h \cdot ft^2$, $L_S$ is $lb_m$ dry solid, and $A$ is $ft^2$. For obtaining $R$ from Fig. 9.5-1a, a value of $L_S/A$ of 21.5 kg/$m^2$ was used. The drying-rate curve is then obtained by plotting $R$ versus the moisture content, as in Fig. 9.5-1b.

Another method to obtain the rate-of-drying curve is to first calculate the weight loss $\Delta X$ for a $\Delta t$ time. For example, if $X_1 = 0.350$ at a time $t_1 = 1.68$ h and $x_2 = 0.325$ at a time $t_2 = 2.04$ $h$, $\Delta X/\Delta t = (0.350 - 0.325)/(2.04 - 1.68)$. Then, using Eq. (9.5-4) and




(a)




(b)

FIGURE 9.5-1. *Typical drying-rate curve for constant drying conditions: (a) plot of data as free moisture versus time, (b) rate of drying curve as rate versus free moisture content.*