

M = weight of stock dried in a continuous dryer, pounds per hour.
 M_1 = weight of stock charged in a discontinuous dryer, pounds per batch.
 $\Delta p = p_s - p_a$ = vapor pressure difference, atmospheres.
 p_a = partial pressure of water vapor in air, atmospheres.
 p_s = vapor pressure of water at t_s , atmospheres.
 t_a = air or gas temperature, Fahrenheit.
 t_s = temperature of particle, solid or surface of evaporation, Fahrenheit.
 t_w = wet-bulb temperature of drying air, Fahrenheit.
 t_1 = make-up air temperature, Fahrenheit.
 t_2 = temperature of air entering stock, Fahrenheit.
 t_3 = exhaust air temperature, Fahrenheit.
 t_{m1} = entering stock temperature, Fahrenheit.
 t_{m2} = leaving stock temperature, Fahrenheit.
 $\Delta t = (t_a - t_s)$ = temperature difference between air and surface of evaporation, Fahrenheit.
 Δt_m = logarithmic mean between temperature entering and leaving the bed, and the wet-bulb temperature, Fahrenheit.
 W_1 = humidity ratio of entering air, pounds of water vapor per pound of dry air.
 W_2 = humidity ratio of leaving air, pounds of water vapor per pound of dry air.
 w = moisture content on dry basis at any time θ , pounds of water per pound.
 w_c = critical moisture content, pounds water per pound dry material.
 w_d = water content, dry basis, of the drop as it enters the drying chamber, pounds per pound of dry solid.
 w_e = moisture content at equilibrium with external conditions, pounds per pound dry material.
 w_o = initial moisture or moisture content at start of diffusional period, pounds per pound dry material.
 $\frac{dw}{d\theta}$ = drying rate, pounds of water per (hour) (pound dry material).
 $\left(\frac{dw}{d\theta}\right)_c$ = constant drying rate, pounds per (hour) (pound dry material).
 $\left(\frac{dw}{d\theta}\right)_f$ = falling rate, pounds water per (hour) (pound of dry stock).
 θ = time, hours.
 ρ_s = bulk density of dry granular bed, density of dry particle, pounds per cubic foot.

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