

- $h_o$  = friction loss under actual (operating) conditions, any consistent units.  
 $h_c$  = pressure loss due to sudden contraction, feet of fluid flowing.  
 $h_e$  = pressure loss due to sudden enlargement, feet of fluid flowing.  
 $h_f$  = friction loss, feet of fluid flowing.  
 $h_s$  = regain in static pressure, feet of fluid flowing.  
 $h_u$  = friction loss under standard conditions, any consistent units.  
 $h_v$  = total dynamic pressure loss, feet of fluid flowing.  
 $k$  = conductivity, Btu per (hour) (sq ft) (Fahrenheit degree per inch).  
 $L$  = additional equivalent length of duct for loss in elbows, feet.  
 $L/W$  and  $L/D$  = additional equivalent length in terms of width and diameter, dimensionless.  
 $l$  = length of straight duct, feet.  
 $P$  = perimeter of duct, feet.  
 $Q_a$  = air quantity, cubic feet per minute.  
 $Q_w$  = heat loss through duct walls, Btu per hour.  
 $R$  = centerline radius of elbow, or vane radius as noted, feet.  
 $R/W$  and  $R/D$  = radius ratio, dimensionless.  
 $r$  = loss through specified duct sections, inches of water.  
 $t_1$  = temperature of air entering duct, Fahrenheit degrees.  
 $t_2$  = temperature of air leaving duct, Fahrenheit degrees.  
 $t_3$  = temperature of air surrounding duct, Fahrenheit degrees.  
 $U$  = thermal transmittance coefficient, Btu per (hour) (square foot) (Fahrenheit degree).  
 $V$  = mean velocity of standard air, feet per minute.  
 $V_m$  = mean velocity of air or fluid, feet per minute.  
 $V_1$  = mean velocity of standard air in inlet duct section, feet per minute.  
 $V_2$  = mean velocity of standard air in outlet duct section, feet per minute.  
 $v$  = mean fluid or air velocity, feet per second.  
 $v_1$  = mean velocity in inlet duct section, feet per second.  
 $v_2$  = mean velocity in outlet duct section, feet per second.  
 $W$  = duct dimension in plane of bend, feet.  
 $w$  = weight rate of air flow through duct, pounds per hour.  
 $z$  = thickness, inches.

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