ERRATA SHEET FOR
ANSI/ASHRAE STANDARD 33-2016
Methods of Testing Forced-Circulation Air-Cooling and Air-Heating Coils

May 4, 2020

The corrections listed in this errata sheet apply to the first printing of ANSI/ASHRAE Standard 33-2016 identified on the outside back cover as "Product code: 86083 4/16". The shaded items have been added since the previously published errata sheet dated July 22, 2016 wad distributed.

Page	Erratum
4	**Section 5 Symbols.** In the symbols for SG, W and ΔW change the units from "kg dry water (lb dry water)" to "kg dry air (lb dry air)" as shown below. *(Note: Additions are shown in underline and deletions are shown in ~~strikethrough~~.)* SG = specific gravity, as in correcting for relative density of air-water vapor mixture = $\frac{1+W}{1+\frac{W}{0.622}}$ (dry air SG = 1.00), kg air-water vapor mixture/(kg dry air~~water~~) [lb air-water vapor mixture/(lb dry air~~water~~)] W = humidity ratio of air-water vapor mixture, kg water vapor mixture/(kg dry air~~water~~) [lb water vapor mixture/(lb dry air~~water~~)] ΔW = difference in air humidity ratio across dehumidifying coil, kg water vapor mixture/(kg dry air~~water~~) [lb water vapor mixture/(lb dry air~~water~~)]
15	**In Section 11.1.2.** The equations are missing the term $(1-\beta^4)$ in the denominator and should read as follows: $w_a = \frac{6.556}{10^5} C_N (D_N)^2 E \cdot \phi \left(\frac{\Delta p_N P_{N1}}{T_{N1db}(1-\beta^4)(1+W_{N1})\left(1+\frac{W_{N1}}{0.622}\right)} \right)^{0.5}$, kg dry air/s $[w_a = 6.888 C_N (D_N)^2 E \cdot \phi \left(\frac{\Delta p_N \cdot P_{N1}}{T_{N1db}(1-\beta^4)(1+W_{N1})\left(1+\frac{W_{N1}}{0.622}\right)} \right)^{0.5}$, lbm dry air/min]
TD-33_Steam_SI	The formula for SG_m - Average air specific gravity in Data Number {48} incorrectly divided the entire numerator by 0.622 and should read: $\frac{1+\{47\}}{1+\frac{\{47\}}{0.622}}$

TD-33_Steam_SI The formula for Nozzle factor formula in Data Number {26} has been updated to reflect the correction for average air specific gravity and should read:

$$E\varphi\left(\frac{\{13\}(\{5\}+\{14\})}{\{25\}(1-\beta^4)(1+\{24\})\left(1+\frac{\{24\}}{0.622}\right)}\right)^{0.5}$$

TD-33_Steam_I-P The formula for SG_m - Average air specific gravity in Data Number {48} incorrectly divided the entire numerator by 0.622 and should read:

$$\frac{1+\{47\}}{1+\frac{\{47\}}{0.622}}$$

TD-33_Steam_I-P The formula for Nozzle factor formula in Data Number {26} has been updated to reflect the correction for average air specific gravity and should read:

$$E\varphi\left(\frac{\{13\}(\{5\}+\{14\})}{\{25\}(1-\beta^4)(1+\{24\})\left(1+\frac{\{24\}}{0.622}\right)}\right)^{0.5}$$

TD-33_DX_I-P The formula for SG_m - Average air specific gravity in Data Number {114} incorrectly divided the entire numerator by 0.622 and should read:

$$\frac{1+\{113\}}{1+\frac{\{113\}}{0.622}}$$

TD-33_DX_I-P The formula for Nozzle factor formula in Data Number {49} has been updated to reflect the correction for average air specific gravity and should read:

$$E\varphi\left(\frac{\{13\}(\{5\}+\{14\})}{\{48\}(1-\beta^4)(1+\{47\})(1+\frac{\{47\}}{0.622}}\right)^{0.5}$$

TD-33_DX_SI The formula for SG_m - Average air specific gravity in Data Number {114} incorrectly divided the entire numerator by 0.622 and should read:

$$\frac{1+\{113\}}{1+\frac{\{113\}}{0.622}}$$

TD-33_DX_SI The formula for Nozzle factor formula in Data Number {49} has been updated to reflect the correction for average air specific gravity and should read:

$$E\varphi\left(\frac{\{13\}(\{5\}+\{14\})}{\{48\}(1-\beta^4)(1+\{47\})(1+\frac{\{47\}}{0.622}}\right)^{0.5}$$

TD-33_Single-Phase-SI The formula for SG_m - Average air specific gravity in Data Number {60} incorrectly divided the entire numerator by 0.622 and should read:

$$\frac{1+\{59\}}{1+\frac{\{59\}}{0.622}}$$

TD-33_Single-Phase-SI The formula for Nozzle factor formula in Data Number {32} has been updated to reflect the correction for average air specific gravity and to correct equation references and should read:

$$E\varphi\left(\frac{\{13\}(\{5\}+\{14\})}{\{31\}(1-\beta^4)(1+\{30\})\left(1+\frac{\{30\}}{0.622}\right)}\right)^{0.5}$$

TD-33_Single-Phase-I-P The formula for SG_m - Average air specific gravity in Data Number {60} incorrectly divided the entire numerator by 0.622 and should read:

$$\frac{1+\{59\}}{1+\frac{\{59\}}{0.622}}$$

TD-33_Single-Phase-I-P The formula for Nozzle factor formula in Data Number {32} has been updated to reflect the correction for average air specific gravity and to correct equation references and should read:

$$E\varphi\left(\frac{\{13\}(\{5\}+\{14\})}{\{31\}(1-\beta^4)(1+\{30\})\left(1+\frac{\{30\}}{0.622}\right)}\right)^{0.5}$$