

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

**July 22, 2016**

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”.

<b>Page</b>	<b>Erratum</b>
<b>15</b>	<b>In Section 11.1.2.</b> The equations are missing the term $(1-\beta^4)$ in the denominator and should read as follows:

$$w_a = \frac{6.556}{10^5} C_N (D_N)^2 E \cdot \phi \left( \frac{\Delta p_N P_{N1}}{T_{N1db} (1-\beta^4) (1+W_{N1}) \left(1 + \frac{W_{N1}}{0.622}\right)} \right)^{0.5}, \text{ kg dry air/s}$$

$$[w_a = 6.888 C_N (D_N)^2 E \cdot \phi \left( \frac{\Delta p_N \cdot P_{N1}}{T_{N1db} (1-\beta^4) (1+W_{N1}) \left(1 + \frac{W_{N1}}{0.622}\right)} \right)^{0.5}, \text{ lbm dry air/min}]$$

<b>TD-33_Steam_SI</b>	The formula for $SG_m$ - Average air specific gravity in Data Number {48} incorrectly divided the entire numerator by 0.622 and should read:
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$$\frac{1 + \{47\}}{1 + \frac{\{47\}}{0.622}}$$

<b>TD-33_Steam_SI</b>	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:
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$$E\phi \left( \frac{\{13\}(\{5\} + \{14\})}{\{25\}(1 - \beta^4)(1 + \{24\}) \left(1 + \frac{\{24\}}{0.622}\right)} \right)^{0.5}$$

<b>TD-33_Steam_I-P</b>	The formula for $SG_m$ - Average air specific gravity in Data Number {48} incorrectly divided the entire numerator by 0.622 and should read:
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$$\frac{1 + \{47\}}{1 + \frac{\{47\}}{0.622}}$$

<b>TD-33_Steam_I-P</b>	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:
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$$E\phi \left( \frac{\{13\}(\{5\} + \{14\})}{\{25\}(1 - \beta^4)(1 + \{24\}) \left(1 + \frac{\{24\}}{0.622}\right)} \right)^{0.5}$$

**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:

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

**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:

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

**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:

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