ERRATA SHEET FOR ANSI/ASHRAE STANDARD 103-2007
Methods of Testing for Annual Fuel Utilization Efficiency of Residential Central Furnaces and Boilers

May 10, 2022

The corrections listed in this errata sheet apply to ANSI/ASHRAE Standard 103-2007. The first printing is identified on the outside back cover as “86318 6/08”, the second printing as “Product code: 86318 8/13” and the third printing as “Product code 86318 7/15 Errata Dated June 20, 2016 has been corrected.” The shaded item has been added since the previously published errata sheet dated August 26, 2016 was distributed. The erratum identified with an asterisk “*” applies only to the second printing.

Page 28

Table 8 Fuel Characteristics and Parameters for Calculating Steady-State Sensible Heat Loss (L_{SS,SS}) and Steady-State Efficiency (Eff_{SS}). In the equation at the top of Table 8 change “S,SS =” to “L_{SS,SS} =”.

Page 28

Table 8 Fuel Characteristics and Parameters for Calculating Steady-State Sensible Heat Loss (L_{SS,SS}) and Steady-State Efficiency (Eff_{SS}). Under CF(5) for No. 2 Fuel Oil replace “1.5029209 x 10^{-16}” with “–1.5029209 x 10^{-16}”.

Page 38

11.2.10.6 Off-Cycle Sensible Heat Loss. In Section 11.2.10.6 the nomenclature for \( M_{F,ON} \) should be replaced as follows:

\[
M_{F,P} = \text{rate of flue gas mass flow during the off-period during the post-purge after the burner is shut off as defined in Section 11.6.3}
\]

Page 39

11.2.10.8 Off-Cycle Infiltration Heat Loss. In Section 11.2.10.8 for systems numbered 2, 3, and 4 for cases where \( t_p \) is intended to be less than or equal to 3 minutes, the equation for \( L_{I,OFF1} \) should be:

\[
L_{I,OFF1} = 100 \times C_P \times M_{F,P} \times t_p \left( T_{F,SS} + 460 \right) \times \left[ \frac{1}{t_{ON} \times Q_{IN} \times 60} \right] \times \left[ \frac{70 - T_{OA}}{C_{TS}(T_{F,SS} - T_{F,OFF}(t_p))} \right] \times \ln \left[ \frac{T_{RA} + 460 + C_{TS}(T_{F,SS} - T_{RA})}{T_{RA} + 460 + C_{TS}(T_{F,OFF}(t_p) - T_{RA})} \right]
\]

The nomenclature for \( M_{F,ON} \) should be replaced as follows:

\[
M_{F,P} = \text{rate of flue gas mass flow during the off-period during the post-purge after the burner is shut off as defined in Section 11.6.3}
\]

Page 50

Informative Appendix C – Calculation of Furnace and Boiler Comparative Average Annual Cost. Replace the current equation for burner operating hours (BOH_{SS}) and add a new variable \( K_d \) as shown below.

Replace the current equation for \( BOD_{SS} \)
$BOH_{SS} = 2080(0.77)(A)(Q_{OUT}/(1 + \alpha)) - 2080(B)$

with the corrected equation

$BOD_{SS} = 2080(0.77)(A)((Q_{OUT}/K_4)/(1 + \alpha)) - 2080(B)$

Add the new variable $K_4$ as defined below.

where

$K_4 = \text{Conversion factor, 1000 Btu/kBtu or 1000 Btu per hr/kBtu per hour}$