

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 **Erratum**

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

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

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:

$M_{F,P}$ = 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

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:

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

The nomenclature for $M_{F,ON}$ should be replaced as follows:

$M_{F,P}$ = 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

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_f 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 = Conversion factor, 1000 Btu/kBtu or 1000 Btu per hr/kBtu per hour