ERRATA SHEET FOR REPRINT 12/03 AND ALL PREVIOUS EDITIONS
ANSI/ASHRAE/IESNA STANDARD 90.1-2001 (I-P edition)
Energy Standard for Buildings Except Low-Rise Residential Buildings

December 6, 2004

The corrections listed in this errata sheet apply to the reprint of ANSI/ASHRAE/IESNA Standard 90.1-2001, I-P edition, identified as "86245 PC 12/03" on the outside back cover and to all earlier editions of the standard. The outside back cover marking identifying the previous reprints are "86245 PC 2/03", "86245 PC 2/02" and is blank for the first printing. Shaded items have been added since the previously published errata sheet dated May 20, 2004.

More than one errata sheet may be required for a specific document. Please review the entire list on the ASHRAE website related to the applicable document and download all that apply.

NOTICE: ASHRAE now has a list server for Standing Standards Project Committee 90.1 (SSPC 90.1). Interested parties can now subscribe and unsubscribe to the list server and be automatically notified via e-mail when activities and information related to the Standard and the User's Manual is available. To sign up for the list server please visit **Standards List Servers** on the Standards and Codes section of the ASHRAE website at http://www.ashrae.org/template/AssetDetail/assetid/22410.

Page(s)	Erratum
5	**Section 3.2 Definitions.** Delete the "*Design A*", "*Design B*", "*Design E*" definitions in Section 3.2.
22	**Table 5.3.2.3, SHGC Multipliers for Permanent Projections.** In the first column titled "Projection Factor" change all of the inequality signs from less than "<" to greater than ">".
25	**Section 6. Heating, Ventilation, and Air Conditioning.** To be consistent throughout Section 6 (and with ASHRAE Standard 62) change all references to the term "outside air" to "outdoor air". At minimum this affects Sections 6.1.3c, 6.1.3e, 6.2.3.2.4, Exception to 6.2.3.2.4(a), 6.2.3.3.3, 6.2.3.8, 6.3.1.1.1, 6.3.1.1.3, 6.3.1.1.4, 6.3.1.1.5, 6.3.1.2.1, Exception to 6.3.1.2.1, Exception to 6.3.2.1(a), 6.3.2.2.2a, 6.3.4.3, 6.3.6.1 and Table 6.3.1.1.3B.
27	**Table 6.2.1A, Electrically Operated Unitary Air Conditioners and Condensing Units-Minimum Efficiency Requirements.** In the sixth column titled "Test Procedure[a]" for equipment types "Air Conditioners, Air Cooled" and "Air Conditioners, Water and Evaporatively Cooled" change the test procedure for the size category "≥65,000 Btu/h and <135,000 Btu/h" from "ARI 210/240" to "ARI 340/360".
28	**Table 6.2.1B, Electrically Operated Unitary and Applied Heat Pumps-Minimum Efficiency Requirements.** In the sixth column titled "Test Procedure[a]" for equipment types "Air Cooled (Cooling Mode)" and "Air Cooled (Heating Mode)" change the test procedure for the size category "≥65,000 Btu/h and <135,000 Btu/h" from "ARI

210/240" to "ARI 340/360".

45 **Table 6.2.4.2.1A (Table 6.2.4.3A in earlier editions) Minimum Duct Seal Level.** Change the word "definition" to "description" in footnote "a".

51 **Table 7.2.2 Performance Requirements for Water Heating Equipment.** For Gas Instantaneous Water Heaters relocate the superscript "c" from size category ">50,000 Btu/h and <200,000 Btu/h" to size category "≥200,000 Btu/h" so it now reads "≥200,000 Btu/h [c]". In addition, change the existing size category ">200,000 Btu/h" to read "≥200,000 Btu/h".

59 **Table 10.2, Minimum Nominal Efficiency for General Purpose *Design A* and *Design B* Motors.** The terms "*Design* A" and "*Design* B" in the title should not be italicized. Also, add the following text to the current footnote "a" in Table 10.2: "Design A and Design B are National Electric Manufacturers Association (NEMA) design class designations for fixed frequency small and medium AC squirrel-cage induction motors."

66 **Section 12 Normative References.** Change reference "ARI 310/380-93" to "ARI 310/380-2004".

82, 83 and 84 **Tables A-13, A-14, and A-15.** In the third column change the heading from "Overall U-Factor for Entire Base Wall Assembly" to "Overall U-Factor for the Entire Base Floor Assembly".

124 **Section C6.3 HVAC.** Change the terms in Equation C-3 as follows:

(Note: Deletions are shown in strikethrough and additions are shown in underline)

$$HVAC_{surface} = COOL + HEAT \qquad (C\text{-}3)$$

where

COOL = cooling factor for the surface calculated according to the appropriate equation in ~~C-14, C-19, or C-22~~ C-14, C-19, or C-22

HEAT = heating factor for the surface calculated according to the appropriate equation in ~~C-16, C-18, or C-23~~ C-16, C-18, or C-23

125 **Section C6.7 Delta Load Factors for Mass Walls in the Exterior Building Envelope.** Change Equations CP_7 and CP_8 to read as follows:

$$CP_7 = C_{19} / (A_C^2 B^2) + C_{20} / (A_C B) + C_{21} A_C^2 / \sqrt{B} + C_{22}$$

$$CP_8 = C_8 / (A_C^2 B^2) + C_9 / (A_C B) + C_{10} A_C^2 / \sqrt{B} + C_{11}$$

Also in Section C6.7 (page 126) change Equation HP_7 to read as follows:

$$HP_7 = H_{17} / A_H^3 + H_{18}$$

126 **Section C6.7 Delta Load Factors for Mass Walls in the Exterior Building Envelope.** In the last paragraph of Section C6.7 (below Table C6.7B), change the third sentence as follows:

(Note: Deletions are shown in strikethrough and additions are shown in underline)

If the *U-factor* of the *mass wall* is less than 0.05 Btu/(h·ft^2·°F), th~~a~~en the *U-factor* shall be set to ~~0.5~~ 0.05 Btu/(h·ft^2·°F).

127 **Section C6.8.1 Effective Internal Gain.** In Equation C-13 change the "x" sign to a "+" sign so that the equation now reads "G = EPD + LPDadj$_{zone}$".

130 **C6.10.1 U-Factor fir Below-Grade Walls.** Change Equation C-20 to read as follows:

U-factor = 1 / ((1 / C-factor) + 0.85 + R_{soil})

155 **Table D-2 Canadian Climatic Data.** Relocate the city "Resolute A" (including all associated climate data) from providence "Northwest Territories (NW)" to a new providence "Nunavut" and locate the new providence and city between "Nova Scotia (NS)" and "Ontario (ON)" in Table D-2.