

**ERRATA SHEET FOR FIRST AND SECOND PRINTING OF
ANSI/ASHRAE/IESNA STANDARD 90.1-1999 (SI edition)
Energy Standard for Buildings Except Low-Rise Residential Buildings**

March 23, 2007

The corrections listed in this errata sheet apply to the first and second printing of ANSI/ASHRAE/IESNA Standard 90.1-1999, SI edition. The outside back cover marking identifying the first printing is “GG 1/00” and is “GG 1/01” for the second printing. Shaded items have been added since the previous published errata sheet dated April 20, 2005 was distributed.

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/publications/detail/15620>.

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|-------------|--|
| 16 | Section 4.4.6 Packaged Terminal Air Conditioners. Delete “16 in.” and “42 in.” in the first sentence. These are the corresponding I-P units and should not be included. |
| 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 | TABLE 6.1.3 Eliminate Required Economizer by Increasing Cooling Efficiency. In footnote “*” delete “EER” from the term “EERCOP _c ” so it reads “COP _c ” and change the “0.2” value to “0.0586”. |
| 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(b), 6.2.3.2.5, Exception to 6.2.3.2.5(a), 6.2.3.8, 6.2.3.9, 6.3.1.1.1, 6.3.1.1.3, 6.3.1.1.4, 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 | Exceptions to 6.2.1. Change the full-load design range for the Leaving Chiller Water Temperature from “4.4 °C to 6.7 °C” to “4.4 °C to 8.9 °C”. |
| 44 | Section 6.3.3.1 Fan Power Limitation. In the equation for “Allowable Fan System Power” change the formulas for the air flow variables and their definitions as follows: |

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

Table 6.3.3.1 Fan Power Limitation = Table Value x $\frac{CFM_n \underline{L/S_n}}{\cancel{CFM_n} / 1000}$

Relief Fan Credit \dot{H}_R (kW) = $F_R \dot{H}_R$ (kW) x [1 - (~~CFM_{RF} L/S_{RF}~~ / CFM_h L/S_n)]

CFM_h L/S_n = supply air volume of the unit with the filtering system (L/s)

CFM_{HR} L/S_{HR} = supply air volume of heat recovery coils or direct evaporative humidified/cooler (L/s)

~~CFM_{RF} L/S_{RF}~~ = relief fan air volume at normal cooling design operation (L/s)

45 **Exceptions to 6.3.6.1.** In exception (e) add the word “air” immediately following the word “outdoor”.

74 **Section A3.4 Wood-Framed Walls.** In Section A3.4(b) *Advanced Framing* change “.572 mm” to “572 mm”.

78, 79 and 80 **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” and in the fourth column change the word “Wall” to “Floor” so that it reads “Overall U-Factor for Assembly of Base Floor Plus Continuous Insulation (uninterrupted by framing), Rated R-Value of Continuous Insulation.”.

119 **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)

$$\text{HVAC}_{\text{surface}} = \text{COOL} + \text{HEAT} \quad (\text{C-3})$$

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

120 **Section C6.7 Delta Load Factors for Mass Walls in the Exterior Building Envelope.** Change Equations CP₇ and CP₈ to read as follows:

$$\text{CP}_7 = C_{19} / (A_C^2 B^2) + C_{20} / (A_C B) + C_{21} A_C^2 / \sqrt{B} + C_{22}$$

$$\text{CP}_8 = C_8 / (A_C^2 B^2) + C_9 / (A_C B) + C_{10} A_C^2 / \sqrt{B} + C_{11}$$

Also in Section C6.7 (page 121) change Equation HP₇ to read as follows:

$$\text{HP}_7 = H_{17} / A_H^3 + H_{18}$$

121 **Section C6.7 Delta Load Factors for Mass Walls in the Exterior Building Envelope.** Change the last paragraph of Section C6.7 (below Table C6.7B) as follows:

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

The coefficients H₁ through H₁₈ depend on the position of the insulation in the wall

and are taken from Table C6.7B. If the *U-factor* of *mass wall* is greater than ~~0.4 Btu/(h·ft²·°F)~~ 2.3 W/(m²·K), then the *U-factor* shall be set to ~~0.4 Btu/(h·ft²·°F)~~ 2.3 W/(m²·K). If the *U-factor* of the *mass wall* is less than ~~0.05 Btu/(h·ft²·°F)~~ 0.28 W/(m²·K), then the *U-Factor* shall be set to ~~0.05 Btu/(h·ft²·°F)~~ 0.28 W/(m²·K). If the wall heat capacity (HC) of the *mass wall* is greater than ~~20 Btu/(ft²·°F)~~ 409 kJ/(m²·K), then HC = ~~20 Btu/(ft²·°F)~~ 409 kJ/(m²·K) shall be used.

- 122 **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}”.
- 125 **C6.10.1 U-Factor fir Below-Grade Walls.** Change Equation C-20 to read as follows:

$$U\text{-factor} = 1 / ((1 / C\text{-factor}) + 0.85 + R_{\text{soil}})$$
- 126 **Normative Appendix D, Climatic Data.** Following the second sentence at the top of page 126 add the following:
 “The following definition applies: N.A. = Not Available.”
- 149 **Table D-2 Canadian Climatic Data.** The SI edition of Standard 90.1 incorrectly included I-P climatic data in Table D-2. See Table D-2 for changes (attached). Table changed to reflect SI units.
(Note: Additions are shown in underline and deletions are shown in strikethrough.)

Table D-2
Canadian Climatic Data

Province City	Latitude	Longitude	Elev. (m)	HDD18	CDD10	Heating Design Temperature	Cooling Design Temperature	
						99.6%	Dry- Bulb	Wet- Bulb
						99.6%	1.0%	1.0%
Alberta (AB)								
Calgary International A	51.12 N	114.02 W	3533 1076	9,885 5,492	4,167 648	-22 -30	80 27	59 15
Edmonton International A	53.30 N	113.58 W	2345 714	11,023 6,124	4,069 594	-28.4 -33	78 26	63 17
Grande Prairie A	55.18 N	118.88 W	2185 665	11,240 6,244	4,034 573	-32 -36	78 26	60 16
Lethbridge A	49.63 N	112.80 W	3047 928	8,783 4,879	4,730 961	-22 -30	84 29	64 16