

**ERRATA SHEET FOR 2013 SUPPLEMENT TO
ANSI/ASHRAE/USGBC/IES STANDARD 189.1-2011
Standard for the Design of High-Performance Green Buildings
Except Low-Rise Residential Buildings**

March 23, 2015

The corrections listed in this errata sheet apply to ALL printings of the 2013 Supplement to ANSI/ASHRAE/USGBC/IES Standard 189.1-2011. The first printing of the supplement is identified on the outside back cover as “3/13” and the second printing as “10/13 *Errata noted in the list dated 9/5/2013 have been corrected.*” The shaded items have been added since the previously published errata sheet dated September 5, 2013 was distributed. Items marked with an asterisk “*” apply only to the first printing, they have already been incorporated into the second printing.

NOTICE: ASHRAE now has a list server for Standing Standard Project Committee 189.1 (SSPC 189.1). 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 is available. To sign up for the list server please visit **Project Committee List Servers for Standard** on the Technology / Standards section of the ASHRAE website at <http://www.ashrae.org/standards-research--technology/standards--guidelines/standards-activities/project-committee-list-servers>.

Page(s) Erratum

Inside Cover* **ASHRAE Standing Standards Project Committee 189.1.** In the list of SSPC 189.1 members for Addenda ab and ac, page 1, add the following members and their affiliation:
(Note: Additions are shown in underline.)

Name	Affiliation
<u>Klas C. Haglid</u>	<u>Haglid Engineering & Associates, Inc.</u>
<u>Jeff Boldt</u>	<u>KJWW Engineering</u>
<u>Frank Gallo</u>	<u>Forest City Enterprises</u>
<u>Tom Meyer</u>	<u>National Environmental Balancing Bureau</u>
<u>Kent Sovocool</u>	<u>Southern Nevada Water Authority</u>
<u>Wes Sullens</u>	<u>StopWaste.Org of Alameda County</u>
<u>Len Swatkowski</u>	<u>Plumbing Manufacturers International</u>
<u>Dan Whittet</u>	<u>AHA Consulting Engineers</u>

Inside Cover* **ASHRAE Standing Standards Project Committee 189.1.** In the list of SSPC 189.1 members for ALL addenda, pages 1-3, change the following member’s affiliation.
(Note: Additions are shown in underline and deletions are shown in ~~strikethrough~~.)

Name	Affiliation
John Pulley	HOK <u>Buro Happold</u>
Teresa Rainey	Skidmore Owing Merrill <u>LLP</u>
Dimitri Contoyannis	IES <u>Architectural Energy Corporation</u>
Martha VanGeem	CTL Group <u>Martha VanGeem</u>

Inside Cover* **ASHRAE Standing Standards Project Committee 189.1.** In the list of SSPC 189.1 members for Addenda h, j, k, l, q, s, and y, page 3, change the following member's affiliation.
(Note: Additions are shown in underline and deletions are shown in ~~strikethrough~~.)

Name	Affiliation
Senthil K. Arunachalam	<u>Btu Engineers, LLC</u> Senthil Kumar Arunachalam

8* **Addendum h to Standard 189.1-2011 - 10.3.1.2.5 Building Envelope Airtightness.** Building envelope airtightness shall comply with one of the following:
(Note: Additions are shown in underline and deletions are shown in ~~strikethrough~~.)

1. Whole building pressurization testing shall be conducted in accordance with ASTM E779, CAN/CGSB-149.10-M86, CAN/CGSB-149.15-96 or equivalent. The measured air leakage rate of the *building envelope* shall not exceed 0.25 cfm/ft² (~~2.0~~ 1.25 L/s·m²) under a pressure differential of 0.3 in. wc (75 Pa), with this air leakage rate normalized by the sum of the above- and below-grade *building envelope* areas of the *conditioned* and *semiheated space*

17* **Addendum s to Standard 189.1-2011.** In Section 3 of Addendum s the word “rate” was deleted from the definition for *airflow rate*, *minimum outdoor* however that term was not deleted from the definition of *minimum outdoor airflow rate* also in Section 3. This erratum makes the terms consistent. The following changes should be added to the changes shown in Addendum s:

Modify Section 3 as follows:

minimum outdoor airflow rate: see airflow ~~rate~~, *minimum outdoor*

Modify Section F1.e as follows:

F1. BUILDING CONCENTRATIONS

Building concentrations shall be estimated based on the following parameters and criteria:

- Laboratory-measured VOC emission factors and actual surface area of all materials as described in (b) below.
- At minimum, those materials listed in Section 8.5.2 (a) through (g) to be installed shall be modeled.
- The actual building parameters for volume, average weekly minimum ventilation rate, and ventilated volume fraction for the building being modeled shall be used.
- Standard building scenarios or modeling from similar buildings shall not be allowed.
- Average weekly minimum air change rates shall be calculated based on the *minimum outdoor airflow* ~~s rates~~ and hours of operation for the specific building being modeled.

18-19* **Addendum s to Standard 189.1-2011.** In the list of renumbered sections on page 18, bottom of the first column, add the following change:

10.3.2.1.4.76

In the revisions to Section 11 Normative References on page 19, for Green Seal, replace “10.3.2.1.4.~~67~~” with “10.3.2.1.4.65”.

24* **Addendum y to Standard 189.1-2011.** Change Table D-3.1 to Table D1.1 and delete the table and

replace with the one shown below. The remainder of Addendum y is correct.

TABLE D-3.1

No.	Proposed Building Performance	Baseline Building Performance
10.	HVAC Systems	
	<p>The HVAC system type and all related performance parameters in the proposed design, such as equipment capacities and efficiencies, shall be determined as follows:</p> <ul style="list-style-type: none"> a. Where a complete HVAC system exists, the model shall reflect the actual system type using actual component capacities and efficiencies. b. Where an HVAC system has been designed, the HVAC model shall be consistent with design documents. Mechanical equipment efficiencies shall be adjusted from actual design conditions to the standard rating conditions specified in 7.4.3.1 and Normative Appendix C if required by the simulation model. c. Where no heating system exists or no heating system has been specified, the heating system classification shall be assumed to be electric, and the system characteristics shall be identical to the system modeled in the baseline building design. Where no cooling system exists or no cooling system has been specified, the cooling system shall be identical to the system modeled in the baseline building design. 	<p>The HVAC system(s) in the baseline building design shall be of the type and description specified in D3.1.1, shall comply with the general HVAC system requirements specified in D3.1.2, shall comply with any system-specific requirements in D3.1.3 that are applicable to the baseline HVAC system type(s), and shall comply with 7.3 and 7.4.3. <u>The HVAC equipment efficiencies shall comply with Section 7.4.3.1a.</u></p>
11.	Service Hot Water Systems	
		<p>The service hot water system in the baseline building design shall use the same energy source as the corresponding system in the proposed design and shall conform with the following conditions:</p> <ul style="list-style-type: none"> a. Where a complete service hot water system exists, the baseline building design shall reflect the actual system type using actual component capacities and efficiencies. b. Where a new service hot water system has been specified, the system shall be sized according to the provisions of Section 7.4.1 of ANSI/ASHRAE/IES Standard 90.1 and the equipment shall match the minimum efficiency requirements in 7.4.4.1(a), and the heat recovery requirements in 7.4.7.2 and 7.4.7.3. Where the energy source is electricity, the heating method shall be electrical resistance.
		c. ...

Delete this table in Addendum y:

**TABLE D1.1 Modifications and Additions to table G3.1 of Appendix G
in ANSI/ASHRAE/IES Standard 90.1**

No.	Proposed Building Performance	Baseline Building Performance
10.	<p>HVAC Systems</p> <p>No modifications</p>	<p>In addition to the requirements in Table G3.1 (10), the <i>baseline building design</i> shall comply with all requirements in Section 7.4.3.1a.</p>
11.	<p>Service Hot Water Systems</p> <p>In addition to the requirements in Table G3.1 (11), service hot-water usage is allowed to be lower in the <i>proposed design</i> than in the <i>baseline building design</i> if service hot-water use can be demonstrated to be less than that resulting from compliance with Sections 6.3.2, 6.4.2, and 6.4.3.</p>	<ol style="list-style-type: none"> 1. In addition to the requirements in Table G3.1 (11.b) and (11.c), service hot-water systems shall meet the requirements of Sections 7.4.4.1(a), 7.4.7.2, and 7.4.7.3. 2. In addition to the requirements in Table G3.1 (11.f), the <i>baseline building design</i> shall meet the requirements of Section 7.4.7.2. If a condenser heat recovery system meeting the requirements described in Section 7.4.7.2 cannot be modeled, the requirement for including such a system in the actual building shall be met as a prescriptive requirement and no heat-recovery system shall be included in the <i>proposed design</i> or <i>baseline building design</i>. 3. In addition to the requirements in Table G3.1 (11.i), the <i>baseline building design</i> shall meet the requirements of Sections 6.3.2 and 6.4.3.

Add this table to Addendum y:

24 Addendum y to 189.1-2011. Revise Table D-1.1 in Addendum y as shown below.
(Note: Additions are shown in underline and deletions are shown in ~~strikethrough~~.)

11. Service Hot Water Systems

In addition to the requirements in Table G3.1 (11), service hot-water usage is allowed to be lower in the *proposed design* than in the *baseline building design* if service hot-water use can be demonstrated to be less than that resulting from compliance with Sections 6.3.2, 6.4.2, and 6.4.3.

- ~~1. In addition to the requirements in Table G3.1 (11.b) and (11.c), service hot-water systems shall meet the requirements of Sections 7.4.4.1(a), 7.4.7.2, and 7.4.7.3.~~
- ~~2. In addition to the requirements in Table G3.1 (11.f), the *baseline building design* shall meet the requirements of Section 7.4.7.2. If a condenser heat recovery system meeting the requirements described in Section 7.4.7.2 cannot be modeled, the requirement for including such a system in the actual building shall be met as a prescriptive requirement and no heat-recovery system shall be included in the *proposed design* or *baseline building design*.~~
- ~~3. In addition to the requirements in Table G3.1 (11.i), the *baseline building design* shall meet the requirements of Sections 6.3.2 and 6.4.3.~~
1. In addition to the requirements in Table G3.1 (11.b) and (11.c), service hot-water systems shall meet the requirements of Sections 7.4.4.1, 7.4.7.2, and 7.4.7.3.
2. In addition to the requirements in Table G3.1 (11.f), the *baseline building design* shall meet the requirements of Section 7.4.7.2. If a condenser heat recovery system meeting the requirements described in Section 7.4.7.2 cannot be modeled, the requirement for including such a system in the actual building shall be met as a prescriptive requirement and no heat-recovery system shall be included in the *proposed design* or *baseline building design*.
3. In addition to the requirements in Table G3.1 (11.i), the *baseline building design* shall meet the requirements of Sections 6.3.2 and 6.4.3.