

Public Review Draft

Proposed Addendum ac to Standard 189.1-2017

Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings

Second Public Review Draft (October 2019)
(Draft Shows Proposed Independent Substantive Changes to Previous Public Review Draft)

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Foreword

The proposed ISC allows for the building project to include thermal or electrical energy storage capability that could be employed as a demand response tool. This is done by providing an additional exception to Section 7.3.4. The proposed exception includes a minimum capacity level for the energy storage system, with the minimum energy storage capacity required being roughly equal for thermal and electrical energy.

[Note to Reviewers: This addendum makes proposed independent substantive changes to the previous public review draft. These changes are indicated in the text by underlining (for additions) and ~~strikethrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the previous public review draft are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed changes.]

Addendum ac to 189.1-2017

Revise Section 7.3.4 as follows (sections not shown are not changed):

7.3.4 Where a demand response (DR) program is available to the *building project*, the building controls shall be designed with automated DR infrastructure capable of receiving DR requests from the utility, electrical system operator, or third-party DR program provider and automatically implementing load adjustments to the HVAC and lighting systems.

Exceptions to Section 7.3.4:

1. Buildings with a gross conditioned floor area less than 5000 ft² (500 m²).
2. Buildings that employ a thermal or electrical energy storage system with a total storage capacity that complies with one of the following:
 - a. For thermal energy storage, the system shall be capable of displacing the HVAC design cooling coil capacity for not less than the equivalent of three hours
 - b. For electrical energy storage, the capacity shall be not less than the requirements of the following formula:

BSR/ASHRAE/ICC/USGBC/IES Addendum ac to ANSI/ASHRAE/ICC/USGBC/IES Standard 189.1-2017, *Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings* Second Public Review Draft - Independent Substantive Changes.

$$\frac{\text{Minimum kWh capacity} = \text{Gross Conditioned Floor Area (ft}^2\text{)} * 5.0 \text{ watts / ft}^2 * 1.0 \text{ hour} * (1 \text{ kW/ 1000 watts})}{}$$

7.3.4.1 HVAC Systems Zone Set Points ...

7.3.4.2 Variable-Speed Equipment ...

7.3.4.3 Lighting ...

Original Addendum ac (first public review) shown below for reference only

Addendum ac to 189.1-2017

Add new definition as follows to Section 3.2:

Gross conditioned floor area: See ANSI/ASHRAE/IES Standard 90.1.

Revise Section 7.3.4 as follows (sections not shown are not changed):

7.3.4 ~~Where a demand response (DR) program is available to the building project, building projects shall contain automatic control systems that have the capability to reduce building equipment loads to lower electric peak demand of the building. The~~ building controls shall be designed with automated demand-response (DR) infrastructure capable of receiving DR requests from the utility, electrical system operator, or third-party DR program provider and automatically implementing load adjustments to the HVAC and lighting systems.

Exception to Section 7.3.4: Buildings with a gross conditioned floor area less than 5000 ft² (500 m²).

7.3.4.1 HVAC Systems Zone Set Points ...

7.3.4.2 Variable-Speed Equipment ...

7.3.4.3 Lighting ...