

Public Review Draft

Proposed Addendum x to Standard 189.1-2017

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

First Public Review (March 2019)
(Draft Shows Proposed Changes to Current Standard)

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Foreword

This new section adds requirements for traction elevators. It is limited to elevators with a rise over 75 ft, so that it does not include shorter elevators where energy savings may not be substantial enough to justify the requirements. The requirements are also based on elevator rise height rather than building height so that they do not apply to shorter elevators that may be present in taller buildings. The proposal increases efficiency by requiring more efficient drive motors and regenerative braking.

The first requirement places an efficiency requirement on drive motors. These motors will need to meet a minimum efficiency standard. This will save energy on all elevator calls that utilize the motor.

The second is a requirement for the inclusion of regenerative drives on the elevator. Elevators are counter-weighted so that the elevator motor never has to move the whole weight of the elevator and its passengers. Depending on the load of the elevator, sometimes the motor will be moving the load but sometimes the elevator will be braking against the counter-weight or the elevator load. Regenerative drives capture the potential energy from elevator braking and convert it into electrical energy that can be fed back into the building electrical system of the building and then used in the building.

Both of these technologies are common and widely used, so these requirements will ensure best practices in buildings that follow Standard 189.1.

Note: In this addendum, changes to the current standard are indicated in the text by underlining (for additions) and ~~striketrough~~ (for deletions) unless the instructions specifically mention some other means of indicating the changes. Only these changes 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 substantive changes.

Addendum x to 189.1-2017

Add a new Section 7.4.7.6 as follows:

7.4.7.6 Elevator Power Conversion System. Traction elevators with a rise of 75 feet (23 m) or more in new buildings shall have a power conversion system that includes all of the following:

1. A drive motor with a minimum Class IE2 efficiency rating, as defined by IEC EN 60034-30.
2. A regenerative drive that recovers potential energy released during motion, converts it to electrical energy and supplies it to the building electrical system.

Add a new normative reference as follows:

International Electrotechnical Commission
IEC Regional Centre for North America (IEC-ReCNA)
446 Main Street, 16th Floor
Worcester, MA 01608
U.S.A.
1-508-755-5663; www.iec.ch

IEC EN 60034-30

Rotating electrical machines - Part 30-1:
Efficiency classes of line operated AC motors (IE code)

7.4.7.6