

Public Review Draft

Proposed Addendum ah to Standard 189.1-2023

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

First Public Review (March 2026)
(Draft Shows Proposed Changes to Current Standard)

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(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

Foreword

This addendum amends Section 9.5 with the removal of the Reduced Impact Materials section and the introduction of two new compliance pathways: Lower Global Warming Potential (GWP) Product Procurement and Existing Building Reuse. The existing Life-Cycle Assessment (LCA) remains unchanged. Projects must choose to comply with one of these three options.

The Lower GWP Product Procurement section uses cost as a simple and enforceable means of identifying the more significant contributors of GWP in a project. Projects comply by providing an Environmental Product Declaration (EPD) or LCA for select products that demonstrate a GWP that is less than the industry average GWP for the same product. Many of the prescriptive criteria captured in the now-removed Reduced Impact Materials section are captured by the EPDs and LCA data that would be submitted under this new section. Additionally, this new section aligns with recent updates to Section 9.4 through Addendum u, which simplified the requirements for submitting EPDs and created two tiers of requirements based on the size of the building project.

The purpose of the new Existing Building Reuse section is to encourage building reuse where possible due to the significant environmental benefits associated with avoiding or minimizing new construction and the new product procurement that comes with it. The intent is to provide a simple means of calculating and demonstrating compliance: projects that retain at least 50 percent of an existing building on site, by default, adhere with Section 9.5.

These three compliance options under the new structure of Section 9.5 mirror the embodied carbon pathways in the state of California's statewide mandatory green building code, CALGreen, the latest version of which is now in effect.

[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and ~~striketrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard 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 ah to 189.1-2023

Modify Section 9.5 as follows:

9.5 Material Selection-Material Environmental Impact Reduction. ~~The *building project* shall comply with either Section 9.5.1 or 9.5.2. *Building projects* that include new construction or additions, and initial interior construction, shall comply with Section 9.5.1 or 9.5.2. *Building projects* that consist only of alterations to existing buildings shall comply with Section 9.5.1, 9.5.2, or 9.5.3.~~

Exception to 9.5: *Building projects* or building alteration areas with a total area of less than 10,000 ft² (1,000m²).

9.5.1 Lower GWP Product Procurement. *Building products* with an aggregate cost of not less than 20% of the total estimated cost of *building products* permanently installed in the *building project* shall have a cradle-to-gate GWP less than the industry-average GWP for the same product. The industry-average GWP for the *building product* shall be based on a currently valid and publicly available industry-average EPD or LCA developed for, or applicable to, the geographic region in which the *building project* is constructed. All EPDs, LCAs, and PCRs referenced in this section shall be developed for, or applicable to, the geographic region in which the *building project* is constructed.

A value of 45% of the estimated total construction cost or permit valuation shall be permitted to be used in lieu of the total estimated cost of all *building products* permanently installed in the *building project* or building alteration area.

9.5.1.1 Building Product Assemblies. *Building product assembly* compliance shall be documented in accordance with one of the following:

a. the *building product assembly's* publicly available industry-average EPD or LCA applicable to the geographic region in which the *building project* is constructed.

b. publicly available EPDs or LCAs for individual product components comprising 80% or more of the *building product assembly's* total cost or weight. The sum of the individual product component EPDs and LCAs shall be compared against the sum of industry-average EPDs or LCAs for the same individual product components of the *building product assembly*.

9.5.1.2 Salvaged Materials. *Salvaged materials* shall be deemed to have a cradle-to-gate GWP less than that of the industry-average GWP. *Salvaged materials* shall not require an EPD or LCA. *Salvaged material* cost shall be determined based on the actual cost of the *salvaged material* or the cost of a comparable alternative.

~~**9.5.1 Reduced Impact Materials.** The *building project* shall comply with any two of the following: Sections 9.5.1.1, 9.5.1.2, 9.5.1.3, or 9.5.1.4. Calculations shall only include materials *permanently installed* in the project. A value of 45% of the total construction cost shall be permitted to be used in lieu of the actual total cost of materials.~~

9.5.1.1 Recycled Content and Salvaged Material Content. The sum of the *recycled content* and the *salvaged material* content shall constitute a minimum of 10%, based on cost, of the total materials in the *building project*.

9.5.1.1.1 Recycled Content. The *recycled content* of a material shall be the *postconsumer recycled content* plus one half of the *preconsumer recycled content*, determined by weight (mass). The recycled fraction of the material in a product or an assembly shall then be multiplied by the cost of the product or assembly to determine its contribution to the 10% requirement.

The annual average industry values, by country of production, for the *recycled content* of steel products manufactured in basic oxygen furnaces and electric arc furnaces shall be permitted to be used as the *recycled content* of the steel. For the purpose of calculating the *recycled content* contribution of concrete, the constituent materials in concrete (**Informative Note:** e.g., the cementitious materials, aggregates, and water) shall be permitted to be treated as separate components and calculated separately.

~~**9.5.1.1.2 Salvaged Material Content.** The *salvaged material* content shall be determined based on the actual cost of the *salvaged material* or the cost of a comparable alternative component material.~~

9.5.1.2 Regional Materials. A minimum of 15% of building materials or products used, based on cost, shall be

~~regionally extracted/harvested/recovered or manufactured within a radius of 500 mi (800 km) of the project site. If only a fraction of a product or material is extracted/harvested/recovered or manufactured locally, then only that percentage (by weight) shall contribute to the regional value.~~

~~**Exception to 9.5.1.2:** For building materials or products shipped in part by rail or water, the total distance to the project shall be determined by weighted average, whereby that portion of the distance shipped by rail or water shall be multiplied by 0.25 and added to that portion not shipped by rail or water, provided that the total does not exceed 500 mi (800 km).~~

~~**9.5.1.3 Biobased Products.** A minimum of 5% of building materials used, based on cost, shall be *biobased products*. *Biobased products* shall~~

- ~~a. Comply with the minimum biobased contents of the USDA's BioPreferred Program;~~
- ~~b. Contain the "USDA Certified *Biobased Product*" label; or~~
- ~~c. Be composed of solid wood, engineered wood, bamboo, wool, cotton, cork, agricultural fibers, or other biobased materials with at least 50% biobased content.~~

~~**9.5.1.3.1 Wood Building Components.** Wood building components, including but not limited to structural framing, sheathing, flooring, subflooring, wood window sash and frames, doors, and architectural millwork, used to comply with this requirement shall contain not less than 60% certified wood content tracked through a chain of custody process, either by physical separation or percentage-based approaches, or wood that qualifies as a *salvaged material*. Certified wood content documentation shall be provided by sources certified through a forest certification system with principles, criteria, and standards developed using ISO/IEC Guide 59 or the WTO Technical Barriers to Trade. Wood building components from a *vendor* shall be permitted to comply when the annual average amount of certified wood products purchased by the *vendor*, for which they have chain of custody *verification* not older than two years, is 60% or greater of their total annual wood products purchased.~~

~~**9.5.1.4 Third Party Multi-Attribute Certification.** A material specific assessment shall be submitted to the *AHJ* for a minimum of five different products installed in the *building project* at the time of issuance of certificate of occupancy in accordance with one or more of the following standards, where applicable. The assessment shall be certified as meeting the minimum performance level specified in each standard.~~

- ~~a. ANSI/BIFMA e3~~
- ~~b. NSF/ANSI 140~~
- ~~c. NSF/ANSI 332~~
- ~~d. NSF/ANSI 336~~
- ~~e. NSF/ANSI 342~~
- ~~f. NSF/ANSI 347~~
- ~~g. NSC 373~~
- ~~h. ANSI A138.1~~
- ~~i. UL 102~~

9.5.2 Life-Cycle Assessment (LCA). *[Unchanged]*.

9.5.3 Existing Building Reuse. An existing building shall retain not less than 50% of the existing building area, where the existing building area shall be the sum of its *gross floor area*, *exterior gross wall area*, and *gross roof area*.

This ends the changes available for comment on Addendum ah. The information presented below is for informational purposes only and not open for public comment.

The definitions referenced in 9.5.3 Existing Building Reuse have recently been updated per ASHRAE 189.1 Addendum w, provided for reference below:

floor area, gross: the sum of the *floor* areas of the *spaces* within the building, including basements, mezzanine and intermediate-floored tiers, and penthouses with a headroom height of 7.5 ft or greater. It is measured from the exterior faces of *walls* or from the centerline of *walls* separating buildings, but excluding covered walkways, open roofed-over areas, porches and similar *spaces*, pipe trenches, exterior terraces or steps, chimneys, *roof* overhangs, and similar features.

wall area, gross: the area of the *wall* measured on the exterior face from the top of the *floor* to the bottom of the *roof*.

roof area, gross: the area of the *roof* measured from the exterior faces of *walls* or from the centerline of party walls. (See *roof* and *wall*.)