

*2.2-2.5.1.3 Reduced-impact materials for building assemblies and interior fit-outs

*2.2-2.5.1.4 Building service life plan

2.2-2.6 Emissions, Effluents and Pollution Control

This section specifies requirements for emissions, effluents, and pollution control, including refrigerants, boilers, emergency backup generators, effluent flows, and waste streams.

2.2-2.6.1 Emissions

2.2-2.6.1.1 Refrigerants

- (1) Use of CFC-based refrigerants shall not be permitted in HVAC&R systems except in small HVAC units (defined as containing less than 0.5 lb [0.23 kg] of refrigerant).
- (2) Uses of CFC-based refrigerants shall be permitted in equipment such as standard refrigerators, small water coolers, and other cooling equipment that contains less than 0.5 lb (0.23 kg) of refrigerant.

*2.2-2.6.1.2 Reduction of greenhouse gas. Strategies to

UL 2768: *Standard for Sustainability for Architectural Surface Coatings*

—Use third-party certification such as sustainable forestry certifications:

American Tree Farm System®, ATFS Standards for Sustainability for Forest Certification

CAN/CSA- Z809: *Sustainable Forest Management: Requirements and Guidance*

Forest Stewardship Council Standard FSC-STD-01-001 (V4-0): *FSC Principles and Criteria for Forest Stewardship Programme for the Endorsement of Forest Certification national standards*

Sustainable Forestry Initiative® 2010–2014 Standard

—Use a product declaration or life cycle analysis (LCA) approach:

- Manufacturer-declared product life cycle assessment based on ISO Standards 14040 and 14044
- Industry-wide Type III Environmental Product Declaration (EPD®) based on recognized product category rules and conformance to ISO standards 14040, 14044, 14025, and 21930 and BS EN 15804, which include a cradle-to-gate scope
- Product-specific Type III EPD based on recognized product category rules and conformance to ISO standards 14040, 14044, 14025, and 21930 and BS EN 15804, which include a cradle-to-gate scope

A2.2-2.5.1.4 Building service life plan. A building service life plan should be created that estimates the service life of the building's structural system, building systems, building envelope, interior fit-out, and hardscape materials. See appendix section A2.2-2.5.1.3 (Reduced-impact materials) for additional information.

A2.2-2.6.1.2 Reduction of greenhouse gas. New and renovated facilities should be designed to comply with the carbon reduction goals outlined in the Architecture 2030 Challenge (www.architecture2030.org). Strategies that reduced energy demand also contribute to the reduction of greenhouse gas emissions. The use of renewable energy sources and the purchase of green energy reduce carbon dioxide emissions as well.

APPENDIX

A2.2-2.5.1.3 Reduced-impact materials

a. Evaluation of building assemblies and the building envelope should be part of the project design:

- Reuse portions of an existing building, if possible and applicable.
- Use life cycle assessment tools to evaluate comparable building assemblies during the conceptual design phase, such as:
 - Athena® Impact Estimator for Buildings (www.athenasmi.org)
 - CMLCA (www.cmlca.eu)
 - GaBi (www.gabi-software.com)
 - SimaPro (www.simapro.co.uk)

b. A life cycle assessment should be performed in accordance with ISO standards 14040 and 14044 for a minimum of two interior fit-out alternatives that conform to the functional requirements of the project. Each interior fit-out alternative should include interior partitions, finishes, and furnishings.

c. The material content of products used in a building should be evaluated based on performance criteria and building service life.

—Use a multiple-attribute approach by basing product selection on standards and certifications such as those listed here:

NSF/ANSI 140: *Sustainability Assessment for Carpet*

NSF/ANSI 332: *Sustainability Assessment for Resilient Floor Coverings*

NSF/ANSI 336: *Sustainability Assessment for Commercial Furnishings Fabric*

NSF/ANSI 342: *Sustainability Assessment for Wallcovering Products*

ANSI/BIFMA e3: *Furniture Sustainability Standard*

NCS 373: *Sustainability Assessment for Natural Dimension Stone*

NSF/ANSI 347: *Sustainability Assessment for Single Ply Roofing Membranes*

UL 100: *Standard for Sustainability for Gypsum Boards and Panels*

UL 102: *Standard for Sustainability for Door Leafs*

UL 2762: *Adhesives*