



ANSI/ASHRAE/IES Standard Scope and Application

March 2017– PNNL-SA-124553

Section 2 – Scope

2.1 – 2.4

- Applies to:
 - New *buildings* and their *systems*
 - New portions of *buildings* and their *systems*
 - New *systems* and *equipment* in *existing buildings*, and
 - New *equipment* or *building systems* specifically identified in the standard that are part of industrial or manufacturing processes
 - Criteria for determining compliance with requirements
- Does not apply to:
 - Single-family houses, low-rise multi-family ≤ 3 stories above *grade*, manufactured houses (mobile or modular)
 - *Buildings* that use neither electricity nor *fossil* fuel
- Certain other buildings or elements may be exempt
- Does not circumvent any safety, health, or environmental requirements

Building System

Envelope

HVAC

SWH

Power

Lighting

Other

Mandatory Provisions
(required for all compliance options)

Compliance Options

Prescriptive Option

Trade Off Option

Energy Cost Budget

Performance Rating Method

Energy Code Compliance

New Buildings

- New *buildings* shall comply with the standard

Additions to Existing Buildings

- An extension or increase in the *floor area* or height of a *building* outside of the *existing building envelope*

Changes in Space Conditioning

- Unconditioned space or semi-heated space to conditioned space
- Conditioned space shall be brought into compliance with all the applicable requirements of this standard

Alterations of Existing Buildings

- Compliance for alterations designated by each section

Replacement of Portions of Existing Buildings

- Portions of a *building envelope*, heating, ventilating, air-conditioning, *service water heating*, power, lighting, and other *systems and equipment* that are being replaced shall be considered as *alterations* of *existing buildings*

- Additions to the building must comply with opaque envelope and glazing requirements for new construction

- Alterations to the building envelope must comply with opaque envelope and glazing requirements
- Exceptions:
 - Storm windows
 - Replacing existing glazing in existing sash and frame – meet existing u-factor and SHGC
 - Alterations to roof, wall and floor cavities that are insulated to R-3.0/in
 - Roof recovering
 - Removal and replacement of roof membrane if roof is insulated integral or below roof deck
 - Vestibule not required if replacing existing doors and no vestibule currently installed
 - Replacement of 25% of existing fenestration with same or better fenestration

- Additions to the building must comply with HVAC requirements for new construction

New HVAC equipment as a direct replacement of existing HVAC equipment shall comply with the following sections as applicable for the equipment being replaced:

- 6.3, “Simplified Approach Option for HVAC Systems”
- 6.4.1, “Equipment Efficiencies, Verification, and Labeling Requirements”
- 6.4.3.1, “Zone Thermostatic Controls”
- 6.4.3.2, “Set-Point Overlap Restrictions”
- 6.4.3.3, “Off-Hour Controls” except for Section 6.4.3.3.4, “Zone Isolation”
- 6.4.3.4, “Ventilation System Controls”
- 6.4.3.7, “Freeze Protection and Snow/Ice Melting Systems”
- 6.4.3.8, “Ventilation Controls for High-Occupancy Areas” only for single-zone equipment
- 6.4.3.9, “Heated or Cooled Vestibules”

New HVAC equipment as a direct replacement of existing HVAC equipment shall comply with the following sections as applicable for the equipment being replaced:

- 6.4.5, “*Walk-In Coolers and Walk-In Freezers*”
- 6.5.1.1, “*Air Economizers*” for units located outdoors
- 6.5.1.3, “*Integrated Economizer Control*”
- 6.5.1.4, “*Economizer Heating System Impact*”
- 6.5.3.1.3, “*Fan Efficiency*”
- 6.5.3.2.1, “*Supply Fan Airflow Control*”
- 6.5.3.6, “*Fractional Horsepower Fan Motors*”
- 6.5.4.1, “*Boiler Turndown*”
- 6.5.4.3, “*Chiller and Boiler Isolation*”
- 6.5.5.2, “*Fan Speed Control*”

- Replacement water heating must comply with the following:
 - Perform load calculations to size the water heater
 - Select a water heater that meets the minimum water heater requirements from ASHRAE 90.1-2016
- New and replacement piping must be insulated if accessible
 - Recirculating system piping, including the supply and return piping of a circulating tank type water heater.
 - The first 8 ft of outlet piping for a constant-temperature nonrecirculating storage system.
 - The first 8 ft of branch piping connecting to recirculated, heat-traced, or impedance heated piping.
 - The inlet piping between the storage tank and a heat trap in a nonrecirculating storage system.
 - Piping that is externally heated (such as heat trace or impedance heating).

Interior Lighting Additions

- Comply with lighting requirements as they apply to new buildings
 - Lighting power density
 - Lighting controls

Lighting alteration requirements

- Meet Whole Building or Space-by-Space LPD requirements
- Lighting controls must meet the following if applicable:
 - a. *Local control*
 - b. *Restricted to manual ON*
 - c. *Restricted to partial automatic ON*
 - d. *Bilevel lighting control*
 - e. *Automatic full OFF*
 - f. *Automatic partial OFF (full OFF complies)*
 - g. *Automatic partial OFF (full OFF complies)*
 - h. *Automatic full OFF*
 - i. *Scheduled shutoff*

Lighting systems are exempt from the alteration requirements under the following conditions:

- *Alterations* that involve 20% or less of the connected lighting load in a *space* or area need not comply with these requirements, provided that such *alterations* do not increase the installed lighting power.
- Lighting *alterations* that only involve replacement of *lamps* plus *ballasts/drivers* or only involve one-for-one *luminaire* replacement need only comply with *LPD* requirement and Section 9.4.1.1(h) or 9.4.1.1(i).
- Routine maintenance or *repair* situations.

Exterior lighting alteration requirements

- Meet exterior LPD requirements
 - Applicable exterior lighting control requirements