

### 2.5-8.7.2 Vibration Control and Isolation

Vibration levels in the building shall not exceed applicable guidelines and limits outlined in this section.

#### 2.5-8.7.2.1 Mechanical, electrical, and plumbing equipment vibration

- (1) All fixed building equipment that rotates or vibrates shall be considered for vibration isolation.
- (2) Bases and supports shall be provided as needed to facilitate attachment of vibration isolators to equipment items. The types of isolators and isolator static deflections shall be as recommended in the *ASHRAE Handbook—HVAC Applications*.

#### 2.5-8.7.2.2 Structural vibration

- (1) Footfall vibration in the building structure shall be evaluated using American Institute of Steel Construction (AISC) Design Guide 11: *Floor Vibrations Due to Human Activity* and/or similar guidelines.
- (2) The structural floor shall be designed to avoid footfall vibration levels that exceed the peak vibration velocities in Table 2.5-8 (Maximum Limits on Floor Vibration Caused by Footfalls in Residential Health, Care, and Support Facilities).
- (3) If medical or laboratory instrumentation is used in a residential health, care, or support setting, more stringent vibration criteria shall be considered.

#### 2.5-8.7.2.3 Structure-borne sound

- (1) Structure-borne transmitted sound shall not exceed the limits for airborne sound presented in Section 2.5-8.4 (Design Criteria for Room Noise Levels).
- (2) Where necessary, vibration isolators shall be used to control potential sources of structure-borne sound.

**2.5-8.7.2.4 Ground-borne vibration.** Exterior sources of ground vibration, such as road and rail traffic, shall be considered in the site selection and design of a facility. See Chapter 1.3 (Site Selection) for additional requirements.

## 2.5-9 Elevator Systems

### 2.5-9.1 General

See common element and facility chapters in Parts 3 through 5 for requirements.

### 2.5-9.2 Dimensions and Clearances

See common element and specific facility chapters in Parts 3 through 5 for requirements.

### 2.5-9.3 Leveling Device

Elevators shall be equipped with an automatic two-way leveling device with an accuracy of  $\pm 1/4$  inch ( $\pm 6.35$  millimeters).

### 2.5-9.4 Installation and Testing

Installation and testing of elevators shall comply with ANSI/ASME A17.1: *Safety Code for Elevators and Escalators* for new construction and ANSI/ASME 17.3 for existing buildings. (See ASCE/SEI 7: *Minimum Design Loads for Buildings and Other Structures* for seismic design and control system requirements for elevators.)

### 2.5-9.5 Handrails

See common elements and specific facility chapters in Parts 3 through 5 for requirements.

**Table 2.5-1**

### Hot Water Use—Residential Health, Care, and Support Facilities

	Resident Care Areas	Food Service Facilities	Laundry Facilities
Liters per hour per bed <sup>1</sup>	11.9	7.2	7.6
Gallons per hour per bed <sup>1</sup>	3	2	2
Temperature (°C)	21 – <43 <sup>2</sup>	60 <sup>3</sup>	60 <sup>4</sup>
Temperature (°F)	70 – <120 <sup>2</sup>	140 (min.) <sup>3</sup>	140 (min.) <sup>4</sup>

<sup>1</sup>Quantities indicated for design demand of hot water are for general reference minimums and shall not substitute for accepted engineering design procedures using actual number and types of fixtures to be installed. Design will also be affected by temperatures of cold water used for mixing, length of run and insulation relative to heat loss, etc. As an example, total quantity of hot water needed will be less when temperature available at the outlet is very nearly that of the source tank and the cold water used for tempering is relatively warm.

<sup>2</sup>The range represents the minimum and maximum allowable temperatures. Where sinks are used primarily for hand-washing and are served by a single pipe supplying tempered water, the tempered water shall not exceed 80° F (21°C).

<sup>3</sup>Provisions shall be made to provide 180°F (82°C) rinse water at warewasher (may be by separate booster) unless a chemical rinse is provided.

<sup>4</sup>Provisions shall be made to provide 160°F (71°C) hot water at the laundry equipment when needed. (This may be by steam jet or