



Elevator Safety Program - Technical Clarification

Equipment: Private Vertical Residential Elevators		Topic: T/C 18-02 PRE Hoistway Doors
August 17, 2018	#: 18-02	Code/Rule: A17.1/B44-2010, 5.3.1.7.2 Code/Rule: A17.1/B44-2016, 5.3.1.7.2 & 5.3.1.8.3

Issue:

Private residential elevator hoistway doors are being installed in some instances where the distance between the inside surface of the hoistway door to the edge of the hoistway sill and/or car door or gate exceeds the following:

ASME A17.1-2010/CSA B44-10

Hoistway door to sill: 75 mm (3 in.)

Hoistway door to car door/gate: 125 mm (5 in.)

ASME A17.1-2016/CSA B44-16 (effective upon adoption of the 2016 edition)

Hoistway door to sill: 19 mm (0.75 in.)

Hoistway door to car door/gate: 100 mm (4 in.)

Requirement (2010 edition):

5.3.1.7.2 Clearance Between Hoistway Doors or Gates and Landing Sills and Car Doors or Gates. *The clearance between the hoistway doors or gates and the hoistway edge of the landing sill shall not exceed 75 mm (3 in.). The distance between the hoistway face of the landing door or gate and the car door or gate shall not exceed 125 mm (5 in.).*

Requirement (2016 edition):

5.3.1.7.2 Clearance Between Hoistway Doors and Landing Sills. *The distance between the hoistway face of the hoistway doors and the hoistway edge of the landing sill shall not exceed 19 mm (0.75 in.) for swinging doors and 57 mm (2.25 in.) for sliding doors.*

5.3.1.8.3 Clearance Between Hoistway Doors and Car Doors or Gates. *The distance between the hoistway face of the landing door and the hoistway face of the car door or gate shall conform to one of the following:*

(a) Power-Operated Horizontally Sliding Hoistway and Car Doors.

Where power-operated horizontally sliding hoistway and car doors are used, the measurement between the leading edge of the doors or sight guard, if provided, shall not exceed 100 mm (4 in.). If it is possible for a user to detach or disconnect either door from the operator (such as in the event of operator failure) and such detachment or disconnection allows the user to operate the door manually, requirement 5.3.1.8.3(e) shall apply.

(b) Swinging Hoistway Doors and Folding Car Doors.

Where swinging hoistway doors and folding car doors are used and both doors are in the fully closed position, the space between the hoistway door and the folding door shall reject a 100 mm (4 in.) diameter ball at all points.

(c) Swinging Hoistway Doors and Car Gates.

Where swinging hoistway doors and car gates are used, the space between the hoistway door and the car gate shall reject a 100 mm (4 in.) diameter ball at all points.

(d) Swinging Hoistway Doors and Power-Operated Horizontally Sliding Car Doors.

Where car door(s) are power-operated and arranged so that the car door(s) cannot be closed until after the hoistway door is closed, and car door(s) automatically open when the car is at a landing and the hoistway door is opened, the measurement between the hoistway face of the hoistway door and the hoistway face of the car door at its leading edge shall not exceed 100 mm (4 in.). If it is possible for a user to detach or disconnect either door from the operator (such as in the event of operator failure) and such detachment or disconnection allows the user to operate the door manually, requirement 5.3.1.8.3(e) shall apply.

(e) Swinging or Horizontally Sliding Hoistway Doors and Manually Operated Horizontally Sliding Car Doors.

Where swinging or horizontally sliding hoistway doors and manually operated horizontally sliding car doors are used and both doors are in the fully closed position, the space between the swinging or horizontally sliding hoistway doors and the manually operated horizontally sliding car doors shall reject a 100 mm (4 in.) diameter ball at all points.

Issue:

On some installations of residential elevators required to comply with the requirements noted above, the hoistway doors are being installed by persons other than the elevator contractor. This is resulting in a violation of the code. The doors are often standard swing doors as found anywhere in the dwelling. Most of the time the door frames associated with a standard door do not allow the door to set far enough toward the hoistway to meet the maximum dimensions as

required by code. Technically, this is considered part of the elevator and installation of hoistway doors should be done by the elevator contractor or at least under the supervision of the elevator contractor.

Required Action:

Since the hoistway doors are part of the requirements for elevator, the doors shall be installed by the elevator contractor holding the installation permit or be installed by a subcontractor working directly for the elevator contractor. The proper horizontal clearances shall be observed as measured between the inside surface of the hoistway door to the edge of the hoistway sill and from the hoistway door to the car door or gate.

The plans submitted with the permit application shall clearly show the relationship of the hoistway door to the landing sill. Clearances as required by the 2016 edition will comply with the 2010 edition.

Fillers are not addressed by the code since the code presumes the doors are installed according to requirements; ergo the fillers are not needed. Variances for fillers will not be approved. The horizontal distances required by code shall be met even if the doors need to be moved or replaced with doors that will comply.

Background and Concerns:

It appears that when the doors are installed by others, the elevator contractor is not overseeing the installation or is otherwise not involved in the installation of the hoistway doors/gates.

Once an inspector has denied the installation due to the excessive distance between the hoistway door and the edge of the hoistway sill, the question arises of whether “fillers” can be provided to reduce the distance. The rules for residential elevators do not address fillers since the requirement presumes that the doors were installed to meet the code. A problem can arise with fillers as it may reduce the clear width of the opening. This is especially true if the hoistway doors do not open more than 90 degrees. Thus, the owner *may* be disadvantaged by the narrower opening.

Another issue that “begs the question” is whether a company installing the hoistway doors is required to be a licensed elevator contractor employing licensed elevator mechanics. It is clear that the installation of the hoistway doors or gates is elevator work and needs to be performed by appropriately licensed companies and mechanics. It seems that if another company is working for the elevator contractor as a sub-contractor, the issue of licensing is met. However, if they are working for a general contractor, they should be licensed as required by RCW 70.87. This issue will need to be reviewed to ensure properly licensed companies and individuals are installing the hoistway doors/gates or, at the very least, are a sub-contractor working directly for an elevator contractor.

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Reviewed by Technical Specialists