1 RCNY §403-01

CHAPTER 400

Special Detailed Requirements Based on Use and Occupancy

§403-01 Impact Resistant Stair and Elevator Shaft Enclosures.

(a) Scope. This rule provides the construction requirements for impact resistant wall enclosures of exit stair and elevator shafts in high-rise buildings.

(b) Definitions. For the purposes of this section, all terms used herein shall have the same meanings as set forth in the building code.

(c) References. See sections 403.9.2 (Impact resistant elevator shafts) and 403.15 (Impact resistant stair enclosures) of the building code.

(d) Construction requirements. A compliant wall assembly shall provide an impact resistance equivalent to or exceeding the performance of a wall assembly described in paragraph (1), (2), or (3) below:

(1) Prescriptive stud and wall board assembly. An impact resistant shaft enclosure constructed as a stud and wall board assembly shall satisfy the following requirements:

(i) Materials and assemblies shall comply with the following:

(A) Materials. Impact resistant wall board sheathed on the impact face of the stair or elevator enclosure wall assembly shall be tested by an approved testing agency. The impact face shall be considered the outer surface of the stair or elevator enclosure, on all occupied sides of the building, and shall be comprised of two (2) layers of wall boards. The wall board used as the base layer on the impact face of the enclosure shall be listed by an approved agency to ASTM C1629-06, *Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels,* Hard Body Impact Classification Level 2, and the wall board used as the finish layer shall be a minimum ⅝ inch (16 mm) gypsum wall board (see Figure 1).

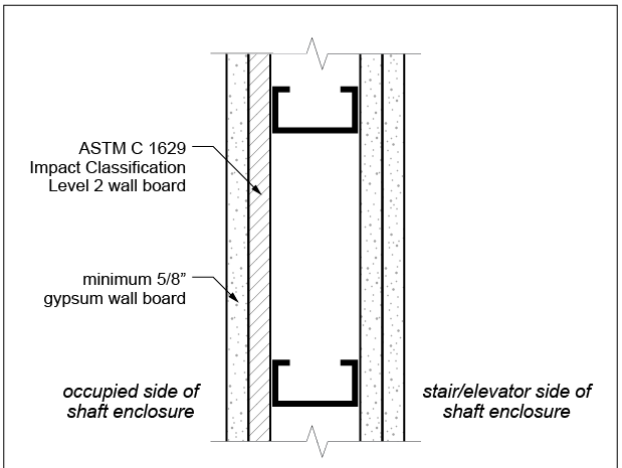

Figure 1
section through impact resistant
shaft enclosure wall

(B) Assembly. The wall assembly shall be at least two-hour fire resistance rated.

(ii) Installation shall comply with the following:

(A) Studs shall be minimum 3-½ inch (89 mm) depth cold-formed steel framing, at least 33 mils thick (20 gauge).

(B) Vertical studs shall be spaced at a maximum distance of 24 inches (610 mm), on center.

(C) Runners shall be securely attached at the floor and ceiling to structural element members and shall comply with the structural requirements of the building code. The installation of top and bottom runner tracks shall be subject to special inspection.

(D) Wall boards shall be attached with No. 8 self-drilling bugle-head screws, 12 inches (305 mm), on center maximum, with a minimum depth of ⅝ inch (16 mm) penetration into the wall cavity.

(E) Joints between adjoining sheets of wall board shall be staggered from the base layer with the face panel layer.

(2) Concrete or masonry walls. Concrete or masonry walls shall satisfy the impact resistance requirements of this rule provided that the shaft enclosure walls are anchored to structural members that provide lateral support as may be required by chapter 16 of the building code. The wall shall be at least two-hour fire resistance rated.

(3) Performance-based requirements. Wall assemblies not classified in paragraphs (1) or (2) of this subdivision shall comply with the following criteria:

(i) Impact face. The impact face shall be considered as the outer side of the stair or elevator enclosure, on all occupied sides of the building. Materials constituting the impact face of the stair or elevator enclosure assembly shall be tested by an approved testing agency to ASTM C1629, Hard Body Impact Classification Level 3. When more than one (1) layer of material is required to satisfy the impact resistance requirement, such layers shall be tested together.

(ii) Assembly. The wall assembly shall have a minimum two-hour fire resistance rating. The wall assembly shall be tested by an approved testing agency to ASTM C1629, Soft Body Impact Classification Level 2.

(iii) Installation. Wall assemblies shall be anchored to structural members and shall comply with the structural requirements of the building code. The installation shall be subject to special inspection.