

Policy Directive No. 78
Fire Escapes for Existing Dwellings
Sections 3403 OBC, 3404 OBC and Chapter 1117 CBC

Building Inspectors have raised valid questions as to the use of fire escapes in light of the provisions of Section 3404.4 OBC. The 22" width requiring 40" balconies is occasionally too wide for the narrow yards available. Often the 8" risers and 8" treads requires too long a horizontal run for the available space on the face of a building. Limiting interstices to ½" together with the width and run required, make these fire escapes weighty structures that might overtax supporting walls. The 14" fire escape that was permitted by Sec. 1961, et. seq. of the former Cincinnati Building Code, has been erected at approximately 7000 locations and its record in saving lives has been amply documented as being a reasonably adequate and safe means of egress.

Since most existing residences seem to have some practical difficulty or unnecessary hardship in connection with fire escapes, all existing residences should be treated equally.

Therefore, the following regulations shall apply to residences under the circumstances given:

1. Fire escapes shall not constitute more than 50 percent of the required means of egress for any household unit and shall not replace an existing and conforming required stairway. The width shall reflect 0.5 inches per occupant as per NFPA 101.
2. Fire escapes constructed in accordance with the minimum requirements set forth in the Appendix, may be used only as follows:
 - A. To repair or replace portions of existing 14" fire escapes;
 - B. On one, two, or three family dwellings;
 - C. When the Director of Buildings and Inspections orders the installation of a fire escape on an existing residential building to correct an existing inadequate exit situation.
3. Fire escapes extension for new dwelling units in existing buildings shall be permitted where the building is not over 4 stories in height. Such fire escapes shall meet all of the requirements of Section 3404 OBC except as herein modified. (See the Appendix.)
4. Access windows shall be acceptable for access to existing fire escapes and access from new or existing dwelling units in existing buildings under the conditions listed in preceding items "2.A." through "2.C". only, provided that the windows meet the following requirements, which shall be verified in the field by the inspector before the building permit is issued:
 - A. Such windows shall have not less than 5.7 square feet of unobstructed openable area;
 - B. They shall not be less than 24" in least dimension;
 - C. The sills shall be not more than 44" above the floor of the room.

5. Protection of Wall Openings and Arrangement of Fire Escapes - Under those conditions listed in preceding items "2.A." through "2.C", such openings in existing buildings shall not be required to be protected herein for stair hall windows or doors.

New fire escapes or new extensions of existing fire escapes for NEW DWELLING UNITS shall not be permitted or arranged in such a way that a person using the fire escape would be required to pass directly in front of or within 10 feet of openings in a wall which forms a part of the enclosure for the required primary means of egress. Where an existing fire escape is already so arranged as to require persons to pass in front of or within 10 feet of such openings, the openings shall be protected by approved fire resistive windows or doors if the fire escape is to serve a new dwelling unit or if the building is otherwise substantially altered. Windows for such openings required to be protected, shall have fixed sash, glazed with wired glass. Mechanical ventilation may be required.

6. Where new construction involves a fire escape or is subject to the installation of a fire escape, the building permit for such construction shall not be issued unless or until it can be ascertained that a fire escape can be erected of the size and arrangement required.

APPENDIX

1. Fire escapes of welded construction shall conform to the provisions of Divisions (2.) through (5.) of this Appendix, except that all necessary connections shall be made by means of welds and the lug specified in Division (3.C.) of this Appendix shall not be required. Welds shall be made only by welders, tackers, and welding operators who have been previously qualified by tests as prescribed in the Code for Welding in Building Construction, AWS D1.1-04, of the American Welding Society to perform the type of worked required.
2. General:
 - A. A balcony shall be provided for each floor above the first; each balcony shall be of sufficient length where practicable to cover 2 windows and the floor of each balcony shall be placed not more than 12 inches below the sills of the windows which it serves.
 - B. Balconies shall be connected by rigidly secured stairs having an inclination from the vertical of not less than 6 inches in a rise of 10 inches. The stairs shall be hung on one side of or between the windows which the balconies serve, and on the outer side of the balcony.
 - C. From the lowermost balcony to the ground, there shall be provided a counterbalanced stair so constructed as to remain in a horizontal position when not in use. Where, in the judgement of the Director of Buildings and Inspections, special conditions make the use of a counterbalanced stair impracticable, a counterbalanced drop ladder may be substituted.
 - D. At no point shall balconies have a clear width of less than 14 inches. Stairs shall be not less than 14 inches between stringers.
3. Brackets:
 - A. Brackets supporting balconies shall be spaced not more than 3 feet 6 inches from center to center, and there shall be provided not less than 2 brackets for each flight of stairs, one at each balcony.
 - B. Brackets shall be constructed of 1½ inch by 1½ inch by ¼ inch angles. Each bracket shall be made up of a horizontal, vertical and diagonal member, connected by ¼ inch gusset plates. Brackets shall extend the full width of the balcony and shall have a depth to the wall of not less than 18 inches.

- C. Each bracket shall be secured to the wall at the top by a 3/4 inch bolt, rigidly attached to the balcony frame, extending through the wall and provided on the inside with a nut, and a washer not less than 6 inches by 6 inches by 1/4 inch in size. The washer shall be bedded in cement. The lug shall be provided at the lower end of the bracket by extending the diagonal member into the wall not less than 2 inches. This leg shall be firmly leaded or cemented in place. The diagonal member may be held back from the end of the horizontal member a distance of not more than 8 inches. End brackets and brackets supporting stairs shall extend to the full width of the balcony. Alternate intermediate brackets shall have horizontal members extended 8 inches beyond the railing of balcony frame, with a hole at the end for securing a 5/8 inch rod for bracing the top balcony rail.

4. Balconies:

- A. The lower frame shall consist of 1½ inch by 1½ inch by 1/4 inch angles, set without outside legs vertical in an upward position. The frame shall have an overall width outside of the angles, of at least 34 inches, and shall be set 2 inches from the wall. The trimmer angle shall consist of a 1½ inch by 1½ inch by 1/4-inch angle, set with the vertical leg downward. The trimmer angle shall extend the full length of the balcony, and shall be coped out at each bracket, bringing the horizontal leg to bearing and shall be secured at each bracket. The width of the wall opening shall be not less than 20 inches from outside of frame to trimmer angle. The length of the well opening shall be not less than 3 feet 6 inches.
- B. The balcony shall extend beyond the well opening a minimum of 18 inches.
- C. The balcony floors shall consist of 1½ inch by 1/4 inch flats, spaced not to exceed 3 inches center to center and securely fastened to cross pieces of the same size and material and the ends of the balcony frame. The cross pieces shall be placed not more than 21 inches on center and shall be riveted to the side angles of the balcony frame.
- D. The top frame or railing shall be made by 1¼ inch by 1¼ inch by 3/16 inch angles. The ends of the railing shall extend into the wall to a depth of at least 4 inches and shall be firmly leaded in place. The railing shall be 30 inches high. Corner uprights shall consist of 1¼ inch by 1¼ inch by 3/16 inch angles, secured through each leg to the top and bottom frames. Other uprights may consist of 1 inch by 3/16 inch flats. An upright shall be provided at each bracket and alternate railing angle, and with its lower end secured to the bracket extension hereinbefore described. An intermediate railing consisting of a 1 inch by 3/16 inch flat shall be placed at the third points of the height of the posts, and connected thereto

5. Stairs:

- A. Stringers of stairs connecting balconies shall be 4 inches by 1/4 inch flat bars. Treads shall be constructed of three bars, 1/2 inch square, placed diagonally and spaced 1½ inches center to center and welded in place. The rise from tread to tread shall be not less than 8 inches nor more than 10 inches. A hand railing shall be provided on each side of stairs, each rail to consist of a 3/4 inch round rod, firmly secured at top and bottom and braced near its center by an angle iron upright secured to stair stringer.
- B. Where the vertical distance between balconies is 12 feet or more, the stairs shall be braced laterally with a horizontal rod, 3/4 inch in diameter, placed 7 feet above the balcony floor. This rod shall be secured to the inside stair stringer with a nut on each side, and shall extend 2 inches into the wall and be solidly caulked with lead.

- C. The counterbalanced stairs shall be, in general, constructed the same as fixed stairs and provided with a handrail on each side. Counterweights shall hold the stairs in a horizontal position then not in use. A short flight of fixed stairs shall be provided at the balcony, consisting of at least 3 treads. The upper end of the stringers shall be connected to the stair bracket. The lower end shall be supported on brackets or suspended from a bracket above with 1½ inch by ¼ inch flat bars on each side of the stairs. The counterbalanced part of the stairs shall have stringers extended, with a cast iron counterweight on the end; the extended arms shall be bent so as to clear all parts of fixed stairs. The stringers of the counterbalanced stairs shall be at least 14-¾ inches apart. The pivot shall consist of a 7/8 inch bolt passing through 1 inch holes in the stringers and shall be provided with a 1/8 inch brass washer, 2 inches in diameter under the head and nut of the bolt, and between the fixed and moving stringers. The nut shall be secured with a cotter pin.
 - D. Where extended stringer counterweight construction is impracticable, suspended cast iron counterweight, freely sliding in guides secured to the wall of the building, may be used. The guides shall be closed at the bottom to form a seat for the counterweight when the stairs are in a raised position. The counterweight cable shall be not less than 3/8 inch wire cable operating over freely acting sheathed pulleys.
6. Materials and Workmanship:
- A. All structural parts shall be free from grease, dirt, rust or mill scale. Holes in walls shall be carefully and neatly cut to required sizes.
 - B. All parts shall be given a shop coat of paint. After erection, all scuffed places, rivets, connections and bolts shall be touched up with paint, after which the entire fire escape shall be given one coat of paint on all exposed surfaces.

**Policy Directive No. 79
Building Valuation Data
Section 1101-87 CBC**

The referenced section of the Cincinnati Building Code provides in part that the permit fees for new buildings and additions to existing buildings shall be based on the valuation of the buildings or additions, as determined by the Director of Buildings and Inspections solely for fee purposes. Said valuation for applicable building projects will be determined by the accompanying "Square Foot Construction Cost Table".

NOTES ON USE OF TABLE

1. Valuations shall be determined by multiplying the gross floor area and unit cost based on construction type and use group from the table.
2. When a story is occupied by two or more uses, not included in the same use group, use the table figures for each use group.
3. Use the table figures for the actual type of construction for which a given building qualifies, not the minimum required.