

13-3.5 Borrowed Lights. Borrowed lights shall be limited to the maximum size openings indicated in their individual listings.

13-4 Installation.

13-4.1 Frames. Frames shall be fastened securely to the wall and shall be capable of resisting all wind stresses and any other stresses for which the window was designed.

13-4.2 Fire Lock Angles.

13-4.2.1 Fire lock angles shall be designed to hold the ventilator in the frame as the assembly expands under exposure to fire.

13-4.2.2 Where the window is provided with fire lock angles, the fire lock angles shall be adjusted so that they pass one another with a minimum of clearance.

13-4.3 Glazing Material.

13-4.3.1 Wire clips, glazing angle clips, continuous glazing channels, or continuous glazing angles shall be used to retain the glazing material. Where wire clips or glazing angle clips are used for glazing the window, one wire clip or glazing angle clip shall be installed in each mounting hole. Where continuous glazing angles or channels are used, a screw or bolt and nut shall be installed in each mounting hole.

13-4.3.2 Glazing materials shall be installed in accordance with their individual listing.

13-5 Closing Devices. All fire windows shall be of a fixed type or shall be automatic closing. The automatic-closing device can be an integral part of the assembly or a separate system, such as weights suspended by ropes, wire cables, or chains over pulleys, arranged so that operation of the automatic fire detector shall cause the ventilator to close.

Chapter 14 Glass Block

14-1 General. This chapter covers the installation of glass block.

14-1.1 Labeled. Only labeled glass block shall be used.

14-1.2 Size. Glass block shall be permitted for the protection of openings not exceeding 120 ft² (11.15 m²) with neither the width nor height exceeding 12 ft (3.66 m).

14-2 Installation. Glass block shall be installed in accordance with its individual listing.

Chapter 15 Care and Maintenance

15-1* General. This chapter covers the care and maintenance of fire doors and fire windows.

15-1.1 Removal of Window. Where a door or window opening is no longer in use, the opening shall be filled with construction equivalent to that of the wall.

15-1.2 Operability. Doors, shutters, and windows shall be operable at all times. They shall be kept closed and latched or arranged for automatic closing.

15-1.3 Replacement. Where it is necessary to replace fire doors, shutters, windows or their frames, hardware, and closing mechanisms, replacements shall meet the requirements

for fire protection and shall be installed as required by this standard for new installations.

15-1.4 Repairs. Repairs shall be made and defects that could interfere with operation shall be corrected immediately.

15-2 Specific Requirements.

15-2.1* Inspections.

15-2.1.1* Hardware shall be examined frequently and any parts found to be inoperative shall be replaced immediately.

15-2.1.2 Tin clad and Kalamein doors shall be inspected regularly for dry rot.

15-2.1.3 Chains or cables employed on suspended doors shall be inspected frequently for excessive wear and stretching.

15-2.2 Lubrication and Adjustments.

15-2.2.1 Guides and bearings shall be kept well lubricated to facilitate operation.

15-2.2.2 Chains or cables on biparting, counterbalanced doors shall be checked frequently and adjustments shall be made to ensure proper latching and to keep the doors in proper relation to the opening.

15-2.3 Prevention of Door Blockage.

15-2.3.1 Door openings and the surrounding areas shall be kept clear of anything that could obstruct or interfere with the free operation of the door.

15-2.3.2 Where necessary, a barrier shall be built to prevent the piling of material against sliding doors.

15-2.3.3 Blocking or wedging of doors in the open position shall be prohibited.

15-2.4 Maintenance of Closing Mechanisms.

15-2.4.1 Self-closing devices shall be kept in proper working condition at all times.

15-2.4.2 Swinging doors normally held in the open position and equipped with automatic-closing devices shall be operated at frequent intervals to ensure proper operation.

15-2.4.3 All horizontal or vertical sliding and rolling fire doors shall be inspected and tested annually to check for proper operation and full closure. Resetting of the release mechanism shall be done in accordance with the manufacturer's instructions. A written record shall be maintained and shall be made available to the authority having jurisdiction.

15-2.4.4 Fusible links or other heat-actuated devices and release devices shall not be painted.

15-2.4.5 Care shall be taken to prevent paint accumulation on any movable part such as, but not limited to, stay rolls, gears, and closing mechanisms.

15-2.5 Repair of Fire Doors and Windows.

15-2.5.1 Broken or damaged glazing material shall be replaced with labeled glazing. Wire glass shall be well embedded in putty and all exposed joints between the frame and the glass shall be struck and pointed. Other glazing materials shall be installed in accordance with their individual listing.

15-2.5.2 Any breaks in the face covering of doors shall be repaired immediately.

15-2.5.3 Where a fire door, frame, or any part of its appurtenances is damaged to the extent that it could impair the door's proper emergency function, it shall be repaired with parts obtained from the door's manufacturer. Upon completion of the repairs, the door shall be tested to ensure emergency operation and closing.

15-2.5.4 When holes are left in a door or frame due to changes or removal of hardware or plant-ons, the holes shall be repaired by the following methods:

- (a) Install steel fasteners that adequately fill the holes
- (b) Fill the screw or bolt holes with the same material as the door or frame

15-2.6 Fire Prevention.

15-2.6.1 Combustible material shall be kept well away from openings.

15-2.6.2 Devices that utilize an open flame shall not be used to test fusible links, heat, smoke, or other automatic devices.

Chapter 16 Referenced Publications

16-1 The following documents or portions thereof are referenced within this standard as mandatory requirements and shall be considered part of the requirements of this standard. The edition indicated for each referenced mandatory document is the current edition as of the date of the NFPA issuance of this standard. Some of these mandatory documents might also be referenced in this standard for specific informational purposes and, therefore, are also listed in Appendix K.

16-1.1 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

NFPA 72, *National Fire Alarm Code*®, 1996 edition.

NFPA 82, *Standard on Incinerators and Waste and Linen Handling Systems and Equipment*, 1999 edition.

NFPA 232, *Standard for the Protection of Records*, 1995 edition.

NFPA 251, *Standard Methods of Tests of Fire Endurance of Building Construction and Materials*, 1995 edition.

NFPA 252, *Standard Methods of Fire Tests of Door Assemblies*, 1995 edition.

NFPA 253, *Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source*, 1995 edition.

NFPA 257, *Standard on Fire Test for Window and Glass Block Assemblies*, 1996 edition.

16-1.2 Other Publications.

16-1.2.1 ANSI Publications. American National Standards Institute, Inc., 11 West 42nd Street, 13th floor, New York, NY 10036.

ANSI A133.1, *Tin-Clad Fire Doors Mounted Singly and in Pairs*, 1993.

ANSI A156.1, *Standard for Butts and Hinges*, 1988.

ANSI A156.4, *Door Controls (Closers)*, 1992.

16-1.2.2 ASME Publication. American Society of Mechanical Engineers, 345 East 47th Street, New York, NY 10017.

ASME/ANSI A17.1, *Safety Code for Elevators and Escalators*, 1993.

16-1.2.3 CSA Publication. Canadian Standards Association, 178 Rexdale Boulevard, Rexdale, Ontario M9W 1R3.

CAN 3-B44, *Safety Code for Elevators*, including Supplement No. 1, 1987.

16-1.2.4 U.S. Government Publication. U.S. Government Printing Office, Washington, DC 20402.

Federal Specification FF-S-325 (September 1957) and Interim Amendment 3 (July 1965).

Appendix A Explanatory Material

Appendix A is not a part of the requirements of this NFPA document but is included for informational purposes only. This appendix contains explanatory material, numbered to correspond with the applicable text paragraphs.

A-1-1

(a) Each class of device (e.g., doors, shutters, windows) has certain advantages and limitations, and the importance of each of these characteristics needs to be considered for the specific opening under consideration. A device cannot be expected to perform properly except under the condition for which it was designed. Assemblies incorporating fire-resistant glazing materials also have been developed that have been tested and evaluated as components of fire doors or fire-resistant walls rather than as glass lights or fire windows. Users first should ascertain from the authority having jurisdiction which type of device or material, if any, is acceptable in the location proposed, and the contract should be subject to the approval of the authority having jurisdiction.

(b) Fire door assemblies for the protection of openings depend on the use of labeled fire doors and frames, listed or labeled latching devices, listed swinging and sliding hardware, and closing devices having the required fire protection ratings that close or are closed at the time of fire. The effectiveness of the entire assembly as a fire barrier could be destroyed if any component is omitted or if one of substandard quality is used. Except where restricted by individual published listings, a fire door assembly may be permitted to consist of the labeled, listed, or classified components of different organizations that are acceptable to the authority having jurisdiction.

(c) Where fire doors are used in a means of egress, NFPA 101®, *Life Safety Code*®, specifies that they are required to swing with the exit travel except for doors on individual small rooms, which may be permitted to swing in; and that for horizontal exits, where fire doors are required on both sides of the wall, one door may be permitted to be an automatic horizontally sliding door, normally open, and the other door may be permitted to be a self-closing door that swings with the exit travel, normally closed. The following types of doors may not be permitted to be used on exits:

1. Rolling steel doors or shutters
2. Vertical sliding doors
3. Jackknife doors

(d) Labeled fire exit hardware that meets the requirements for safety to life and fire protection is available for use on labeled fire doors. Fire doors for use with this hardware are required to bear the following marking on the label: "Fire Door To Be Equipped with Fire Exit Hardware."