

Fire Door Maintenance

Fire and Life-Safety Group (FLS)

I. INTRODUCTION

This document was prepared to list the requirements for routine maintenance and testing of fire doors and fire door hardware. The requirements in this document are based on the 2009 edition of the *International Fire Code* (IFC) and the 2007 edition of the Fire Doors and Other Opening Protectives Code (NFPA-80). **Based on the following code sections, all fire door assemblies including swinging doors, horizontal and vertical sliding doors, and rolling fire doors should be inspected at least annually.**

II. GENERAL REQUIREMENTS FOR FIRE DOORS

Section 5.1.3.1 of NFPA-80 states that fire doors should be operable at all times.

Section 5.2.14.1 of NFPA-80 states that self-closing devices (i.e. door closers) should be kept in working condition at all times.

III. REQUIREMENTS FOR MAINTENANCE OF FIRE DOORS

Section 5.1.5.1 of NFPA-80 states that fire door repairs should be made, and defects that could interfere with operation should be corrected without delay.

Section 5.2.12.1 of NFPA-80 states that guides and bearings should be kept well lubricated to facilitate operation.

Section 703.2 of the IFC states that fire doors should be maintained in an operative condition in accordance with NFPA-80.

Section 703.2.2 of the IFC states that hold-open devices and automatic door closers, where provided, should be maintained. During the period that such a device is out of service for repairs, the door it operates should remain closed but operable.

IV. REQUIREMENTS FOR INSPECTING AND TESTING FIRE DOORS

Section 5.2.1 of NFPA-80 states that fire door assemblies should be inspected and tested not less than annually, and a written record of the inspection should be signed and kept for inspection by the AHJ.

Section 5.2.2.1 of NFPA-80 states that as an alternate means of compliance with 5.2.1, subject to the AHJ, fire door assemblies should be permitted to be inspected, tested, and maintained under a written performance-based program.

Section 5.2.2.2 of NFPA-80 states that goals established under a performancebased program should provide assurance that the fire door assembly will perform its intended function when exposed to fire conditions.

Section 5.2.2.3 of NFPA-80 states that technical justification for inspection, testing, and maintenance intervals should be documented.

Annex J.1 and J.2 of NFPA-80 state that equivalent levels of performance can be demonstrated through quantitative performance-based analyses, subject to the approval of the Authority Having Jurisdiction, e.g. fire marshal. The concept of a performance-based program is to establish the type and frequency of inspection to demonstrate that the assembly is operational. The goal is to balance the inspection frequency with proven reliability of assembly. (For additional information on performance-based programs please see annex J of NFPA-80).

Section 5.2.3.1 of NFPA-80 states that functional testing of fire doors should be performed by individuals with knowledge and understanding of the operating components of the type of door being subject to testing.

Section 5.2.3.2 of NFPA-80 states that before testing, a visual inspection should be performed to identify any damaged or missing parts that could create a hazard during testing or affect operation or resetting.

Section 5.2.4.2 of NFPA-80 states that as a minimum, the following items should be verified for swinging doors with builders hardware or fire door hardware:

1. No open holes or breaks exist in surfaces of either the door or frame.
2. Glazing, vision light frames, and glazing beads are intact and securely fastened in place, if so equipped.
3. The door, frame, hinges, hardware, and noncombustible threshold are secured, aligned, and in working order with no visible signs of damage.
4. No parts are missing or broken.
5. Door clearances at the door edge to the frame, on the pull side of the door, should not exceed the following clearances:
 - a) The clearance under the bottom of a door should be a maximum of 3/4 inch.
 - b) Where the bottom of the door is more than 38 in. above the finished floor, the maximum clearance should not exceed 3/8 inch or as specified by the manufacturer's label service procedure.
 - c) The clearance between the top and vertical edges of the door and the frame, and the meeting edges of doors swinging in pairs, should be 1/8

inch +/- 1/16 for steel doors and should not exceed 1/8 inch for wood doors.

6. The self-closing device is operational, that is, the active door completely closes when operated from the full open position.
7. If a coordinator is installed, the inactive leaf closes before the active leaf.
8. Latching hardware operates and secures the door when it is in the closed position.
9. Auxiliary hardware items that interfere or prohibit operation are not installed on the door or frame.
10. No field modifications to the door assembly have been performed that void the label.
11. Gasketing and edge seals, where required, are inspected to verify their presence and integrity.

Section 5.2.5.2 of NFPA-80 states that the following items should be verified for horizontally sliding, vertically sliding, and rolling doors:

1. No open holes or breaks exist in surfaces of either the door or frame.
2. Slats, endlocks, bottom bar, guide assembly, curtain entry hood, and flame baffle are correctly installed and intact.
3. Glazing, vision light frames, and glazing beads are intact and securely fastened in place, if so equipped.
4. Curtain, barrel, and guides are aligned, level, plumb, and true.
5. Expansion clearance is maintained in accordance with manufacturer's listing.
6. Drop release arms and weights are not blocked or wedged.
7. Mounting and assembly bolts are intact and secured.
8. Attachments to jambs are with bolts, expansion anchors, or as otherwise required by the listing.
9. Smoke detectors, if equipped, are installed and operational.
10. No parts are missing or broken.
11. Fusible links, if equipped, are in the location; chain/cable, s-hooks, eyes, and so forth, are in good condition (i.e., no kinked or pinched cable, no twisted or inflexible chain); and links are not painted or coated with dust or grease.
12. Auxiliary hardware items that interfere or prohibit operation are not installed on the door or frame.
13. No field modifications to the door assembly have been performed that void the label.

Section 5.2.6 of NFPA-80 states that inspections should include an operational test for automatic-closing doors to verify that the assembly will close under fire conditions.

Section 5.2.7 of NFPA-80 states that a fire door assembly should be reset after a successful test.

Section 5.2.8 of NFPA-80 states that resetting of the release mechanism should be done in accordance with manufacturer's instructions.

Section 5.2.9 of NFPA-80 states that hardware should be examined, and inoperative hardware, parts, or other defects should be replaced without delay.

Section 5.2.10 of NFPA-80 states that tin-clad and kalamein doors should be inspected for dry rot of the wood core.

Section 5.2.11 of NFPA-80 states that chains or cables employed should be inspected for excessive wear and stretching.

Section 5.2.12.2 of NFPA-80 states that chains or cables on biparting, counterbalanced doors should be checked and adjustments should be made to ensure latching and to keep the doors in proper relation to the opening.

Section 5.2.14.2 of NFPA-80 states that swinging doors normally held in the open position and equipped with automatic-closing devices should be operated at frequent intervals to ensure operation.

Section 5.2.14.3 of NFPA-80 states that all horizontal or vertical sliding and rolling fire doors should be inspected and tested annually to check for operation and full closure.

Section 703.4 of the IFC states that horizontal and vertical sliding and rolling fire doors should be inspected and tested annually to confirm proper operation and full closure. A written record should be maintained and be available to the fire code official.