

Section 7.3. Inspections and Test Procedures for Smoke Control Measures

7.3.1. General

7.3.1.1. Application

1) The test procedures described in Subsections 7.3.2. to 7.3.15., as appropriate to the fire safety measure being used, shall be carried out in addition to those required by Sections 7.1. and 7.2., unless otherwise specified in the fire safety plan. (See Note A-7.3.1.1.(1).)

7.3.1.2. Doors in Means of Egress

1) Where vestibules or stairshafts are pressurized as a means of smoke control, all doors in the path of *exit* travel shall be tested to ensure that they can be operated as required in Article 2.7.2.1. when the entire smoke control system is being tested.

7.3.2. Measure A

7.3.2.1. Test Procedures

- 1) Where Measure A is used to limit smoke movement as provided in Commentary C of the “User’s Guide – NBC 1995 Fire Protection, Occupant Safety and Accessibility (Part 3)”,
- a) switches at the central alarm and control facility shall be tested to ensure that
 - i) *closures* to vent openings in *vertical service spaces* that are required by Sentence (6)* (SEE NOTE) of Measure A open automatically and remain open, and
 - ii) the mechanical air supply to below *grade* stairshafts is initiated as provided in Sentence (3)* of Measure A,
 - b) *closures* in openings to the outdoors in *vertical service spaces* that are required by Sentence (6)* of Measure A shall be tested to ensure that they will operate as required,
 - c) *closures* in vent openings to the outdoors in above *grade* stairshafts shall be tested to ensure that they can be opened manually and will remain open as provided in Sentence (2)* of Measure A, and
 - d) *closures* in vent openings to the outdoors in below *grade* stairshafts shall be tested to ensure that they will open automatically, if such means is provided, and remain open when air is being injected into the stairshaft.

7.3.3. Measure B

7.3.3.1. Test Procedures

- 1) Where Measure B is used to limit smoke movement as provided in Commentary C of the “User’s Guide – NBC 1995 Fire Protection, Occupant Safety and Accessibility (Part 3)”,
- a) switches at the central alarm and control facility shall be tested at intervals conforming to Article 7.2.1.1. to ensure that
 - i) dampers in air-handling systems that serve more than 2 *storeys* close automatically and remain closed as provided in Sentence (7)* of Measure B, and
 - ii) *closures* to vent openings in *vertical service spaces* that are required by Sentences (5)* and (6)* of Measure B open automatically and remain open,
 - b) switches at the central alarm and control facility shall be tested to ensure that the mechanical air supply to below *grade* stairshafts is initiated as provided in Sentence (3)* of Measure B,
 - c) *closures* in openings to the outdoors in *vertical service spaces* that are required by Sentence (5)* of Measure B shall be tested at intervals conforming to Article 7.2.1.1. to ensure that they will operate as required, and
 - d) *closures* in vent openings to the outdoors in below *grade* stairshafts shall be tested to ensure that they open automatically, if such means is provided, and remain open when air is being injected into the stairshaft as required by Sentence (3)* of Measure B.

7.3.4. Measure C

7.3.4.1. Test Procedures

- 1) Where Measure C is used to limit smoke movement as provided in Commentary C of the “User’s Guide – NBC 1995 Fire Protection, Occupant Safety and Accessibility (Part 3)”,
 - a) switches at the central alarm and control facility shall be tested to ensure that the mechanical air supply to below *grade* stairshafts is initiated as provided in Sentence (3)* of Measure C, and
 - b) *closures* in vent openings to the outdoors in below *grade* stairshafts shall be tested to ensure that they open automatically, if such means is provided, and remain open when air is being injected into the stairshafts.

7.3.5. Measure D

7.3.5.1. Test Procedures

- 1) Where Measure D is used to limit smoke movement as provided in Commentary C of the “User’s Guide – NBC 1995 Fire Protection, Occupant Safety and Accessibility (Part 3)”,
 - a) switches at the central alarm and control facility shall be tested at intervals conforming to Article 7.2.1.1. to ensure that
 - i) *closures* in vent openings to the outdoors in vestibules, *vertical service spaces* and elevator shafts open automatically and remain open as provided in Sentences (6)*, (10)*, (12)* and (13)* of Measure D, and
 - ii) dampers in air-handling systems that serve more than 2 *storeys* close automatically and remain closed as provided in Sentence (16)* of Measure D,
 - b) switches at the central alarm and control facility shall be tested to ensure that the mechanical air supply to vestibules and below *grade* stairshafts is initiated as provided in Sentence (5)* of Measure D,
 - c) *closures* in vent openings to the outdoors in *vertical service spaces* or at the top of elevator shafts as required by Sentences (10)*, (12)* and (13)* of Measure D shall be tested at intervals conforming to Article 7.2.1.1. to ensure that they will operate as required,
 - d) *closures* in vent openings to the outdoors in above *grade* stairshafts and at the *street* entrance floor of firefighters’ elevator shafts shall be tested to ensure that they can be opened manually and remain open as provided in Sentences (7)* and (11)* of Measure D, and
 - e) *closures* in vent openings to the outdoors in below *grade* stairshafts shall be tested to ensure that they open automatically, if such means is provided, when air is being injected into the stairshafts as required by Sentence (8)* of Measure D.
- 2) Pressurized vestibules shall be tested in different seasons by a pressure sensor or by tracer smoke at intervals not greater than 2 years and after any alteration to the *building*, to ensure that movement of air is from the vestibules to the *floor areas* on all *storeys*.

7.3.6. Measure E

7.3.6.1. Test Procedures

- 1) Where Measure E is used to limit smoke movement as provided in Commentary C of the “User’s Guide – NBC 1995 Fire Protection, Occupant Safety and Accessibility (Part 3)”,
 - a) switches at the central alarm and control facility shall be tested at intervals conforming to Article 7.2.1.1. to ensure that *closures* in vent openings to the outdoors in vestibules and firefighters’ elevator shafts that are required by Sentences (4)* and (9)* of Measure E will open automatically and remain open,
 - b) switches at the central alarm and control facility shall be tested to ensure that the mechanical air supply to vestibules and below *grade* stairshafts is initiated as provided in Sentences (4)* and (7)* of Measure E,
 - c) *closures* in vent openings to the outdoors at the top of firefighters’ elevator shafts that are required by Sentence (9)* of Measure E shall be tested to ensure that they will operate as required,

- d) *closures* in vent openings to the outdoors in above *grade* stairshafts and at the *street* entrance floor of firefighters' elevator shafts that are required by Sentences (6)* and (10)* of Measure E shall be tested to ensure that they can be opened manually and will remain open, and
- e) *closures* in vent openings to the outdoors in below *grade* stairshafts shall be tested to ensure that they will open automatically, if such means is provided, and remain open when air is being injected into the stairshafts as required by Sentence (7)* of Measure E.

2) Pressurized vestibules shall be tested in different seasons by pressure sensor or by tracer smoke at intervals not greater than 2 years and after any alteration to the *building*, to ensure that movement of air is from the vestibules to the *floor areas* on all *storeys*.

7.3.7. Measure F

7.3.7.1. Test Procedures

1) Where Measure F is used to limit smoke movement as provided in Commentary C of the “User’s Guide – NBC 1995 Fire Protection, Occupant Safety and Accessibility (Part 3)”,

- a) switches at the central alarm and control facility shall be tested at intervals conforming to Article 7.2.1.1. to ensure that
 - i) *closures* to vent openings to the outdoors in *vertical service spaces*, elevator shafts and below *grade floor areas* that are required by Sentences (6)* and (10)* of Measure F open automatically and remain open, and
 - ii) dampers in air-handling systems that serve more than 2 *storeys* close automatically and remain closed as provided in Sentence (12)* of Measure F,
- b) switches at the central alarm and control facility shall be tested to ensure that the mechanical air supply to stairshafts and elevator shafts is initiated as provided in Sentences (2),* (3)* and (4)* of Measure F,
- c) *closures* in vent openings to the outdoors in *vertical service spaces* or elevator shafts that are required by Sentence (12)* of Measure F shall be tested at intervals conforming to Article 7.2.1.1. to ensure that they will operate as required, and
- d) *closures* in vent openings to the outdoors in stairshafts shall be tested to ensure that they open automatically, if such means is provided, and remain open when the mechanical air supply to the stairshafts is initiated as provided in Sentences (2)* and (3)* of Measure F.

2) Pressurized stair and elevator shafts shall be tested in different seasons by a pressure sensor or tracer smoke at intervals not greater than 2 years and after any alteration to the *building*, to ensure that the movement of air is from the stair or elevator shafts to the *floor areas* on all *storeys*.

7.3.8. Measure G

7.3.8.1. Test Procedures

1) Where Measure G is used to limit smoke movement as provided in Commentary C of the “User’s Guide – NBC 1995 Fire Protection, Occupant Safety and Accessibility (Part 3)”,

- a) switches at the central alarm and control facility shall be tested to ensure that
 - i) *closures* in vent openings to the outdoors in below *grade floor areas* that are required by Sentence (6)* of Measure G open automatically and remain open, and
 - ii) the mechanical air supply to stairshafts and elevator shafts is initiated as provided in Sentences (2),* (3)* and (4)* of Measure G, and
- b) *closures* in openings to the outdoors in stairshafts shall be tested to ensure that they open automatically, if such means is provided, and remain open when the air supply to the stairshafts is initiated as provided in Sentences (2)* and (3)* of Measure G.

2) Pressurized stair and elevator shafts shall be tested in different seasons by a pressure sensor or tracer smoke at intervals not greater than 2 years and after any alteration to the *building*, to ensure that the movement of air is from the stair or elevator shafts to the *floor areas* on all *storeys*.

7.3.9. Measure H

7.3.9.1. Test Procedures

1) Where Measure H is used to limit smoke movement as provided in Commentary C of the “User’s Guide – NBC 1995 Fire Protection, Occupant Safety and Accessibility (Part 3)”, switches at the central alarm and control facility shall be tested at intervals conforming to Article 7.2.1.1. to ensure that

- a) *closures* in vent openings to the outdoors or into smoke shafts on each floor will open automatically and remain open as provided in Sentence (6)* of Measure H,
- b) dampers in return air and exhaust ducts will close automatically and remain closed as provided in Sentence (5)* of Measure H,
- c) return air and exhaust fans are stopped and supply fans will provide air to all *floor areas* and stairshafts as provided in Sentence (3)* of Measure H, and
- d) *closures* in all openings in external walls and roofs will close automatically and remain closed as provided in Sentence (4)* of Measure H.

2) Pressurized vestibules at or near *grade* level shall be tested by a pressure sensor or tracer smoke in different seasons at intervals not greater than 2 years and after any alteration to the *building*, when the *building* is pressurized but without venting of the fire floor, to ensure that the direction of air movement is from the *building* to the outdoors.

7.3.10. Measure I

7.3.10.1. Test Procedures

1) Where Measure I is used to limit smoke movement as provided in Commentary C of the “User’s Guide – NBC 1995 Fire Protection, Occupant Safety and Accessibility (Part 3)”, switches at the central alarm and control facility shall be tested at intervals conforming to Article 7.2.1.1. to ensure that

- a) dampers in air-handling systems that serve more than 2 *storeys* will close automatically and remain closed as provided in Sentence (8)* of Measure I,
- b) *closures* in openings in the walls and roof of the central core and in shafts within the core will close automatically and remain closed as provided in Sentence (3)* of Measure I,
- c) return air fans are stopped and supply fans will provide air to the central core as provided in Sentence (2)* of Measure I,
- d) *closures* in vent openings to the outdoors and into smoke shafts from each *floor area* will open automatically and remain open as provided in Sentence (4)* of Measure I,
- e) air movement is initiated in an exhaust system used for venting as provided in Sentence (4)* of Measure I, and
- f) *closures* in vent openings to the outdoors in *vertical service spaces* outside the central core that are required by Sentence (6)* of Measure I will open automatically and remain open.

2) The pressurized core shall be tested at or near *grade* in different seasons by a pressure sensor or tracer smoke at intervals not greater than 2 years and after any alteration to the *building*, to ensure that movement of air is from the pressurized core to the outdoors on all *storeys*.

7.3.11. Measure J

7.3.11.1. Test Procedures

1) Where Measure J is used to limit smoke movement as provided in Commentary C of the “User’s Guide – NBC 1995 Fire Protection, Occupant Safety and Accessibility (Part 3)”, switches at the central alarm and control facility shall be tested at intervals conforming to Article 7.2.1.1. to ensure that

- a) *closures* in openings in the walls and roofs of the central core and in shafts within the core will close automatically and remain closed as provided in Sentence (3)* of Measure J, and
- b) return-air fans are stopped and supply fans will provide air to the central core as provided in Sentence (2)* of Measure J.

2) The pressurized core shall be tested at or near *grade* in different seasons by a pressure sensor or tracer smoke at intervals not greater than 2 years and after any alteration to the *building*, to ensure that the movement of air is from the pressurized core to the outdoors on all *storeys*.

7.3.12. Measure K

7.3.12.1. Test Procedures

1) Where Measure K is used to limit smoke movement as provided in Commentary C of the “User’s Guide – NBC 1995 Fire Protection, Occupant Safety and Accessibility (Part 3)”,

- a) switches at the central alarm and control facility shall be tested at intervals conforming to Article 7.2.1.1. to ensure that
 - i) the mechanical air supply to vestibules is initiated as provided in Sentences (11)* and (15)* of Measure K, and
 - ii) doors to vestibules, if these are normally held open, will close automatically and remain closed as provided in Sentence (1)* of Measure K, and

- b) *closures* in vent openings to the outdoors in above *grade* stairshafts and in vented vestibules shall be tested to ensure that they can be opened manually and will remain open as provided in Sentences (11)* and (13)* of Measure K.

2) Pressurized vestibules shall be tested in different seasons by a pressure sensor or tracer smoke at intervals not greater than 2 years and after any alteration to the *building*, to ensure that the movement of air is from the vestibules to the *floor areas* on all *storeys*.

7.3.13. Measure L

7.3.13.1. Test Procedures

- 1) Where Measure L is used to limit smoke movement as provided in Commentary C of the “User’s Guide – NBC 1995 Fire Protection, Occupant Safety and Accessibility (Part 3)”,
 - a) switches at the central alarm and control facility shall be tested at intervals conforming to Article 7.2.1.1. to ensure that
 - i) doors to vestibules and areas of refuge, if these are normally held open, will close automatically and remain closed as provided in Sentence (8)* of Measure L, and
 - ii) *closures* in vent openings to the outdoors in elevator shafts that are required by Sentence (16)* of Measure L will open automatically and remain open,
 - b) switches at the central alarm and control facility shall be tested to ensure that the air supply to the areas of refuge, vestibules and below *grade* stairshafts is initiated as provided in Sentences (9),* (10),* (11)* and (14)* of Measure L,
 - c) *closures* in vent openings to the outdoors in below *grade* stairshafts shall be tested to ensure that they open automatically and remain open when the air is being injected into the stairshaft, and
 - d) vent openings to the outdoors in above *grade* stairshafts and at the *street* entrance floor of firefighters’ elevator shafts shall be tested to ensure that they can be opened manually and will remain open as provided in Sentence (13)* of Measure L.
- 2) Vestibules and areas of refuge shall be tested in different seasons by a pressure sensor or tracer smoke at intervals not greater than 2 years and after any alteration to the *building*, to ensure that the movement of air is from the areas of refuge or vestibules to the *floor areas* on all *storeys*.

7.3.14. Measure M

7.3.14.1. Test Procedures

- 1) Where Measure M is used to limit smoke movement as provided in Commentary C of the “User’s Guide – NBC 1995 Fire Protection, Occupant Safety and Accessibility (Part 3)”,
 - a) switches at the central alarm and control facility shall be tested to ensure that the mechanical air supply to below *grade* stairshafts is initiated as provided in Sentence (3)* of Measure M, and
 - b) vent openings to the outdoors in above *grade* stairshafts shall be tested to ensure that they can be opened manually and will remain open as provided in Sentence (2)* of Measure M.

7.3.15. Measure N

7.3.15.1. Test Procedures

- 1) Where Measure N is used to limit smoke movement from one *building* to another of connected *buildings* as provided in Measure N of Commentary C of the “User’s Guide – NBC 1995 Fire Protection, Occupant Safety and Accessibility (Part 3)”,
 - a) switches to initiate the air supply to the vestibules shall be tested to ensure that the air supply is initiated as provided in Sentence (3)* of Measure N, and
 - b) *closures* in vent openings to the outdoors in vestibules shall be tested to ensure that they will open as provided in Sentence (3)* of Measure N.
- 2) Pressurized vestibules shall be tested in different seasons by a pressure sensor or tracer smoke at intervals not greater than 2 years and after any alteration to the *building*, to ensure that the movement of air is from the vestibules to adjacent *floor areas* on all *storeys*.