

The Life Safety Connection



Rolling Door Barriers

Rolling doors can be used to protect openings in fire-rated walls and to separate rooms from the corridor.

Chapters 5 and 13 in NFPA 80, *Fire Doors and Other Opening Protectives*, address requirements for rolling steel service counter fire doors. One of the requirements is that upon activation or release of a fusible link or detector, the door shall close. Often, items are placed on these service counters that inadvertently cause a barrier that prevents the door from closing.

Silverware bins, condiment dispensers, and binders are a few of the items found on counters that would prevent the closure of rolling doors.

If your facility has any fire-rated rolling doors, be sure to keep the area free from obstructions that would prevent the rolling door from closing.

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In This Issue:

Rolling Door Barriers	1
Testing Rolling Fire Doors	1
Sprinkler Fire Pump Inspections and Testing	2
Door Leaf Encroachment	3
(Not So) Great Stuff Fireblock	3
Mixing Fire Caulking	3
Hold-Open Devices	3

Testing Rolling Fire Doors

NFPA 80, *Standard for Fire Doors and Other Protectives*, Section 5.2.14.3 states, "All horizontal or vertical sliding and rolling fire doors must be inspected and tested annually to check for proper operation and full closure." A written record must be maintained and made available to the authority having jurisdiction (AHJ). It is suggested to have a trained door systems technician perform the inspection and drop test of all fire door automatic closing features.

When the annual test for proper operation and full closure is conducted, rolling steel fire doors must be drop-tested twice. The first test is to check for proper operation and full closure. The second test is done to verify that the automatic-closing device has been reset correctly.

If fusible links are present, they must be inspected at least annually for evidence of corrosion, stress/strain, or build-up of particulate matter. Fusible links or other heat-actuated devices and release devices must not be painted. It is recommended to inspect at least every six-months in environments where corrosion, grease, dust, or other conditions compromising fusible link performance may exist.

Weekly and Monthly Inspections and Tests of Automatic Sprinkler System Fire Pumps

Affects: All Facilities with An Automatic Sprinkler Fire Pump

Automatic sprinkler system fire pumps are required to be tested annually. However, the owner's representative (which is usually the facility manager) is required to perform weekly and monthly inspections and tests of the automatic sprinkler system fire pump in accordance with NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*.

Fire Pump Visual Inspections

Visual inspections must be performed weekly for the following conditions:

Pump house

- Heat is adequate, not less than 40°F for pump room with diesel pumps without engine heaters.
- Ventilating louvers are free to operate.

Pump system

- Pump suction and discharge and bypass valves are fully open.
- Piping is free of leaks.
- Suction line pressure gauge reading is within acceptable range.
- System line pressure gauge reading is within acceptable range.
- Suction reservoir is full.
- Wet pit suction screens are unobstructed and in place.
- Waterflow test valves are in the closed position.

Electrical system

- Controller pilot light (power on) is illuminated.
- Transfer switch normal pilot light is illuminated.
- Isolating switch is closed - standby (emergency) source.
- Reverse phase alarm pilot light is off, or normal phase rotation pilot light is on.
- Oil level in vertical motor sight glass is within acceptable range.
- Power to pressure maintenance (jockey) pump is provided.

Diesel engine system

- Fuel tank is at least two-thirds full.
- Controller selector switch is in auto position.
- Batteries' (2) voltage readings are within acceptable range.
- Batteries' (2) charging current readings are within acceptable range.
- Batteries' (2) pilot lights are on or battery failure (2) pilot lights are off.
- All alarm pilot lights are off.
- Engine running time meter is reading.
- Oil level in right angle gear drive is within acceptable range.
- Crankcase oil level is within acceptable range.
- Cooling water level is within acceptable range.
- Electrolyte level in batteries is within acceptable range.
- Battery terminals are free from corrosion.
- Water-jacket heater is operating.

Fire Pump Testing

Testing must be conducted as follows:

- Diesel engine-driven fire pumps shall be operated weekly.
- Electric motor-driven fire pumps shall be operated monthly.

The test of fire pump assemblies is conducted without flowing water. The test must be conducted by starting the pump automatically. The electric pump must run a minimum of 10 minutes. The diesel pump must run a minimum of 30 minutes. A valve installed to open as a safety feature is permitted to discharge water. An automatic timer is also permitted to be substituted for the starting procedure. Qualified operating personnel must be in attendance whenever the pump is in operation.

(continued on page 3)

Weekly and Monthly Inspections (cont'd)

The pertinent visual observations or adjustments specified in the following checklists shall be conducted while the pump is running:

Pump system

- Record the system suction and discharge pressure gauge readings.
- Check the pump packing glands for slight discharge.
- Adjust gland nuts if necessary.
- Check for unusual noise or vibration.
- Check packing boxes, bearings, or pump casing for overheating.
- Record the pump starting pressure.

Electrical system

- Observe the time for motor to accelerate to full speed.
- Record the time controller is on first step (for reduced voltage or reduced current starting).

- Record the time pump runs after starting (for automatic stop controllers).

Diesel engine system

- Observe the time for engine to crank.
- Observe the time for engine to reach running speed.
- Observe the engine oil pressure gauge, speed indicator, water, and oil temperature indicators periodically while engine is running.
- Record any abnormalities.
- Check the heat exchanger for cooling waterflow.

Records must be made for all inspections, tests, and maintenance of the fire pump and be made available to the authority having jurisdiction upon request. Records need to indicate the procedure performed (e.g., inspection, test, or maintenance), who performed the work, the results, and the date.

Door Leaf Encroachment

Corridor doors that swing into the corridor can be an obstruction during times of emergency. Particularly if the door is equipped to only swing 90 degrees.

The *Life Safety Code* addresses this situation when corridor doors swing into the corridor by requiring the doors to project no more than 7 inches from the corridor wall when fully open. Obviously, this is difficult to accomplish when the door is equipped with hinges and/or closers that restrict the door to opening less than 180 degrees.

So, you've found a door in your facility that doesn't comply with the above requirements. What can you do? To start, let's determine why the door does not open to a point where it is no more than 7 inches from the wall.

- Is the door equipped with hinges that prevent the door from opening 180 degrees? If this is the case, can the hinges be replaced with ones that will allow the door to open to the correct point?

- Is the door equipped with a closer that prevents the door from opening 180 degrees? If so, can the closer be adjusted or replaced with one that will allow the door to open to the correct point?
- You determined the hinges and/or closer do not prevent the door from opening fully to the corridor wall. However, is there a handrail located behind the swing of the door that prevents the door from opening all the way to the wall? Can this handrail be removed?
- Finally, if a solution to the existing door cannot be found, you may need to turn the door around or replace it with a new door that opens into the room and not into the corridor.

Please note, these requirements are not intended to apply to the swing of cross-corridor doors, such as smoke barrier doors and horizontal exits.

(Not So) Great Stuff Fireblock

In a fire-rated assembly such as smoke barrier walls and occupancy separation walls, remember any product used to seal openings around penetrations or head-of-wall must be a fireproof product. Fireproof is defined as, “Proof against or resistant to fire”.



Great Stuff Fireblock is an example of a product that has been used inappropriately in health care facilities. Great Stuff Fireblock is just as it states, fire block. Great Stuff is not fireproof. The Great Stuff website mentions the product is intended for residential use and impedes the spread of fire and smoke. It also mentions it is not to be used in firestop applications.

When applying a product to a fire-rated assembly, make sure you are using the right product.

Great Stuff Fireblock is easily recognized by its bright orange color, as seen in the image to the left. If this product has been used in your facility to seal penetrations in fire-rated walls, it must be removed before being caulked with a product listed for use in a fire-rated wall assembly.

Mixing Fire Caulking

Can you mix different brands and types of fire caulking in the same penetration? No Life Safety Code reference addresses this specifically. However, it does not comply with the UL fire-stopping assembly used for that particular penetration.

A proper fire-stop system is an assembly of various components. Assemblies are tested with a single manufacturer’s fire caulking to specific design criteria. Whether the UL assembly uses products from Hilti, 3M, or any other fire caulking company, it will identify what type of fire caulking is to be used, what kind of penetration it is permitted to be used on, and how to apply it. Substituting or mixing other manufacturer’s fire caulking will not fulfill the UL assembly requirements.

No approved UL assembly permits mixing different brands of fire caulk on the same penetration.



Hold-Open Devices

It is desirable to keep doors in exit passageways, stair enclosures, horizontal exits, smoke barriers, and hazardous areas closed at all times to prevent the travel of smoke and fire. Functionally, however, this may not be efficient for free flow of normal traffic and may limit patient/resident observation by staff members. To accommodate these needs, doors in these locations (except boiler rooms, heater rooms, and mechanical equipment rooms) are permitted to be held open by an automatic releasing device that has been tested and is listed for that use. The listed hold-open device must release and cause the door to automatically close upon loss of power to the device, activation of the sprinkler system, or activation of the fire alarm system. During surveys, wedges, chairs, and fabricated hold-open devices have been seen holding doors open, which can lead to a citation.

Newsletter Ideas

If there is a topic you would like to see addressed in future editions of this newsletter, please email us at lsc@nd.gov and we will consider your submission for future publication.