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Code Compliance: Fire Door
Assemblies

February 19, 2021

Question & Answer

Q. Are there cases where an exterior door is ever a fire rated door?

- A. Yes – it is not common, but there are locations where exterior doors require a fire rating. This typically occurs when there is a hazard nearby. For example, if the door opens into an alley, or is close to another building or another portion of the building, it may need to be fire rated to help protect the interior of the building (often a stairwell) from an exterior hazard.

Q. In renovation and end user after market applications, if the owners are applying a continuous hinge that may cover a fire label, are doors required to be re-labeled by an authorized company?

- A. If the existence of the labels can be documented before the continuous hinge is installed, the door should not need to be re-labeled. Take photos of each label and of the overall opening before installing the continuous hinge and maintain that documentation in case it is requested by a fire door assembly inspector or AHJ. Do not field-cut the continuous hinge around the labels to keep the labels visible after installation of the hinge.

Q. Could you please comment on how a building or space being sprinklered might impact the requirements of fire rated openings?

- A. If a building is protected by an automatic sprinkler system, it may reduce the number of required fire door assemblies in the building. However, if there is a required fire door assembly in a sprinklered building, that assembly must comply with the requirements of NFPA 80. There are not two sets of requirements for fire doors – one for buildings with sprinkler systems and one for buildings without. One exception I can think of is temperature rise doors in stairwells ... in sprinklered buildings those doors do not require the temperature rise rating, but all other requirements for rated assemblies apply.

Q. What if the manufacturer of a fire door or frame no longer exists?

- A. When asking for a field modification or trying to find out what is acceptable per a manufacturer's listings, the first step is usually to contact the manufacturer. If the manufacturer no longer exists, NFPA 80 states that the request should go directly to the listing laboratory, such as UL or Intertek.

Q. What is the definition of positive latching?

- A. Positive latching refers to a door equipped with an active latchbolt, which ensures that a door will automatically latch when the door is closed. The purpose of positive latching on a fire door is to keep the door closed even if there is pressure created by the fire and/or fire hoses.

Q. When surveying a building, I tend to see rated doors with non-rated frames or vice-versa. How and why does this happen? This is often undetected and a surprise to an end user or facility manager.

- A. Years ago, it was not uncommon for steel frames to be installed that did not have physical labels. AHJs often allow those frames to remain in existing buildings, as an equivalency. Frames may also have an embossment instead of an actual label, and those are easy to miss – especially once the frame is painted. If the frame is labeled and the door is not, it's possible that a stock frame with a label was installed even though a labeled assembly was not required. It is also possible that the incorrect (non-labeled) door has been installed, or that the door's label was removed or painted.

Q. Did I hear correctly, we can now drill a 2" hole in fire door in the field?

- A. Yes – if allowed by the manufacturer's listings. And because the listings include the installation instructions, I have been told by UL on multiple occasions that if the installation instructions show a round hole up to 2 inches, it can be prepped in the field (or in the factory or shop). There is a blog post about this change to the 2016 edition of NFPA 80 here: <https://idighardware.com/2018/12/new-maximum-hole-size-for-job-site-preps/>

Q. Are we allowed to trim the bottom of a fire rated door where it might be rubbing on carpet?

- A. NFPA 80 does allow a maximum $\frac{3}{4}$ -inch wood and composite door undercutting to be done as a job-site preparation. With that said, there is no way to know how much trimming has already occurred – either at the factory during the pre-fitting process, or in the field. It is best to check with the door manufacturer before trimming the bottom of the door.

Q. If a rated door and frame are installed in a regular opening (where a rating is not required), does it need rated hardware?

- A. If a door or frame has a label, but is installed where a labeled opening protective is not required, the opening does not have to be maintained as a fire door assembly and does not require listed hardware. There has been a lot of discussion about this – particularly in health care facilities, but NFPA 101 was recently clarified. There is an article about it here: <https://idighardware.com/2020/02/decoded-extraneous-labels-on-fire-door-assemblies-april-2020/>.

Q. What are closing latching requirements for smoke label doors?

- A. This is a tough one because there are so many different types of doors that are called "smoke doors" and the requirements vary from one type to the next. This article covers the requirements for each type of smoke door: <https://idighardware.com/2015/11/decoded-smoke-door-requirements-of-the-2015-international-building-code/>.

Q. If a round hole has been drilled in the top of a fire door assembly, can it be plugged or does the frame need full replacement?

- A. It depends on the size of the hole. It may be able to be treated as a fastener hole, which would typically mean filling it with a steel fastener. There are larger thru-bolts and plugs available, but it would be best to check with the frame manufacturer to make sure the repair is compliant with their listings.

Q. Is there a list of inspectors that do the annual inspection?

- A. Good question. I know in the past there were several attempts to start a comprehensive registry for fire door inspectors, but I have not seen one lately. I just did a bit of searching and didn't come up with a comprehensive list. I will dig a little deeper and post any findings on my blog iDigHardware.com.

Q. On stairway doors, we have some that swing in and some that swing out ... is there a standard?

- A. If a door is serving as part of a means of egress for an occupant load of 50 people or more, the IBC and NFPA 101 require the door to swing in the direction of egress (out). In addition, NFPA 101 requires doors serving exit enclosures to swing in the direction of egress regardless of the occupant load.

Q. What if the manufacturer factory-preps the cutout on a continuous hinge to review the fire label similar to an EPT prep?

- A. I think it would be very difficult to properly position the cutout in the right location for the label to be visible, but if the listings of the continuous hinge allow a cutout, it would be acceptable. You may still need documentation showing that it is ok for the hinge to have a cutout.

Q. What is the requirement for 3-hour building separation? On a pair of doors would one door have to have an open back strike and do you know of a hollow metal door company that will do an open back strike in a door?

- A. I think there are some manufacturers whose listings now allow vertical rod fire exit hardware instead of mortise x vertical rod on 3-hour openings. You would have to check with your preferred manufacturer(s) to see if their listings allow vertical rods or the open back strike. This is not specifically addressed in the codes and standards.

Q. What about DonJo plates to replace the cutouts for an electric strike that is abandoned in favor of electric trim?

- A. This would need to be cleared by the frame manufacturer to ensure that it is acceptable per their listings, but I've definitely seen it done with steel plates. Another option is to leave a fail secure electric strike in place so the listings are not an issue (while still adding the fail safe electrified trim), but an AHJ may question the reason for the electric strike so you should document the situation.

Q. What is the most common interface for fire doors utilizing stairwell pressurization?

- A. I'm not sure which interface this question is referring to. The mention of pressurization makes me think it might have something to do with the door's opening force, and that can be a difficult problem without a good solution. If you would like to clarify the question, you can email me at lori.greene@allegion.com.

Q. Can you trim the hinge side of a fire door to add a continuous hinge?

- A. This is something to ask the door manufacturer about. If it is a wood door, there may be enough hinge stile so you can trim a little, but with a metal door it would likely affect the integrity of the door.

Q. Can the label on the frame/jamb be painted if you can still read it?

- A. The listing labs have stated that it's ok for the label to be painted if it is still legible. The old metal labels with raised text can still be read after the first coat of paint or two. With that said, it is possible that an AHJ would not allow the paint.

Q. When you referred to a "lab" did you mean UL?

- A. There are several labs that test fire door assemblies, but this week I spoke with Underwriters Laboratories (UL) and Intertek to clarify how they are incorporating changes to recent editions of NFPA 80.

Q. Where can we learn more about the requirements for stairwell doors?

- A. There is a short video on iDigHardware about stairwell reentry: <https://idighardware.com/2016/08/stairwell-reentry-video/> and there is also a class coming up with the Allegion national trainers. It looks like they will present it on March 17th and again on March 31st: <https://us.allegion.com/en/home/training/virtual-event-calendar.html>