



Don't let the door hit you in the

If you suspect your client was injured by a defective door, here are some preliminary discovery tips

BY MICHAEL PANISH

It happens all too often:

- A child was severely burned when his mother was trapped inside a bathroom in their rented apartment. She couldn't open the door to get to her child. The door lock jammed and the warped door stuck to the frame. Discovery revealed that the plunger mechanism on the bathroom latch-set would not retract and the door had not been properly painted (sealed) on all six sides and had become swollen due to moisture buildup.
- An elderly woman was badly injured in a retirement home when she was hit by a door with a defective door closer. Improper maintenance of the door closer lead to a total failure of the hydraulic system and caused the door to close with such force that the woman broke both her hip and arm.
- A woman was trapped in an egress vestibule adjacent to a stairway for several hours and suffered seizures when she couldn't take her medicine. The problem: Improperly installed panic hardware on the exit door did not function properly.
- A woman in a restaurant bathroom was hit by a door when the door closer slammed the door on her, knocking her into a tile wall and causing a severe head injury. A defective door closer and loose hinges on the door were to blame.

Opening and closing doors

We are all used to opening and closing doors on a daily basis. Unless you encounter a problem with the function of your doors, you probably don't give their operation and component make-up much thought. Doors are actually a pretty simple and early invention. They probably started with a couple of wide planks to

enclose an opening to keep out the weather or separate belongings from the animals. Modern door systems are much more complex but still do the basics. They keep stuff protected from the elements, animals and other people.

A basic door system is made up of a framed opening, hinges, door, and door latch or lock. As separation and security requirements increase, the door system begins to increase in complexity.

Unrated doors, frames and hardware

The basic door is either considered an unrated fire separation component or a rated fire separation component. Unrated doors are installed in locations that do not participate in keeping a fire contained. They are typical in most home locations, with the usual exception of a garage to interior home doorway. Unrated doors may be approved for some exterior exit doorways in commercial buildings, as well as interoffice openings. These doorways do not have the stringent requirements for their hardware, frames or doors that a fire-rated doorway must have.

Fire-rated door systems

Fire rated doors, along with other augmented system components, are able to contain a fire without burning through for a known and tested period of time.

A fire-rated opening is only as good as its weakest component. Therefore, along with a rated door, you need to have a rated frame assembly. There are many types of fire-rated frames in the commercial market. Commercially available standard-rated frames are made from a variety of products. Rating can be achieved for hollow metal steel frames,

aluminum frames, and specially treated wood frames. The correct application and method of attachment of each type of these frames will limit or rate the opening to match the condition and rating of the wall that it is part of.

To assure that the door will not be blown out of the framed opening during a fire, fire-rated hardware must be used in conjunction with the fire-rated frame. Ratings are given to hinges, door locks, panic bars and other locking devices and related components. To increase the effective barrier from a fire, a seal or gasket of some sort must be used around the opening of the door, as well as along the door bottom. In conjunction with these smoke seals there needs to be a non-combustible threshold between the floor and door sweep. These seals are in place to protect the occupants of an adjacent room from smoke or poisonous gases released from a fire, and are designed to allow more time for evacuation from the fire zone.

Let's talk about how to describe a door opening

It is important to accurately explain what a door opening looks like and how it functions over the phone so that both parties are visualizing the same type of opening. If you want to do a little preliminary investigation, here are some things that are helpful in describing the door and frame to your expert. First, measure the opening so that you know the rough height and width of the door. The height measurement is taken between the floor and header piece location where the door rests. The width measurement is taken between the door legs at the widest point where the door rests between the legs of the frame.



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Glossary of Door Terminology

Hinge: a device usually consisting of two leaves interlaced to receive a removable pin allowing for movement of the two leaves so that a positive attachment can be made to two individual stable components.

Closer: A hydraulic or spring loaded device designed to draw, retard or bring together a door to the door framed opening.

Swing: The direction of movement and arced path of travel taken by a door in a framed opening.

Panic device: A piece of hardware designed to work without any special knowledge, activated by applying force to a bar usually positioned horizontally across the face of the door.

Frame: The product bordering a wall opening allowing connection between wall and door.

Lock set: Any lock device that works in concert with a latch and strike plate.

Smoke seal: A material capable of gasketing a framed opening. The material that the seal is composed of is specifically designed to isolate transfer of smoke and poisonous gases emitted by a fire.

Door sweep: A piece of weather-stripping or smoke seal designed to stop air, smoke or other objects from entering underneath a closed door. Acts like a broom to sweep along the floor, sealing the door bottom.

Threshold: The boundary of two areas associated with a door way. The material located directly underneath a closed door. Depending on rating requirements, a variety of materials are used.

Latch: The bolt that physically holds a door closed when engaged in a strike plate working as part of a lock set.

Strike plate: The plate attached to a door frame, with a hole to receive the latch.

A typical commercial door measurement might be 84-inches high by 36-inches wide. The actual door size will be slightly smaller. A residential door, particularly in older homes, may be 80-inches high by 32-inches wide. Obviously, site conditions vary from location to location, but if your investigation finds a door that seems particularly undersized for its location, discuss that with your construction/door expert.

Next, determine if the door opens into the room that you are standing in or away from that room. Does the door swing from the left or right side? Here is a tip on how to figure this out. If you are standing inside a room that the door swings into: Place your back against the door and see if the hinges are on the right side of your body or the left side. If right, you have a right hand door, if left, it is left handed. Remember this saying: “*Your BUTT to the hinge BUTT.*” If you are in a room outside of where the door swings into, it gets a little more confusing as to how to describe the handing, but for simplicity, just look

into the room and see if the door swings to the right or the left. It may be important to know, as your case may “hinge” on this detail.

Examining the door

Now take a closer look at the door. Is it made of wood, metal, glass, plastic laminate, etc.? Does it have a label of any kind indicating a fire rating or special information? Does it have any distinguishing features such as scarring, scratches or damage of any kind? Generally, what condition is the door in? Does it look old or show wear, or is it new and in good shape? Is it painted or varnished on both sides and on all four edges? Is the door dragging on the floor or rubbing on the frame? Swing the door a few times to see if it seems to be working properly. Are there any obstructions to fully opening the door?

Now, check out the hardware on the door. How many hinges are attached to the door and frame? Do the hinges appear to be solidly attached to the door or are the screws loose and pulling out of

the door or frame? Measure what size the hinges are, if you can. Measure from the top of the hinge to the bottom of one hinge only. They should all be the same size. Are they? Note what color they are. Are they rusty, covered in dust or grease, old or new looking? Does the door have any type of knob or lever on it? Does it have a key lock? Is it activated remotely or by some sort of touch pad? Does it have a panic bar exit device on it, or are we looking at a conventional door lock set? Does it have a round orbit type of knob or a lever to activate the lock? Does the door have a closer on it? Is the closer on the inside of the door or the outside of the door? What condition does the overall hardware seem to be in? Are there kick plates or push plates on the door?

Take photographs of the door from both sides and one with the door open showing the frame and hinges and the closer if there is one. Several years ago, an early photograph of a door problem, taken immediately after an injury happened, showed that changes had been made to installed hardware after the accident. It was claimed by the opposition during written discovery and in deposition testimony that no alterations of any kind had been done to the doors since the injury occurred. After a site visit, I was given the early photos to evaluate, and immediately saw that the hardware had all been changed. This revelation led to some pretty interesting settlement negotiations in favor of my client. *So get the pictures right away, if possible!*

As long as you are examining the door, you should take a brief look at the frame and the frame's attachment to the wall. How is the frame oriented to the wall? Is there any open space on either side between the frame and the wall? How close is the door frame to any nearby perpendicular wall? Is the frame metal, wood or some other material? Does it have a fire-rated label or specialty tag on it? Does it appear to be solidly attached to the wall? Are the hinges solidly attached to the frame and door? Does the frame look scratched or worn, and are there grooves



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or dents? Does the frame shake or move when you shut the door?

You are now through with your inspection of the door. You have seen first-hand what the site conditions are and made a preliminary evaluation of the door for yourself.

Summary

While you must rely on your door expert to be thoroughly versed on every aspect of doors, door hardware, and installation elements, your own ability to effectively describe the site shows your

professionalism and concern for your case. If you have any suspicion that the door may be even partially at fault, hiring a competent door expert and capturing critical evidence is one of the most important things that you can do for your client.

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