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Keeping Patients Safe with Door Hardware

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Life safety issues are a hot topic for the door hardware industry. They are a huge topic of interest today, and a brief overview of the history of the industry will show that many technological advances have been made in the interest of life safety. Major examples include panic exit devices, doors that open in the direction of egress, and lighted exit signs.

An unfortunate truth is that life safety developments are something of an arms race in the face of the ever-changing market and new safety concerns. It is almost certain that several decades ago, when levers replaced knobs, safety engineers took a step back and briefly though to themselves, "This is the safest possible installment."

Of course, construction professionals who have daily experience with ADA accessibility laws, NFPA 101, and NFPA 80 are probably thinking the same thing after each code update. Levers are certainly the preferred installation for ADA compliance, as they reduce the need for grasping, twisting or pinching that knobs or thumb-turns require. However, in hospitals and mental health facilities, an extra level of protection is required - ligature-resistant hardware.

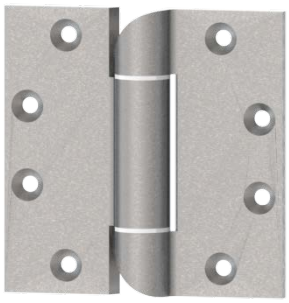
In the June 2016 issue of *Doors + Hardware,* I described the different requirements of ligature-resistant hardware in an article titled, *Keeping Patients Safe Through Life Safety Hardware.* Ligature-resistant hardware must be smooth and sloped so that it does not offer any fastening points - and thus reduce hanging deaths in hospital settings, which could be described as being epidemic levels. A few basic features that define litature-resistant hardware are:

- Recessed trim
- Sloped surfaces
- Concealed mounting
- Internal clutch in lever

A good example of these designs in action is an ligature-resistant hinge; it features smooth caps that offer too much slope for attachment points. Other hardware, like levers, could also feature a clutching mechanism that releases the lever if it receives any weight so that nothing can hang off it.

These features can deny opportunities to patients looking for attachment points in hospital rooms, although they are far from perfect. In years past, hardware design was focused on in-room issues; when a hospital door is closed and patients are alone in their rooms. However, it is extremely important to be flexible and be able to change to meet new challenges, especially in the life safety department.

Hallway safety is now becoming even more important. Travis Worthington, MBA, CFI, CFO, Southeast Region Code Compliance Consultant, DH Pace Company, Inc. recently faced this problem. In a recent mental health installation, a life safety surveyor required angle hinges or continuous hinges to prevent hanging points located within the room on the bathroom and closet doors, but also requested all corridor door hinges be replaced with continuous hinges as well.



This ligature-resistant hinge features smooth caps that offer too much slope for attachment points.

This swing-clear hinge features 90-degree bend that holds the door completely away from the frame when in the open position. This feature provides more space in a narrow frame to reach the 32" clear width required by ADA.

This facility has more than 500 corridor doors, making this change a timely and costly process in an area not even accessible to patients.

When posed with this question, hardware experts were forced to admit this is not a hardware issue. While standard hinges on corridor doors could present a ligature point if the door was not fully shut, the standard operating procedures of the facility - keeping patient doors shut at all times - would remove that risk. The issues facing this facility were purely related to liability. Mistakes can happen, and a slightly ajar door in the wrong room would certainly be a life safety issue.

Exposed hinges in the hallway would also prevent a liability; nurses doctors and security personnel cannot be everywhere at the same time. It was important for this installation to have ligature-resistant hardware on every opening; not just patient rooms.

This question highlighted the most pressing issue regarding life safety - reducing liability. Current ligature - resistant and life safety technology has met many of the challenges of design and installation. Now the challenge is to protect patients from self-harm.

Ligature-resistant hardware is one of the leading points of discussion in the industry, but it is not the only issue. Other ADA accessibility issues are still important and worth discussing. For example, space constraints are requiring creative solutions, especially in urban environments. Efficiency apartments, high rise hotels, and tiny homes are all taking over more market share. In these installations, every inch matters. Architects have to come up with creative solutions like pocket doors, sliding barn doors, and movable walls to create these spaces and still comply with ADA guidelines.

Some examples include:

- **Swing-clear hinges** - These hinges feature a 90-degree bend that holds the door completely away from the frame when in the open position. This feature provides more space in a narrow frame to reach the 32-inch clear width required by the ADA.

- **Hospital push-pull** - This hardware may look strange, but operates with a very simple push/pull system. The large paddles allow people to easily operate the hardware even if they have reaching or manipulation issues or if they simply have their hands full.

- **Security flush pull-cap** - These meet ADA requirements by being flush against the panel of the door, removing any catching hazards, but are also designed to be easy to grasp and use.

- **ADA lever** - This lever for standard locks meet ADA requirements for "no-grasping, twisting, or pinching movements" to operate the opening. It can easily be operated even with an elbow.

Every year, this magazine features an article highlighting life safety and its importance and challenges to the hardware industry. The number of questions we receive about this topic is also proof of how important it is to the day-to-day design challenges of construction professionals.

There is, perhaps, no correct one answer for these questions. Every installation is going to have its issues and applications. Different types of facilities will solve their life safety differently. Our goal is to share these ideas with the design world in the hopes of helping every designer make their buildings safer and more useful.

This lever for standard locks meets ADA requirements for "no grasping, twisting, or pinching movements? to operate the opening. It can easily be operated, even with an elbow.

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