

Door Security + Safety

DHI'S PUBLICATION FOR DOOR SECURITY + SAFETY PROFESSIONALS

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Having It All in Hospitality

How to blend design, performance and regulatory compliance in door hardware. **BY QIANYAN CHENG**

It is human nature to want it all: timeless design, creative functionality and that something extra to make it memorable. Conversations I had with designers and developers from several hospitality specialties revealed some of the challenges in balancing regulatory requirements and the design aesthetics of door hardware.

Every property strives to deliver a specific unique experience for their guests. Hospitality customers require the same specialized attention to design and function.

Beautiful Fire-Rated Openings

Inspired interiors in guest rooms often pair inherited pieces with new modern classics.

With door hardware, the pairing opportunities are with the lever design, rosette sizes and finishes. The combination of the three provide depth and individuality for all the doors in the guest room. But not all doors are equal – some connecting room doors must meet fire code regulations.

Fire-rated latches typically lack the design options of cylindrical or tubular locksets. This was the problem discovered by the designer of the Fairmont Olympic Hotel in Seattle.

The solution was a neoclassic split finish lever on both the bathroom and communicating door with a fire-rated latchset that satisfied both the fire code and the design aesthetic. Everyone agreed the solution was both beautiful and code compliant.

The Four Seasons Hotels and Resorts in Napa, California, was in a similar position but with the added complexity of requiring a card lock component. A split finish designer appearance was added to the fire-rated locksets, and the custom treatment was extended to the card locks to deliver the five-star experience guests expected.

ADA-Compliant Sliding Doors

Barn doors and pocket doors are not just trendy, they also offer incredible space-saving advantages and clean, minimalistic design aesthetics. The typical barn door, however, is not equipped to

Split-finish hardware can meet the aesthetic needs of doors that join two rooms with different designs and color patterns.



meet privacy function requirements without the right door hardware.

Surface mounted or concealed mounted barn door privacy locks are available, but Americans with Disabilities Act (ADA) regulations can influence the execution of the design.

ADA accessibility regulations also require changes to the preparation and hanging of pocket doors. A pocket door will need a minimum of 4 inches of exposed door outside the pocket for ADA compliance and a 2 1/2-inch clearance between any exposed hardware and the door frame. Pocket doors that completely disappear into the wall are not an ADA-compliant option.

Performance With Aesthetics

ANSI/BHMA Grade 1 tests door hardware for one million cycles or uses. That is equivalent to everyone gathered in New York City's Times Square on New Year's Eve walking through your door, one by one. Most of the time, Grade 1 locks are specified but are then paired with residential-grade decorative trim that was not designed to stand up to those usage standards.

PHOTOS COURTESY OF INOX

ADA: No Grasping, No Pinching

The Americans with Disabilities Act (ADA) plays an essential role in the design and specification of accessible openings. In the hospitality sector, at least 4% of the first 100 hotel rooms, and 2% of rooms in excess of 100, must be accessible to both mobility-impaired and deaf or hard of hearing guests. At least 60% of public entrances in newly built facilities must be similarly accessible.

Here is a list of ADA regulations that impact designs:

- A thumbturn compliant with the ADA must not require tight grasping, pinching, or twisting of the wrist to operate.
- For door handles and pulls, the height of the handle must be between a minimum of 34 inches and a maximum of 48 inches from the finished floor. Hardware mounted below 34 inches can block a wheelchair's access, and any hardware mounted above 48 inches makes it harder to reach.
- Maintain a 2 1/2-inch clearance on sliding door pulls.
- No knobs are permitted.
- Thresholds at accessible doorways cannot exceed a half inch in height. Exterior sliding doors are accepted and allowed to have a threshold of up to 3/4 of an inch in height. Raised thresholds must be beveled with a slope no greater than 1-to-2.
- Door and gate closers shall be adjusted so that, from an open position of 90 degrees, the time required to move the door to a position of 12 degrees from the latch is five seconds minimum.*
- Door and gate spring hinges must be adjusted so that, from the open position of 70 degrees, the door or gate shall move to the closed position in 1.5 seconds minimum.**
- Other factors to consider include shorter retractions latches, such as a 28-degree latch retraction, as well as additional visual or audio cues.

Hospitality design that meets ADA compliance provides additional value, care and courtesy, and that is what hospitality is all about.

**2019 California Standards for Accessible Design Guide (effective January 1, 2020), 11B-404.2.8.1 Door closers and gate closers.*

***2019 California Standards for Accessible Design Guide (effective January 1, 2020), 11B-404.2.8.2 Spring hinges.*

The result is nonqualifying hardware that sags or breaks prematurely, resulting in poor guest experiences and maintenance headaches. Most hospitality doors are equipped with a size 1-6 door closer, and the force required to open these types of doors causes residential trim to become loose or sag.

A perfect example of a customer getting caught between design and performance standards was the ornate French trim selected for use at the Cartier Flagship Store on Fifth Avenue in New York City. The lever and rosette used a residential grade spindle and screw set attachment that would have sagged within a month, detracting from the gorgeous design that incorporated mirrors, molding and paneling.

To bridge the gap, a spring lever chassis was forged inside a rosette with a diameter of less than 2 inches and paired with an ANSI Grade 1 three-hour fire-rated mortise lock. The finished product met the 1 million cycles (Grade 1), 50Nm torque strength and 1,600 N Axial load strength, and was visibly seamless with a Louvre-inspired aesthetic capable of standing up to the highest performance.

Abrasion and Corrosion Challenges

A door in a reception area may see more use than any other corporate or public office door. In addition, hotels and resorts are often located next to oceans or at the base of snow-covered mountains. These locations require extra consideration when selecting finishes.

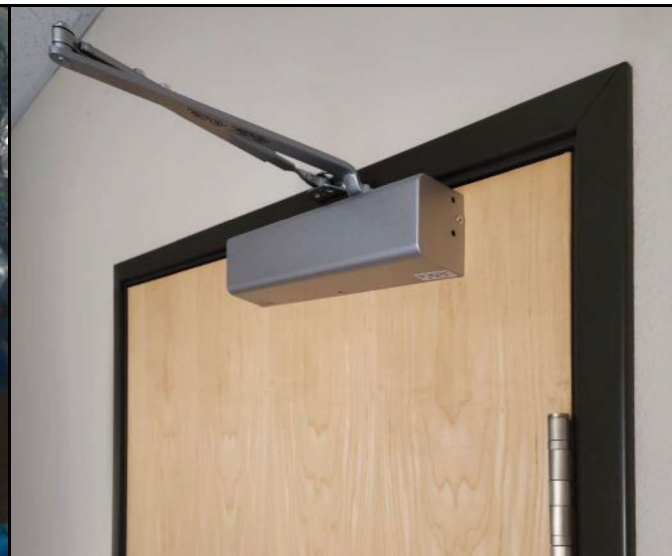
ANSI/BHMA A156.18 has a wide array of listed finishes, and the highest grade suggested on nonferrous material, such as stainless steel, is only a 240-hour salt-spray test. Snowy destination resorts know that salting walkways and streets during peak season can be even more harsh on finishes than a beach resort.

Commonly plated brass or nickel can meet 72 to 120 hours of corrosion testing. However, hospitality environments sometimes need hardware that can sustain a salt-spray test of over 1,000 hours.

Higher grades of stainless steel, such as ANSI 316, are an option for material choices but may not answer all design needs, especially for highly intricate or ornate designs that cannot be manufactured in stainless steel.



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Return-to-Door Requirement in California

Fire codes in California require all door hardware to have a return-to-door (RTD) design that leaves a gap of less than 0.5 inches between door levers and the surface of the door. This is to prevent catching on clothes or hoses during a fire escape. Be sure to have RTD tweaks on the design selected.



Ceramic coating is another option to meet the new color preferences designers have been using in recent years.



An electric sliding door lock.

Forged brass, specialized anti-corrosion plating and physical vapor deposition (PVD) with titanium are some of the new metals providing durability with the broadest metallic color options.

Ceramic coating is another option to meet the new color preferences designers have been using in recent years. Discussing material and finish options in the early stages of a project can help realize fantastic design results with the bonus of anti-abrasion and anti-corrosion properties.

Other Regulatory Considerations

Modern minimalist designs are becoming more popular. However, safety codes require glass shower doors to be made of tempered glass. Often, holes prepared on half-inch tempered glass need to be a minimum of 1/16 of an inch larger than the thickness of the tempered glass to prevent shattering during the baking process.

When a large-scale project uses multiple locking mechanisms for guest rooms, back-of-the-house areas of hotels, restaurants, salons and parking garages, there are a lot of details to consider.

To achieve a consistent aesthetic across the entire project, engage the manufacturer to help solve any issues where an aesthetic vision is not aligning with the regulation.

With the right partners and planning, all locking mechanisms – including mechanical or electrified, swing door or sliding door, fire-rated, non-rated or ADA-compliant – can provide safety and security and align beautifully with every hotelier’s unique vision. +



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