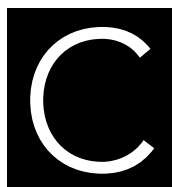


C1 The Key to Closers



Choosing the right door closer for any project can be a challenging process for anyone involved in the specification process. The considerations that need to be taken into account are many and varied, from the client's desires to the designer's intentions to the interpretation and application of a number of acts, codes and performance standards that govern which products can be used in which situations. And, when all of these influences have been balanced, there is still the task of studying the many products that are available to suit the particular purpose and matching these against the selection criteria.

SO, WHERE DOES THE ARCHITECT, DESIGNER OR SPECIFIER START?

Obviously, the project will need to comply with relevant legislation and building codes. Where door closers are concerned, the relevant standards pertain to both the performance of the door closer itself as well as to the situation in which it is used, which, more often than not, relates to the function and performance of the door in a particular location.

In some cases, the requirements of these various codes and standards may appear to be in conflict, leaving the specifier with a dilemma to resolve. An example could be the Americans with Disabilities Act's (ADA) stipulations for accessibility against the life safety and building codes requirements for doors to be closed in case of fire.

Given accurate information on performance requirements for a particular application, the specifier will still find a wide range of products that are not only suitable for the purpose from a technical viewpoint, but can also meet many other requirements which can enhance the project's aesthetic appeal, safety and functionality.

The ADA

The (ADA) places requirements of accessibility on an enormous range of buildings. Title III of the Act defines these as public accommodations (i.e., private entities that own, operate, lease, or lease to places of public accommodation), commercial facilities and private entities that offer certain examinations and courses related to educational and occupational certification.

Public accommodations are private entities that own, operate, lease, or lease to places of public accommodation, which covers the millions of private establishments that we all use on a regular, day-to-day basis, including restaurants, hotels, theaters, convention centers, retail stores, shopping centers, doctors' offices, hospitals, museums, libraries, parks, amusement parks, private schools, day care centers, bowling alleys and many more.

Commercial facilities are non-residential facilities, such as office buildings, factories, and warehouses, whose operations affect commerce.



Concealment enhances aesthetics.

Areas not covered by the Act include entities controlled by religious organizations, including places of worship, private clubs, except to the extent that their facilities are made available to customers or patrons of a place of public accommodation and state and local governments, which are covered by the Department of Justice's title II regulation.

Amongst many other requirements, the Act requires public accommodations to provide goods and services to people with disabilities on an equal basis with the rest of the general public. For existing buildings, the regulations require that, wherever achievable, architectural and communication barriers that are structural must be removed in public areas. Achievability is assessed, on a case-by-case basis, as being easily accomplished and

able to be carried out without too much difficulty or expense. New construction and alterations must be accessible in compliance with the ADA Accessibility Guidelines ADA Standards for Accessible Design.

Not all entrances to or within a building need to comply with the ADA requirements, but designated entrances must. Where there is an apparent conflict between the National Fire Prevention Association (NFPA) Life Safety Code and the ADA requirements, the former will, more often than not, take precedence. So, for example, hardware fitted to a fire door would not have to meet accessibility requirements if its use compromised the Life Safety Code. Local rules may apply according to which state the project is located within and it is advisable to clarify this situation with the presiding authority. Where door closers are

concerned, this situation should not arise and the specifier should be able to find a readily available product that will satisfy the needs for accessibility and fire safety.

Obviously, the specifier needs to consider the opening's functions and how to prioritize them.

When it comes to ensuring that an opening is ADA compliant, there are several requirements stated in the ADA guidelines that need to be taken into consideration:

- The opening should be not less than 32 inches wide (measured from the face of the door to the stop) when the door is opened at 90°.
- From the 90° position, it should take the door closer at least five seconds to return the door to 12° from the latch position.
- For an interior door other than a fire door, the maximum



the device's mechanisms. In such cases, it may be preferable to opt for a power operator that can be used in conjunction with a mechanical door closing device, considerably reducing wear on the operator.

Fire and Performance

The requirements for a door closer's performance on fire doors can vary between different administrative authorities. However, most jurisdictions now recognize National Fire Prevention Association (NFPA) standards and guidelines, which refer to the test criteria laid down in the various standards published by Underwriters Laboratories, i.e., UL standards.

For door closers, the relevant standards are UL10B, UL10C and UL228. In addition, the Builders Hardware Manufacturers Association through its accreditation with the American Standards Institute (ANSI) publishes the *American National Standard for Door Controls—Closers*, ANSI/BHMA 156.4.

UL 10B and UL10C are test standards for complete door assemblies

and do not relate solely to the door closer. UL10B is a negative pressure test, whereas UL10C is a positive pressure test designed to replicate more closely what happens to a door in an actual fire. UL10C verifies that the door and hardware are in compliance with the positive pressure requirements stated in the Uniform Building Code under UBC 7-2.

What the tests seek to ascertain is whether the door closer represents a fire hazard in allowing fire to spread to the non-fire side of the



door. This can occur due to the high temperatures that are experienced during the tests, which can cause hydraulic fluid to expand and escape from inferior closers, or cause the closer cover to melt. The test determines whether the hydraulic fluid could leak enough, or the cover to melt enough, to support combustion and cause the fire to spread to the non-fire side of the door. It is useful to know that some manufacturers supply UL10C approved product as standard, while others charge a premium for the UL10C approved product. If compliance with UL10C is required, this should be considered when comparing alternatives.

UL228 is a test covering the performance of door closers-holders, with or without integral smoke detectors in the case of various types of fire and may be relevant for certain installations where such devices are required.

ANSI/BHMA A156.4 is specifically designed for surface-mounted and concealed door closers. It covers a wide variety of performance criteria, including door weight, door closer efficiencies, closing forces, closing speeds, durability and finishes. Door closers are then graded into one of six sizes according to how they perform against these criteria.

In projects where any of these standards are required, architects and specifiers should make sure that the required standard is explicitly written into the master specification. Assurance of a product's compliance with the standard should be sought from the product manufacturer in the form of a letter of certification, or similar official confirmation. The compliance of the products that are actually supplied and installed

should also be verified. Most compliant products will carry a label or permanent mark confirming this.

Additional Criteria

So, once the door closer has ticked all the boxes where published performance standards are concerned, what else should the architect and specifier be looking for?

Other desirable attributes in door closers stem from the situations in which they might be used. Architects and interior designers requiring a clean, unhindered appearance to the door and overall decorative scheme would do well to consider concealed door closers, which lack the visible control boxes and arms of surface-mounted closers that can look unsightly.

In health care projects, hygiene is particularly important. Designers and specifiers might consider door closers which do not present significant surface areas on which detritus and germs can accumulate.


In areas where the door closer may be susceptible to vandalism—thereby endangering the future performance of the door—concealed closers, especially jamb-mounted designs, do not present a visible temptation to would-be vandals.

Jamb-mounted closers are also enormously popular in secure and psychiatric accommodations where their ability to be mounted towards the bottom of the door means they do not provide a point of suspension for ligatures.

Away from deliberations over product and application, it would not be unreasonable to suggest that careful consideration should be given to the ethos and reputation of the manufacturer.

Reputable manufacturers will invest a great deal of time, effort and financial resources into researching, testing and developing products that continue to meet the ever-changing needs of the market, keeping a watchful eye on new and amended performance standards and ensuring that their product offering continues to meet their requirements.

In addition, the manufacturer's adherence to high standards in the quality of materials, design, engineering and techniques employed in its operations will not only have an impact on whether the door closer can meet the standards, but also on how long it will continue to perform to the expected levels.

Finally, a reputable manufacturer will be able to offer the expert advice on product selection and application that can provide the architect and specifier with the confidence necessary when making the final choice. Choosing a reputable manufacturer will add assurance to the product selection and ensure client satisfaction. 



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