7.3 DOORS - OPENING AND CLOSING SYSTEMS

THIS SECTION DEALS WITH THE DESIGN, SELECTION AND OPERATION OF DOOR FURNITURE AND FITTINGS INCLUDING MECHANICAL AND ELECTRICALLY POWERED OPENING AND CLOSING DEVICES.

PERFORMANCE OBJECTIVE

Door furniture and fittings (manual or electrically powered) shall be appropriate to the door characteristics, location and function such that their operability does not present an immediate barrier to users.

7.3.1 MANDATORY PROVISIONS

The design of opening and closing systems will satisfy the performance objectives if:

DOOR FURNITURE

1. Manually operated doors with latches are fitted with lever handles, as shown in Figure 49, which can be operated with one hand or a closed fist.
2. The size and position of door handles is as shown in Figure 49 & 50 and they contrast visually with the door.
3. D-pull handles are used only on doors without a latch and are located on the pull side of the door only (see figure 50).
4. Keyways to locks are positioned above the lever handle or a minimum of 72mm below the lever handle.
5. Where turns or snibs are used that are operable by people with limited manual dexterity.
6. Where door bolts are fitted they are easy to operate and are one of the following:

   a) A slide-action flush bolt with an easy-grip knob.

   b) A lever-action flush bolt.

   c) An espagnolette bolt operated by a single-lever handle positioned between 900mm and 1050mm above finished floor level.
7. Emergency exit devices are capable of being released with a force no greater than:

   a) 80N for horizontal push bar emergency exit devices.

   b) 70N for lever handle emergency exit devices.

   c) 150N for push pad emergency exit devices.
8. Horizontal grabrails are provided to outward-opening doors, mounted at a height of between 800mm and 1050mm and the door width is increased to maintain the required effective door width.

SELF-CLOSING AND HOLD-OPEN DEVICES

1. Self-closing devices are appropriate for the size and weight of the door, its location and the resistance of its component parts and fittings.
2. High-efficiency self-closing devices are used and their point of maximum closing force is located betweenzero and fifteen degrees.
3. The force required to opena door fitted with a self-closing device is no greater than 30N from the closed position up to 30° of opening and no greater than 22.5N from 30 to 60 ° of opening.
4. Any self-closing devices are site adjustable and are subject to a regular maintenance regime.
5. The effective clear opening width of the door is not reduced by any backcheck facility where fitted.
6. The use of self-closing devices is limited to where there is a mandatory requirement for their installation unless it can be demonstrated that there is a benefit to users and their use does not impose an unnecessary impediment on accessibility.
7. Where in buildings, with fully automatic fire detection and alarm systems, hold-open devices are used to improve the accessibility of circulation routes.

POWER-OPERATED DOORS

1. A direct, clear and level approach is provided to power operated doors.
2. Power operated doors are not located at the top or bottom of ramps or sloping floors and power operated swing doors do not open across any adjacent access route.
3. The sensors on an automatically activated powered door ensure that the door/s are fully open before an approaching person is closer than 1400mm to the door opening.
4. Automatic doors allow sufficient time for safe entry and exit.
5. Where manual controls are provided for powered doors they are mounted between 750mm and 1000mm above finished floor level.
6. All power operated doors are provided with presence and motion sensor detectors for safety.
7. All power operated doors can be manually operated in the event of power failure.
8. Keypads are large, easy to operate and be provided with tactile identification.

7.3.2 MANDATORY DESIGN OBJECTIVES

GENERAL

1. The accessibility of an appropriately designed door depends to a great extent on the selection of door furniture, fittings and equipment. It is important therefore that the design of a door as an element is not considered in isolation and vice versa the furniture, fittings and equipment.
2. Hinges should be selected to suit the mass of the door and potential additional loading such as from a person using the door as a temporary support. Low friction hinges should you be used to minimise opening and closing forces.
3. Pivot hinges should be considered where there is a need to be able to open a door in the reverse direction in the event of an emergency.
4. Consideration should be given to the use of modified strike plates with a gravity cam which will enable a door to fully close with less force.
5. Door fittings should be regularly maintained to ensure that the resistance to opening does not increase from that originally designed.
6. The overuse of self-closing devices can present an unwelcome barrier to all building users. A poorly specified and / or poorly adjusted self-closing device can make a door a barrier to even fit adults.
7. Where fire regulations require the extensive use of self-closing devices along circulation routes consideration should be given to the use of hold-open devices linked to a fully automatic fire detection and alarm system. However, accessibility should also be considered in an emergency situation when the doors have been automatically closed.
8. Swing-free hold-open devices are suitable for inward opening room doors but not on circulation routes.
9. Power operated opening and closing doors should be a first choice with respect to main entrance doors as they provide ease of access to all users whilst maintaining internal and external environmental separation.
10. Where access needs to be controlled for security reasons the use of proximity readers provides a user friendly solution for building staff but may have to be supplemented by additional access systems to accommodate visitors.
11. In situations where passing pedestrians may inadvertently activate sensor activated doors on a continuous basis the use of manually operated automatic doors should be considered.

    The needs of all building users and any security requirements should be considered when selecting controls for manually activated doors.