

# Mounting Heights for Door Hardware



From the well-known blog [idighardware.com](http://idighardware.com), Lori Greene brings some much-needed clarity to codes.

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**E**ACH OF THE CODES AND STANDARDS that we typically refer to for requirements pertaining to door openings contains slightly different language regarding mounting heights of operating hardware. Generally, hardware must be mounted between 34" and 48" above the finished floor or ground, with exceptions for: (a) locks used only for security purposes, and (b) operating hardware on doors leading to swimming pools. But it's important to understand how the standards differ in order to fine-tune the requirements for a specific project depending on the code or standard in use.

The International Building Code (all editions to date) requires operating hardware for most egress doors to be mounted between 34" and 48" above the finished floor (AFF). Locks used only for security purposes and not used for normal operation are excluded. Beginning with the 2006 edition, there is an exception for doors and gates leading to swimming pools, spas and hot tubs: release devices for operable hardware may be mounted 54" maximum above the finished floor.

The language pertaining to "locks used only for security purposes" isn't very specific, which leaves this up to interpretation by the Authority Having

Jurisdiction (AHJ). The IBC Commentary gives an example of an unframed glass door at the front of a tenant space in a mall, with a lock in the bottom rail. Deadbolts mounted at other heights may be accepted by the AHJ, depending on the occupancy type.

The exception in the IBC for pool doors is meant to address the requirements in some codes that call for pool doors and gates to have latching hardware mounted between 48" and 54" AFF so that a small child cannot operate it. Check your state or local codes to determine whether doors to indoor pools require a special mounting height or if there are other requirements for this hardware.

## IBC 2009:

**1008.1.9.2 Hardware height. Door handles, pulls, latches, locks and other operating devices shall be installed 34 inches (864 mm) minimum and 48 inches (1219 mm) maximum above the finished floor. Locks used only for security purposes and not used for normal operation are permitted at any height.**

**Exception: Access doors or gates in barrier walls and fences protecting pools, spas and hot tubs shall be permitted to have operable parts of the release of latch on self-latching devices at 54 inches**

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**(1370 mm) maximum above the finished floor or ground, provided the self-latching devices are not also self-locking devices operated by means of a key, electronic opener or integral combination lock.**

The ICC Standard A117.1 – *Accessible and Usable Buildings and Facilities* (2009) contains virtually identical language to the first paragraph from the IBC, although it does not currently include an exception for swimming pool doors and gates. The IBC 2009 Commentary addresses this by stating that **“the 54-inch (1372 mm) maximum height is intended to override the maximum 48-inch (1219 mm) reach range in ICC A117.1.”**


The 2010 ADA *Standards for Accessible Design* (effective 03/15/2012) include an important change relative to the mounting height of hardware. In the previous edition of the ADA standard, section 4.13.9 included this statement: **“Hardware required for accessible door passage shall be mounted no higher than 48 in (1220 mm) above finished floor.”** The standard did not define the low limit of the hardware mounting height; it only required a mounting location of 48" or less above the floor. This could be interpreted to mean that hardware mounted very low would be acceptable on an accessible door, even though hardware in that location may be impossible for someone using a wheelchair to operate.

The 2010 standard contains language very similar to the IBC, requiring operable hardware to be mounted between 34" and 48" AFF, and also includes the exception for swimming pools. Instead of an exception for locks used only for security purposes, the ADA attempts to more clearly define locations where existing doors may have hardware mounted outside of the 34" to 48" range: **“Existing locks shall be permitted in any location at existing glazed doors**

**without stiles, existing overhead rolling doors or grilles, and similar existing doors or grilles that are designed with locks that are activated only at the top or bottom rail.”**

NFPA 101 – *The Life Safety Code* requires the releasing mechanism for any latch, other than existing installations, to be located between 34" and 48" AFF. When an existing security device is allowed on individual living units and guest rooms of residential occupancies, that device must be located not more than 60" AFF. Existing panic hardware may be mounted between 30" and 48" AFF, and the releasing mechanism for other latching hardware may be mounted below 48" AFF. The low limit for existing hardware is not specifically called out in the newer editions of NFPA 101, and older editions of NFPA 101 only included a maximum mounting height of 48" AFF as well.

For recommended mounting locations of hardware, consult the Steel Door Institute (SDI) publication ANSI/SDI A250.8 – *Recommended Specifications for Standard Steel Doors and Frames*. Table 5 includes recommended locations for most products. Hardware not included in the table should be mounted per the manufacturer’s instructions.

It’s important to check your local codes for differing requirements. For example, in Massachusetts, the range for accessible hardware is 36" to 48" AFF instead of 34" to 48". The AHJ should be consulted for official interpretations when necessary. 

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Table 5 – Hardware Locations		
Locks, Latches, Roller Latches and Double Handle Sets	38" – 42" (965 mm – 1067 mm) Centerline of Lock Strike from Bottom of Frame	
Rim and Mortise Panic Devices		
Cylindrical and Mortise Deadlocks <sup>(1)</sup>	48" (1219 mm) to Centerline of Strike from Bottom of Frame	
Push Plates	Centerline 45" (1143 mm) from Bottom of Frame	
Pull Plates	Centerline of Grip @ 42" (1067 mm) from Bottom of Frame	
Combination Push Bar	Centerline of 42" (1067 mm) from Bottom of Frame	
Hospital Arm Pull	Centerline of Lower Base is 45" (1143 mm) from Bottom of Frame with Grip Open at Bottom	
Hinges	Top	Up to 11¾" (298.5 mm) from Rabbet Section of Frame to Centerline of Hinge
	Bottom	Up to 13" (330.2 mm) from Bottom of Frame to Centerline of Hinge
	Intermediate	Equally Spaced Between Top and Bottom Hinges

<sup>(1)</sup> Cylindrical and Mortise Deadlock strikes shall be located at 48" (1219mm) from the bottom of the frame unless otherwise specified.