

Choosing the Right Classroom Locks

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The Differences in Lock Functionality

School security has never been more in the spotlight. Recent events have highlighted how essential door locks and hardware are to ensuring the safety of students, teachers and staff at K-12 schools and universities. While there are many types of locks and lock functions available for use on classrooms, each has its own set of benefits and challenges. In addition, security requirements vary from school to school, and opening to opening.

So how do you choose? Those who aren't security professionals may struggle to understand the nuances of lock types and their appropriateness for their specific classroom environments. To help, let's first take a look at the different types of functionality available.

In hardware speak, the way a lock "behaves" or how a door is operated by a user is called the lock's function. Most lock functions have been standardized by the American National Standards Institute (ANSI) to make them easier to understand and compare. All manufacturer's door hardware, including exit devices and bored and mortise locks, offer at least some of these standardized functions. In addition, hardware manufacturers produce "custom" functions that are built on ANSI standard functions and provide different features for specific applications. The standards that govern lock functionality are ANSI/BHMA A156.2 (bored) and ANSI/BHMA A156.13 (mortise). These two standards detail every function by number and include a description of operation. While bored locks and mortise locks both offer some of the same functions, there are minor differences in their operation due to the lock type.

Mechanical locks have traditionally been the norm in classrooms and there are a number of "typical" functions used to secure doors. The function selected is unique to the security needs of the opening and fits within the overall needs of the facility. No one function is right for every classroom in every school.

Classroom Function

Historically, classrooms used the **classroom function** (ANSI mortise F05/bored F84). In this function, the door is lockable only by key from the outside (hallway). Typically, a staff member unlocks the door in the morning and puts the lockset into “passage mode.” The advantages of this function are that during the school day, students and staff have easy access to the classroom (unlocked) and there is no chance of accidentally locking the door. However, in the event of a lockdown the teacher or one of the staff has to go into the hallway to lock the door, putting himself or herself at risk and using valuable seconds to lock the door. In addition, the key holder must be present to lock the door.

Classroom Security Function

A **classroom security function** (ANSI mortise F09/bored F88) allows the door to be locked by key on the inside, removing the risk of a teacher having to enter the hallway to lock the door. This presents a different challenge – if the exterior lever is locked (by the interior cylinder) during the school day, it could create interruptions in the class as the teacher would need to let students into the room. Also, as with the classroom function described above, the key holder must be present to lock the door.

Office Function

An **office function** (ANSI bored F109) lock has a turn button on the inside that locks and unlocks the outside lever. A key in the outside lever retracts the latch but does not unlock the lever. The benefit of this function is that anyone can lock the door from the inside. In the event of an emergency, if a teacher or keyholder is not present, anyone within the classroom can lock the door from the inside to remain safe.

However, this also means that a student can lock the door as a prank and keep people out. Schools must also weigh the benefits of this function with the understanding that a student (or intruder) could theoretically force others into a room and lock the door. Another concern with this function is the way the turn button operates. Turn buttons secure the door in two ways. By depressing the button, the outside lever is locked until the inside lever is rotated. If the turn button is depressed AND turned, the outside lever remains locked even after the inside lever is rotated. If a student panics and runs out of a classroom during a lockdown event and the turn button was depressed but not turned, the door would then be unlocked.

Corridor/Dormitory Function

Locks with a **corridor/dormitory function** (ANSI bored F90) will lock or unlock a door using either the key on the outside or a pushbutton on the inside. Depressing the inside pushbutton locks the door, which can then be unlocked by simply rotating the inside lever or by closing the door when exiting the room. A door that is locked by key from the outside can only be unlocked by using a key from the outside as well. This type of lock can help prevent lockouts, but as with the office function (F109) lock, a panicked student running from a classroom will unlock the door.

Storeroom Function

On a **storeroom function** (ANSI mortise F07/bored F86) the outside lever is always locked. There is no question about whether a door is locked or not; if the door is closed, it is locked. This eliminates human error during an emergency. The disadvantage here is that teachers need to carry their classroom key with them at all times to access the classroom and every time someone wants to enter the classroom when the door is closed the teacher will be interrupted. The local AHJ should be consulted if considering this function to ensure it meets local fire and emergency egress codes.

Classroom Security Intruder Function

The **classroom security intruder** (ANSI mortise F32, F33, F34) functions are available for mortise locks. They operate like the classroom security function previously mentioned but in the case of the F33 and F34 functions, also have the added strength of a deadbolt. Again, in the case of a lockdown, the staff can use their key on the inside of the room without having to go into the hallway and expose themselves to potential harm. This prevents students from locking the door from the inside with a turn or pushbutton. A consideration with these functions is that only a teacher or other staff member with an issued key will be able to secure a classroom.

In addition, some manufacturers' classroom intruder functions offer an optional visual confirmation of the lock status: secure or unsecure. This indicator prevents teachers from asking “Did I turn the key the right way to lock the door?” and allows for a quick response in a crisis.



How Keying Affects Security

Many of the functions being selected for today's schools have a cylinder on the inside AND a cylinder on the outside of the lock. How cylinders are keyed (i.e. can the inside key unlock the outside lever?) can also provide another level of security and convenience for faculty and staff. How teachers move between rooms during the day and the level of security required by the school determines whether the inside cylinders and outside cylinders are keyed alike or different.

Within K-6 elementary school, most teachers are assigned one classroom. In these situations, a teacher could be issued one key that operates both the interior and exterior cylinders for his or her classroom. It is also a common practice to key elementary school classrooms alike thereby allowing a teacher to lock any classroom with the same key. In the event of an emergency, this could be beneficial

because teachers could enter the nearest classroom and secure it rather than having to travel to their assigned room.

In some cases, a custodian or staff member unlocks all classrooms at the beginning of the day and locks them at the end of the day. In this scenario interior and exterior cylinders would be keyed differently and teachers would only have an interior classroom key. This would prevent entry by an intruder into a locked room by taking a key from a teacher.

If a master key and key control system are in use, there should be clear key control policies. Those responsible should know where all of your keys are and the implementation of procedures to prevent unauthorized distribution are essential. Any gray areas in the system must be addressed immediately.

Making the Grade: How Locks are Graded and Why It Matters

Just as schools grade their students, locks are evaluated and given a grade. The Builders Hardware Manufacturers Association (BHMA) is the only organization accredited by ANSI to develop and maintain performance standards for architectural hardware. To achieve a specific grade qualification, performance requirements for cycle tests, strength tests, operational tests and security tests must be achieved.

There are three grade levels: Grades 1, 2 and 3, with Grade 1 being the highest. Because locks and hardware contribute to life safety and security in schools, it is essential to use BHMA certified Grade 1 locks. This ensures locks meet the highest quality standards through independent testing and provides peace of mind for students, faculty and parents.



Electronic Access Control?

But what about eliminating the use of keys altogether? Electronic access control (EAC) locks, whether standalone or part of a networked system, offer advantages over standard mechanical locks.

- Allow access by means of a PIN code or prox card, eliminating or greatly reducing the number of metal keys in use and the risk of lost or stolen keys
- Give different levels of access to individuals, even controlling the times of day a person has access to a particular classroom or area
- Provide an audit trail with useful information like whose credential was used to open a door and when
- Authorize and deauthorize any credential from a central location, instantly
- Implement lockdown
 - Use a radio frequency (RF) fob, similar to a car remote, to perform localized lockdown on stand-alone electronic locks by pressing a panic button
 - Press a button on the secure side of IP-enabled WiFi and PoE locks, and Aperio wireless locks to perform localized lockdown
 - Remotely lock classroom doors from a central location using IN100 Aperio wireless locks

No matter what type of lock is installed, it's essential that all hardware conforms to emergency egress and fire codes, and is approved by the local Authority Having Jurisdiction (AHJ). Schools sometimes violate building codes – often unintentionally and without realizing it. For example, propping open a fire-rated door with a doorstop or by other means eliminates the security the lock provides and also violates fire codes. And while it seems harmless, multiple instances of these types of oversights throughout a facility can open the door to intruders and eliminate measures designed to provide a safe emergency egress path.



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