

High Security Padlock Definition

Andy Oniszczyk – 1/22/2011

All locks protect against some degree of forced and surreptitious entry. Forced entry involves the use of tools and leaves clear evidence that the lock had been compromised, such as a cut shackle. Surreptitious entry involves picking, bump-keying, shimmying, rapping, and unauthorized key duplication that leave no obvious evidence that the lock has been compromised.

For all practical purposes, a padlock is considered to be high security if it protects to *some* degree against *every* one of the most common seven forced and surreptitious attacks. These attacks, a mix of forced (1-5) and surreptitious (6 & 7) entry are:

1. **Impacting the body with a hammer or similar tool** until the shackle pulls out of the body or the lock body disintegrates. Padlocks that have ball bearing locking bolts and a solid steel body are protected against a hammer attack.
2. **Prying the shackle from the lock body** or twisting it until it breaks with a pry bar or similar tool. Padlocks that have ball bearing locking bolts are protected against prying, and padlocks that have a shrouded or concealed shackle are protected against twisting the shackle.
3. **Cutting or shearing the shackle** with a hacksaw or bolt cutters until the shackle separates from the body. Padlocks that have either shrouded shackles, concealed shackles (such as the kind found in "puck" padlocks), or very thick shackles (1/2" diameter or greater) are protected against shackle cutting or shearing.
4. **Drilling the lock's cylinder mechanism** until it can be turned into the open position. Padlocks that have cylinders with steel pins, anti-drill pins, or a spinner disk over the face of the cylinder are protected against drilling. Padlocks that have high security cylinders such as Medeco are protected against drilling. American Lock made padlocks with steel pin tumblers to make drilling the cylinder open much more difficult.
5. **Prying the cylinder from the lock body** with a dent puller or screwdriver. Padlocks that have a bolted cylinder retainer plate or cylinders that are loaded from the top of the padlock body are protected against having their cylinders pulled out.
6. **Picking the padlock cylinder** with manual picks or bump keys, manipulating the lock bolts open through the keyhole, or opening the padlock with an unauthorized duplicate key. Padlocks that have high security cylinders are protected against picking or other surreptitious manipulation as well as unauthorized key duplication.
7. **Rapping or shimmying the padlock bolts open**. Padlocks that have ball bearing locking or deadlocking (and not spring loaded) bolts are protected against rapping and shimmying. Most padlocks today are not susceptible to this form of attack except for very inexpensive ones.

An example of a high security padlock that defends against all seven common attacks is the American Lock 747. It has a large solid steel body and a shackle that locks with ball bearings to make pounding and prying the lock extremely difficult. This lock has steel shoulders (called shrouds) that extend past the body to surround the shackle and protect it against the largest bolt cutters available. The fact that the steel shroud and lock body is hardened also makes it unfeasible to cut through it with a hacksaw. The cylinder is retained by a thick plate dovetailed into the bottom of the lock that has a hole through it just big enough to allow the key to enter the lock and turn; not only does this plate make it practically impossible to tear out the cylinder from the bottom of the lock body, but it also inhibits drilling. Finally,

American Lock sold the 747 model with a cylinder that had drill protection pins inserted on each side of the keyway for additional drill protection. The cylinder also had serrated pins that were loaded into the pin chambers to discourage manual picking. Finally, the cylinder's keyway was restricted and the key blanks for this model were available only to qualified locksmiths so that unauthorized copies were difficult to obtain.