

A-A-1951
August 13, 1982

COMMERCIAL ITEM DESCRIPTION

PADLOCK (HIGH SECURITY)

The General Services Administration has authorized the use of this commercial item description.

This description covers a high security key operated dead bolt padlock.

Salient characteristics:

Case. Shall be either of solid or laminated construction, not exceeding 20 cu. in. (1.22 cm³) in total volume. Shall have no openings other than the regular keyway and the shackle openings, except that drainage holes and plugged assembly holes are permissible, providing they do not provide access to tumblers, locking bolts or plug retainers.

Mechanism. Shall be key operated with a minimum of 100,000 different independent secure key changes in any one contract. Shall be of the pin tumbler type, level tumbler, side bar, or any other type or combination of types. Lock cylinder shall be removable and interchangeable with other locks by same manufacturer. It shall be removable only by means of control key or fasteners access only when lock is open. Locking bolt shall be "dead bolt" type. It shall not depend on spring action to hold it in locked position.

Other. A chain, no less than 9 in. (228.6 mm) in length of compatible material to the case, shall be furnished with each lock. Each lock shall be furnished with two keys, one for locking and unlocking and the other for locking and unlocking as well as control of the cylinder. Locks shall be lubricated with graphite, disulfide, or equivalent.

Performance tests. Padlocks shall withstand testing as follows:

Corrosion. Padlocks and keys, including chains, shall be subject to 96 hours of testing in accordance with ASTM B 117 before proceeding with the tests hereinafter specified. The padlocks, keys and chains shall show no evidence of deterioration or corrosion.

Surreptitious Entry. The padlock shall withstand efforts to surreptitiously neutralize it in less than 15 minutes. Surreptitious neutralization includes picking, shimmying, bypassing, impressioning and other similar methods that are not destructive in nature. The lock must operate in a normal method after surreptitious neutralization.

Key integrity. Padlocks shall be tested for key integrity by using all the keys from all the locks in a sample. Each key shall be inserted into each sample lock full depth. Keys shall be manipulated by applying torsional pressure as they are slowly withdrawn from the key way. Each padlock shall withstand the test for a minimum of 1 minute per key. Any padlock that can be opened by a key from any other padlock shall constitute failure.

Operational. The padlock shall be operated a minimum of 10 times. The padlock shall show no indication of wedging of the key in the key way or the need for excessive pressure to turn the cylinder and unlock the shackle. The control key test shall be repeated 10 times, removing and replacing the cylinder after each cycle, with no malfunction.

Jar. The shackle of the padlock shall be fastened to a solid upright member by means of a hasp suitable for use with a high security padlock. The padlock case shall be held loosely with one hand and the padlock shall be struck with a substantial blow from a hammer or mallet weighing no more than 16 oz. (.5 kg) from a starting point 18 in. (457.2 mm) from the padlock. The padlock shall be released immediately before the blow so as to jar the lock forcibly against the upright. This procedure shall be repeated 40 times, striking the padlock from different directions. Padlocks shall not be jarred open and shall not be damaged in any manner to the extent that their protective function is defeated.

Impact. The padlock shall be dropped from a minimum height of 6 ft. (1.8 m) onto a concrete floor. Twenty drops shall be conducted on each sample, 10 with the shackle in the open position and 10 with the shackle in the locked position. Two drops in the open position and two in the locked position shall be so conducted that the initial impact is directly on the shackle. The remaining drops shall be conducted in proper attitudes to allow various portions of the case to strike the floor first. Padlocks shall suffer no damage which impairs normal operation and no parts (including shackle) shall be dislodged or fractured when subjected to this test.

Cycle test.

- a. Prior to conducting the cycle test, insert key into padlock cylinder 25 times and manually rotate both clockwise and counterclockwise (if possible, otherwise in the direction of opening) after each insertion.
- b. In a test, fixture which will horizontally hold the padlock and mechanically operate the key, activate through a cycle of:
 - 1) Fully inserting the key in the keyway
 - 2) Rotating the key and cylinder plug the necessary number of degrees to open the padlock either clockwise or counterclockwise
 - 3) Returning the key and cylinder plug to the home position
 - 4) Retracting the key from the cylinder plug until the key tip no longer touches the front tumbler
 - 5) Reengaging the shackle to the locked position

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c. Operate for 100,000 cycles at a rate not to exceed 10 cycles per minute. The control key shall be used to remove and replace the cylinder before and after the 100,000 cycle test. Failure of the padlock to operate at the conclusion of the test, inability of the control key to remove and replace the cylinder or key breakage shall constitute failure.

d. Following this test, subject the padlock again to the surreptitious entry test.

Cylinder interchangeability. Padlock cylinders shall be interchanged and operated not less than 5 cycles of locking and unlocking. Failure of any cylinder to properly fit, interchange or unlock the shackle shall constitute failure.

Tension. The padlock shall be held in a device bearing against the top surface of the case without interfering with the shackle. A 9,000 lb (4082.33 kgs) load shall be applied at the rate of 60 lb. (27.22 kgs) per second along the vertical center line of the padlock. Pulling of the shackle out of the locked position or the appearance of flaws or cracks on the shackle or case or failure of the lock to operate after the test shall constitute failure of this test.

Forced entry. The padlock shall be fastened to an upright (see jar test). The padlock shall be locked. Any combination of tools similar to the following but not exceeding 20 lbs. (9.1 kgs) in weight with the restrictions noted shall be used in an attempt to defeat the padlock:

- a. Bolt cutters (manual)
- b. Saws and drills (manual or battery-powered)
- c. Heating equipment (producing temperatures less than 1200° F)
- d. Hammer (manual or battery-powered)
- e. Torque levers (manual)
- f. Chisels, jimmy and wrecking bars (manual)
- g. Chemicals
- h. Common hand tools

Defeat of the padlock in less than 15 minutes accumulated work time for the padlock shall constitute failure.

Workmanship. Padlocks, keys, chains, and attachments shall be free of sharp edges, burrs, and slivers, and shall have no defects which will affect use and serviceability.

The issue of ASTM B 117 in effect on the date of the solicitation shall be used to determine compliance with these requirements.

Regulatory requirements. The offeror/contractor is encouraged to use recovered materials in accordance with Public Law 94-580 to the maximum extent practicable.

Preservation, packaging, packing, labeling, and marking. The preservation, packaging, packing, labeling, and marking shall be as specified in the contract or order.

ASTM standards are available from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

MILITARY INTERESTS:

Military Coordinating Activity

Army - ME

Custodians

Army - GL
Navy - YD
Air Force - 99

Review Activities

Army - GL
Navy - YD, MC
Air Force - 99

User Activities

Army - CR, FR

PREPARING ACTIVITY:

GSA - FSS