

The Builders Hardware Manufacturing Association
BHMA Hardware Highlights

For
ANSI/BHMA A156.24 - 2012
DELAYED EGRESS LOCKING SYSTEMS

A156.24-2012 covers products used in connection with conventional exit devices or locks causing the doors to remain locked after releasing actuation for a predetermined length of time. Performance criteria are included for functional, cycle, operational, fail-safe and overload requirements. For further information about electromagnetic locks, consult the full standard, ANSI/BHMA A156.24 for Delayed Egress Locking Systems.

BHMA has created this series of *Hardware Highlights* to provide useful, accessible information about Builders Hardware for architects, specifiers, builders, building code officials – anyone with an interest in the devices that hang, control, secure, and trim the doors.

BHMA is the North American Trade Association, which represents almost all the North American manufacturers of Builders Hardware. One of their main activities since 1983 has been the development and maintenance of ANSI-approved standards for 35 separate product categories.

Product Performance – Purchasers of Bored Locks certified to A156.24 (<http://www.buildershardware.com/cpd>) can be assured their products will perform to their expectations.

Below are an explanation and some examples of the evaluations conducted for certification:

DURABILITY	STRENGTH	EGRESS UNDER LOAD	ELECTRICAL
The delayed egress product is required to be capable of passing the test described below for 10,000 cycles: The door shall be opened by actuating the lock equipped with a 15 second maximum delay feature including a zero-to-three-second pre-delay. The door shall be allowed to close by action of the door closer. Electrically re-lock the system so that the time delay is operative. This constitutes one cycle.	Strength is evaluated with the following test: Apply and maintain 400 lbf. to the door approximately 3 in. (76mm) from the latch edge and 40 in. (1020 mm) from the floor in the direction of door swing and then actuate the delayed egress locking system. The load shall be maintained for a minimum of five seconds. The load shall be applied until the 15 or 30 second delay period has completed. The device shall function normally after release of the force.	The standard requires a test to release under load: With the door closed and the delayed egress locking system in the armed state, actuate the delay period. Maintain 250 lbf. for a minimum ten seconds in the direction of door swing, until the delay period ends. Failure occurs if the door opens prior to the expiration of the delay period or, does not open under load upon expiration of the delay period.	Two more tests verify electrical requirements: Operational Voltage Test tests the delayed egress locking system including electrical components at $\pm 15\%$ of the rated line voltage to verify the operation. Immunity Requirements (ESD) All system components which are subject to contact during normal operation shall meet the requirements of IEC 61000-4-2, level 4.

Building Codes: Builders Hardware provides several attributes that are essential to building safety and performance, including egress and fire protection. BHMA delayed egress locks are designed to comply with all applicable requirements; they are carefully regulated and defined and the standard works in conjunction with the building code to ensure proper application and operation. Examples are shown here:

- When a force, not to exceed 15 lbf (67 N), is continuously applied on the door or release device, an irreversible process shall be initiated after the nuisance delay, that will allow the door to be opened after not more than 15 seconds, or 30 seconds as permitted by the AHJ.

- The releasing mechanism of delayed egress locking systems shall require only one motion to initiate the irreversible process of opening, and the method of operation shall be obvious in all lighting conditions.

Sustainability: Locksets contribute to building sustainability through their verified durability, as well as material characteristics such as recycled content and recyclability. The reliable closing and sealing of openings can also contribute to energy conservation. BHMA has developed Product Category Rules, which will further define sustainability requirements and guide life cycle assessments and environmental performance declarations.