

Understanding BHMA grading & testing

When you specify door hardware, you want to know that it will function properly and provide safe ingress and egress. One way to determine how well door hardware is likely to operate is by comparing it to door hardware standards developed for the industry.

The American National Standards Institute (ANSI) and Builders Hardware Manufacturers Association (BHMA) have developed durability, strength and performance standards for every type of door hardware on the market. To receive ANSI/BHMA certification, the products must undergo a series of rigorous operational and security tests to comply with the standards. Dozens of tests are performed on each product. They may include:

- Tension loading
- Impact/force
- Deadbolt torque
- Retraction deadbolt
- Pound exertion
- Warped door
- Bolt strength
- Vertical load test
- Security
- Finish

Products that receive ANSI/BHMA certification are designated as Grade 1, Grade 2 or Grade 3. The product grades indicate progressive levels of performance.

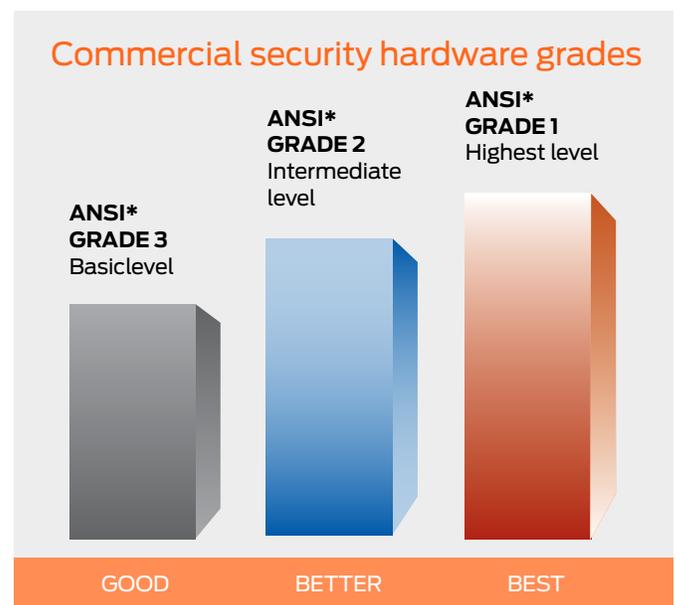
Did you know?

To make sure ANSI/BHMA-certified products continue to comply with standards, random samples are audited.

“Think of them in terms of good, better, best,” says T.J. Gottwalt, AHC, CDC, FDAI, CSI, CCPR, a specification manager with Allegion “Grade 1—the best rating—represents the highest level of performance. It is designed for heavy-duty applications and mostly includes commercial hardware.”

Gottwalt points out that it’s important to understand that two different product categories may share Grade 1 status, but that doesn’t mean they were evaluated by the same criteria.

“The standards for door closers are different from exit devices,” he explains. “And even within the same category—locks, for example—there are differences in criteria. A mortise lock and a cylindrical lock are not judged by the same standards, nor should they be.”





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Grade 2 or Grade 3 products must also pass certain standards tests, but the requirements are less stringent. These products are generally used at a lesser frequency and in less abusive environments.

The key differentiator: cycle tests

The most significant difference between the ANSI/BHMA grades is the cycle test. Cycle tests specify how many cycles a product can endure while still maintaining its functionality. The result provides a better understanding of longevity, wear and tear, operational capacity and security.

“This is the test architects and builders are most interested in,” Gottwalt says. “They look to the cycle test to get the best picture of real-world application.”

Below are the required cycle tests by grade for the main door hardware categories.

ANSI/BHMA CYCLE TESTS

	GRADE 1	GRADE 2	GRADE 3
Butt Hinges (A156.1)	2,500,000	1,500,000	350,000
Bored Locks (A156.2)	1,000,000	400,000	200,000
Mortise Locks (A156.13)	1,000,000	800,000	800,000
Door Controls (A156.4)*	2,000,000	1,000,000	500,000
Exit Devices (A156.3)	500,000	250,000	100,000

* = without back check

Did you know?

ANSI/BHMA certification requires third-party certification. An independent lab or testing facility must perform follow-up tests required by the product standard.

Beyond the standards

While ANSI/BHMA reviews the industry standards every few years, the technology, manufacturing practices and materials often outpace the standards. As a result, some manufacturers have developed products that not only meet, but exceed Grade 1 standards.

Take LCN’s 4040 series closer, for example. This door closer has been independently tested to 10 million cycles—well above the BHMA/ANSI cycle test standard of 2,000,000 operating cycles!

“The ANSI/BHMA standards are an important guide, but I always recommend that architects and builders review manufacturer recommendations as well,” Gottwalt says. “Manufacturers go through extensive testing—including independent testing—and know where their products should and shouldn’t be applied.

Consulting knowledgeable industry experts is critical as well. “A hardware consultant can help you select the proper products, in terms of door design, strength, reinforcement, casing and locking devices,” Gottwalt says, “and can identify compatible products and appropriate grade levels. Trust a Certified Construction Product Representative (CCPR) to give you honest recommendations.”

About Allegion

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