All ANSI/BHMA standards for builders hardware begin with A156 and are arranged by section for each type of product. Each product is given a five digit Identification Number preceded by a letter. The prefix letter refers to the BHMA Product Section, the 1st digit describes the base material, the 2nd digit denotes the product type, the 3rd and 4th digits describe the specific function and the 5th digit is the product Grade. Each ANSI/BHMA Product Standard explains the numbering that applies to that particular product category.

Example (from A156.4 Door Controls – Closers)

C02011

C = Product Section (Closers)
0 = Base Material (“0” is for Optional)
2 = Product Type (Surface Closer)
01 = Function (Regular Arm)
1 = Grade (Grade 1)

The number C02011 describes a Grade 1 regular arm mounted surface closer that can be made of aluminum or cast iron. If only cast iron closers are acceptable, C12011 would be specified. The “I” in this instance denotes cast iron material. Or for lighter duty applications, C02012 describes a Grade 2 closer. Grades are defined by progressively more stringent testing with Grade 1 being the highest. The Identification Number allows the specifier to select products based on the function of the opening and anticipated use (or abuse) by Grade. Refer to the complete Standard for the entire numbering system definitions.

Benefits

Specifiers use the ANSI/BHMA Product Identification Numbers to simplify the specification. Rather than listing acceptable products by manufacturer’s name and part number, the BHMA number identifies products in a more generic fashion and refers to an entire database of certified products. It also establishes a consistent and recognized benchmark of quality and performance of the product. A basis for comparison of acceptable products to products seeking acceptance is also created. This ultimately leads to improved product quality as manufacturers strive to produce hardware able to meet or exceed the Standards. Additionally, manufacturers can introduce Grade 2 or Grade 3 products at significantly lower cost for use on less frequently used openings.

Performance Tests

Generally, builders hardware is subject to three main types of testing. Cycle tests operate the item repeatedly to determine longevity, strength tests determine resistance to abuse and salt spray tests show how the finish will hold up in harsh conditions. Additionally, each product section has its own specific series of performance tests. Here are some examples of operational and performance test requirements for different product sections:

**ANSI/BHMA A156.1-2000**

*American National Standard for Butts and Hinges*

<table>
<thead>
<tr>
<th>TEST</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle</td>
<td>2,500,000</td>
<td>1,500,000</td>
<td>350,000</td>
</tr>
<tr>
<td>Hinge Pin Rise</td>
<td>¼ in (6.4 mm)</td>
<td>¼ in (6.4 mm)</td>
<td>¼ in (6.4 mm)</td>
</tr>
<tr>
<td>Hinge Play</td>
<td>.015 in (0.38 mm)</td>
<td>.015 in (0.38 mm)</td>
<td>.015 in (0.38 mm)</td>
</tr>
<tr>
<td>Vertical Wear</td>
<td>.020 in (0.5 mm)</td>
<td>.030 in (0.76 mm)</td>
<td>.105 in (2.67 mm)</td>
</tr>
</tbody>
</table>

The most significant difference between the Grades is the cycle test. For a high traffic door the specifier would likely choose the Grade 1 because of its much greater longevity. Grade 2 or Grade 3 could be selected for lighter duty applications. Some of the other parameters are the same from one grade to another indicating that even though the lower grades need not endure as many cycles, they still need to perform the same as Grade 1 in some areas.
# Tech Tip

**ANSI/BHMA A156.2-2003**

American National Standard for Bored and Preassembled Locks & Latches

<table>
<thead>
<tr>
<th>TEST</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle</td>
<td>800,000</td>
<td>400,000</td>
<td>200,000</td>
</tr>
</tbody>
</table>
| Strength Test
  Torque min, levers | 700 lbf-in (74 Nm) | 450 lbf-in (50 Nm) | 225 lbf-in (25 Nm) |
| Operational Tests
  Lever torque max | 28 lbf-in (3Nm) | 28 lbf-in (3Nm) | 28 lbf-in (3Nm) |
  Key torque max | 9 lbf-in (1 Nm) | 9 lbf-in (1 Nm) | 9 lbf-in (1 Nm) |
| Finish Test
  Salt Spray–Organic coatings on levers, knobs, roses and escutcheons | 96 Hours | 96 Hours | 96 Hours |

For lever handle bored locks, the cycle test and the strength tests are increasingly more stringent for the higher Grades, but operational requirements, such as the amount of force needed to turn the key or operate the lever, remain constant as does the finish test.

**ANSI/BHMA A156.8-2005**

American National Standard for Door Controls - Overhead Stops and Holders

<table>
<thead>
<tr>
<th>TEST</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle</td>
<td>250,000</td>
<td>100,000</td>
<td>50,000</td>
</tr>
<tr>
<td>Force</td>
<td>300 lbf (1334 N)</td>
<td>200 lbf (890 N)</td>
<td>100 lbf (445 N)</td>
</tr>
<tr>
<td>Salt Spray</td>
<td>48 hours</td>
<td>24 hours</td>
<td>12 hours</td>
</tr>
</tbody>
</table>

The various Grades of Overhead Stops and Holders have different requirements in cycle, strength and finish. Here the specifier has multiple choices based on the specific product application.

The above examples are excerpts from selected Product Standards. For the full descriptions of requirements of refer to the complete ANSI/BHMA A156 Standards. For the following exercise, it would be helpful to refer to the Standards or go to BHMA’s web site at www.buildershardware.com

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**To acquire CEP points, answer the following questions:**

1. For cylindrical lever locks, how many more cycles are required for Grade 1 compared with Grade 2?

2. The entrance doors to a seaside resort require the use of overhead stops. What Grade should be specified and why?

3. How can you determine if a specific product from a manufacturer has been certified?

4. What does the last digit in a BHMA Product Identification Number indicate?

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You will earn 3 CEP points by reading the article and answering the problems. Upon completion, copy or detach this page, fill in the form below, and submit your answers by mailing or faxing the page to DHI.

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**Answers**

**Door and Hardware Institute**

Education and Technical Services Department

14150 Newbrook Drive, Suite 200, Chantilly, VA 20151-2232

703/222-2010; Fax: 703/222-2410

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**Name:** ___________________________ **DHI ID number:** ___________________________

**Address:** ____________________________________________________________

**City:** ___________________________ **State:** ___________________________ **Zip:** ___________________________

**Phone:** ___________________________

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Retain a copy of this exercise for your Continuing Education renewal application. Answers to these problems will be posted on our website (www.dhi.org) on the first day of the next month following the issue month of the magazine.
Product Performance Standards

To acquire CEP points, answer the following questions:

1. For cylindrical lever locks, how many more cycles are required for Grade 1 compared with Grade 2?
   400,000

2. The entrance doors to a seaside resort require the use of overhead stops. What Grade should be specified and why?
   Grade 1 for durability (exterior) and finish (salt from ocean)

3. How can you determine if a specific product from a manufacturer has been certified?
   It will be listed in the Certified Products Directory

4. What does the last digit in a BHMA Product Identification Number indicate?
   Grade

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