Are mechanical keying systems a thing of the past? With new security possibilities available via access control and electrified hardware, do we even need to address a building’s keys and cylinders?

These questions can be answered with another question…. What happens when the power goes out? The tried and true mechanical key cylinder and its associated keying system are as important as ever to the function of any building with doors and locks. In fact, many electrified solutions require additional key cylinders to operate the switches and power supplies of today’s security systems.

In September, 2007 ANSI/BHMA A156.28—2007 American National Standard for Recommended Practices for Mechanical Keying Systems was published. According to the Scope, the purpose of this document is “to provide guidelines for the essential keying conference, establish good practices for effective key management, and give building owners the ability to extend the life of keying systems to meet future demands.”

This standard includes general information and definitions of terms commonly used pertaining to all aspects of Keying Systems. It defines Master Keying as “the process of combining a group of locks or cylinders, so that each is operated by its own change key as well as by a master key for the entire group.” It should be noted that an unavoidable reduction in physical security accompanies a master key system. The standard states: “This process makes it more susceptible to picking through shear line manipulation, and by increasing the number of keys which operate it.”

A master key (or grand master and above) system increases the convenience but decreases the security of a given cylinder by the same proportion. What this means is that a cylinder becomes less secure as additional keys are designed to operate it.

The standard covers four important concepts that will serve as a guide to obtain the greatest degree of manageability of the key system throughout the life of the building. These are addressed in Chapters 4 through 7.

Chapter 4—System Planning begins with the Keying Conference. Each door should be assigned a unique number or identification code that will be used from this point on. Generally, the door numbers assigned by the architect on the floor plans are used. The conference needs to be attended at least by the key system supplier and the end user. Among the goals of this conference are:

A. Determine the level of key restriction required
B. Identify who will be responsible for these decisions
C. Show the scope of job
D. Anticipate and identify future expansion
E. Set levels of authority for different areas and keys
F. Determine whether service will be performed by the manufacturer, end user or by a locksmith.
G. Determine levels of keying
H. Decide on service options;
I. Establish timetables for keying.

This may seem like a tall order, but as the standard says, it is essential to get this done before the cylinders and keys can be manufactured. The remainder of Chapter 4 consists of examples of Master Key Schematics, or symbols and notations, that will help visualize the hierarchy of the proposed key system. It begins with a simple Master Key System showing the industry recognized symbols for Change Keys, Master Keys and Single Keys.

Following are examples for Grand Master Key and Great Grand Master Key systems. These diagrams follow the information found in the DHI Handbook-Keying Systems and Nomenclature as published by the Door and Hardware Institute.

Chapter 5—System Development covers the physical properties of the keys and cylinders. Article 5.0 states: “Each master key system should be custom generated based on the end user’s specific requirements. Generic
master key systems taken directly from training materials or third party publications are not acceptable.” Article 5.1 gives advice pertaining to the Top Master Key (TMK). It is wise to follow the instructions of Article 5.1.1 which states: “To enhance pick resistance and prevent worn master keys from being pulled out while the cylinder plug is unlocked and turned, do not use declining step keys and keys whose cuts have little or no variation in depth.” Declining steps are defined in Chapter 3—Definitions as: “A key whose cuts are progressively deeper from bow to tip.”

Chapter 6—Key Management is the next step. This includes guidelines for storing keys, methods to track issued keys as well as dealing with damaged or returned keys in an organized manner.

Chapter 7—Maintenance is the final piece to this standard and likely the longest in duration. This chapter suggests that a System Maintenance Policy be developed and enforced to keep the system in proper working order and to prevent compromise.

This standard can be viewed in its entirety at: www.buildershardware.com

To acquire CEP points, answer the following questions:

1. Mechanical Keys and Cylinders have become obsolete.  
   TRUE  _______  FALSE  _______

2. Name at least four goals of the Keying Conference  
   ______________________________________________________________
   ______________________________________________________________
   ______________________________________________________________

3. What is the purpose of ANSI/BHMA A156.28?  
   ______________________________________________________________

4. Rank these systems in order of greatest security (1 highest—3 lowest  
   _______GMK  _______MK  _______GGMK

To acquire CEP points, answer the following questions: You will need to reference the Website noted above for assistance with the questions.

1. Mechanical Keys and Cylinders have become obsolete.  
   TRUE  _______  FALSE  _______

2. Name at least four goals of the Keying Conference  
   ______________________________________________________________
   ______________________________________________________________
   ______________________________________________________________

3. What is the purpose of ANSI/BHMA A156.28?  
   ______________________________________________________________

4. Rank these systems in order of greatest security (1 highest—3 lowest  
   _______GMK  _______MK  _______GGMK

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.

Answers

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Keying Systems

To acquire CEP points, answer the following questions:

1. Mechanical Keys and Cylinders have become obsolete.  FALSE

2. Name at least four goals of the Keying Conference
   Any 4 of these
   • Determine the level of key restriction required
   • Identify who will be responsible for these decisions
   • Show the scope of job
   • Anticipate and identify future expansion
   • Set levels of authority for different areas and keys
   • Determine whether service will be performed by the manufacturer, end user or by a locksmith.
   • Determine levels of keying

3. What is the purpose of ANSI/BHMA A156.28?
   To provide guidelines for the essential keying conference, establish good practices for effective key management, and give building owners the ability to extend the life of keying systems to meet future demands.

4. Rank these systems in order of greatest security
   (1 highest—3 lowest)
   2 GMK  1 MK  3 GGMK

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