Building a better door schedule

Anyone who has ever written a specification for door hardware knows it can be a tedious task. Code requirements that apply to door openings are constantly changing and can vary between jurisdictions. Without specific details, you risk not getting what you need to ensure an opening operates exactly as intended.

T.J. Gottwalt, AHC/CDC, FDAI, CCPR, CM-BIM, a specification manager with Allegion, shares some of the "must-includes" for each of the three parts of a door hardware specification section: Part 1–General, Part 2–Products and Part 3–Execution.

Part 1: General

"Part 1 of the specification section is primarily procedural in nature," Gottwalt explains. "It really lays out the general requirements for the door hardware and specific requirements that address the entire section."

Part 1 must-includes:

- Specific submittal requirements of the items you want submitted, such as riser diagrams or the hardware schedule in vertical format

- Requirements for specific items you want included in the hardware submittals, such as operational descriptions for any hardware groups containing electrical hardware

- Specific warranty requirements unique to the door hardware

- Contract closeout submittals, such as final hardware schedule, final keying schedule, as-installed wiring diagrams for each power-connected opening, installation instructions, and operating and maintenance manuals

- Quality assurance requirements for manufacturers, suppliers and installers that are acceptable

Part 2: Products

"Part 2 is all about the products," Gottwalt says. "It's about everything that is part of an opening—every opening throughout a building. Needless to say, it's the one part of the door hardware specification section that requires the most editing."

Part 2 must-includes:

- Paragraphs describing the specific requirements (performance, certifications and standards) for each product

- Detailed description of each product and requirements

"Door hardware products usually go into either Division 8 or Division 28," says Gottwalt.

Division 8:
08 71 00–Door Hardware
08 74 00–Access Control Hardware

Division 28
28 10 00–Electronic Access Control and Intrusion Detection
28 13 00–Access Control

Anything that touches the opening (lock, reader, door position switch, etc.) is specified in Division 8. Anything that supports access control of the opening—but doesn't need to be directly at the opening—is specified in Division 28. This includes the system software, interface modules and "front end" of the access control system. This is, however, changing with the adoption of MasterFormat 2016 (MF2016) by architectural firms. MF2016 has added a section for the hardware schedule (08 06 70), which means that even items that touch the door can be specified in Division 28 if they are part of the access control system.

Every door schedule, he says, should include the following:

1 Door number: Each door needs a unique identifier or mark. Gottwalt cautions not to confuse door number with door type.

2 Door type: This is the design of the door, such as "half glass" or "narrow lite."

3 Opening width and height: The door width affects many hardware decisions, including the weight of hinges and the sizing of kick plates, thresholds, weather stripping, overhead stops and panic hardware.

4 Door height: Door height directly affects the number of hinges or intermediate pivots; the length of continuous hinges and removable mullions; as well as decisions about vertical rod panic hardware, top flush bolts and perimeter gasketing.

5 Door thickness: The typical thickness for commercial applications is 1-3/4". While some door hardware is adjustable for door thickness, most are not.

6 Single/pair: Gottwalt commonly illustrates the importance of this information by explaining that a door opening listed as 4'-0" wide could be interpreted two different ways:
- As a wide single door
- As a pair of narrow 2'-0" doors

7 Door material: The most common materials for doors are:
- HM: Hollow metal
- WD: Wood
- AL: Aluminum
- FRP: Fiberglass reinforced polymer
- GL: Glass
- SS: Stainless steel
- EX: Existing
- LPWD: Laminated plastic wood door

8 Frame type: Frame type is usually designated with a letter and number combination to indicate an elevation of the frame type.

9 Frame material: The materials for frames are essentially the same as what is used for doors.

10 Details: Details should include information about the head, jamb and sill conditions. This helps the hardware consultant, as well as the door and frame suppliers, determine the proper products to apply at each particular opening.

11 Fire rating: This element is commonly misnamed or labeled using an outdated fire rating method. Today, Gottwalt says, the preferred fire rating is measured in minutes, such as 20, 45, 60, 90, 180, etc. Non-rated openings can be designated by "0", "NON" or simply leaving the section blank.

12 **Hardware group:** This is the number designation that relates to a set of hardware found in specification Section 087100, Door Hardware. "Developing accurate hardware sets depends on having complete door schedule information," Gottwalt explains.

13 **Elevations:** These are important to note, as hardware selection can be based on stile/rail dimensions. By including elevations, the hardware consultant is able to identify if there will be any lite/lock conflicts, or bottom rails that don't meet accessibility requirements.

14 **Remarks or notes column:** Extra remarks or details help the hardware consultant to identify any items that require special consideration, such as:
a. Access control
b. Automatic operators
c. Lead-lined doors
d. Acoustic (STC rated) doors
e. Hold opens

Part 3: Execution
"This is where you get down to the nitty-gritty of how you want all the door hardware installed," Gottwalt says.

Part 3 must-includes:
- Examination for adverse conditions
- Installation of hardware
- Field quality control post installation
- Plans for adjusting, cleaning and protection

Allegion has a team of more than 100 specification writers located throughout the United States who would be happy to assist on your next project. Contact an Allegion specification writer, or check out the www.iDigHardware.com blog for information and updates on door hardware codes.