



**1300 Sumner Avenue
Cleveland, Ohio 44115-2851
Phone: 216-241-7333 • Fax: 216-241-0105
E-mail: dasma@dasma.com**

Rolling Sheet Doors - Accessibility In Self-Service Storage Facilities

Introduction

The purpose of this document is to overview ICC/ANSI A117.1-2003 requirements for accessibility as applied to rolling sheet doors installed in self-service storage facility applications. This overview considers the following scenario:

1. A rolling sheet door as the only means of accessing a particular storage space.
2. A particular storage space required to be accessible, based on International Building Code provisions.
3. No other type of door able to be provided to meet accessibility requirements.

Applicable A117.1 Content

Rolling sheet doors are typically upward acting doors. Although ICC/ANSI A117.1-2003 does not directly reference these types of doors, a number of provisions for the standard can be applied. Such provisions include the following:

308.2.1 Unobstructed

Where a forward reach is unobstructed, the high forward reach shall be 48 inches (1220 mm) maximum and the low forward reach shall be 15 inches (380 mm) minimum above the floor.

308.3.1 Unobstructed

Where a clear floor space allows a parallel approach to an element and the side reach is unobstructed, the high reach shall be 48 inches (1220 mm) maximum and the low side reach shall be 15 inches (380 mm) above the floor.

309.3 Height

Operable parts shall be placed within one or more of the reach ranges specified in Section 308.

309.4 Operation

Operable parts shall be operable with one hand and shall not require tight grasping, pinching or twisting of the wrist. The force required to activate operable parts shall be 5.0 pounds (22.2 N) maximum.

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This Technical Data Sheet was prepared by the members of DASMA's Rolling Door Division Technical Committee. DASMA is a trade association comprising manufacturers of rolling doors, fire doors, grilles, counter shutters, sheet doors, and related products; upward-acting residential and commercial garage doors; operating devices for garage doors and gates, sensing devices, and electronic remote controls for garage doors and gate operators; as well as companies that manufacture or supply either raw materials or significant components used in the manufacture and installation of the Active Members' products.

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404.2.2 Clear Width

Doorways shall have a clear opening width of 32 inches (815 mm) minimum. Clear opening width of doorways with swinging doors shall be measured between the face of door and stop, with the door open 90 degrees. Openings, doors and doorways without doors more than 24 inches (610 mm) in depth shall provide a clear opening width of 36 inches (915 mm) minimum. There shall be no projections into the clear opening width lower than 34 inches (865 mm) above the floor. Projections into the clear opening width between 34 inches (865 mm) and 80 inches (2030 mm) above the floor shall not exceed 4 inches (100 mm).

404.2.6 Door Hardware

Handles, pulls, latches, locks, and other operable parts on accessible doors shall have a shape that is easy to grasp with one hand and does not require tight grasping, pinching, or twisting of the wrist to operate. Operable parts of such hardware shall be 34 inches (865 mm) minimum and 48 inches (1220 mm) maximum above the floor. Where sliding doors are in the fully open position, operating hardware shall be exposed and usable from both sides.

404.2.8 Door-Opening Force

Fire doors shall have the minimum opening force allowable by the appropriate administrative authority. The force for pushing or pulling open doors other than fire doors shall be as follows:

- (1) Interior hinged door: 5.0 pounds (22.2 N) maximum.
- (2) Sliding or folding door: 5.0 pounds (22.2 N) maximum.

These forces do not apply to the force required to retract latch bolts or disengage other devices that hold the door in a closed position.

Manually Operated Rolling Sheet Doors

Per the A117.1 standard, which has been interpreted as applying to rolling sheet doors, the opening force is required to not exceed 5 pound. As a result, because of operational characteristics inherent in rolling sheet doors, the force limit for closing such doors may exceed 5 pounds*.

Figures 1, 2 and 3 illustrate applications for a door fully closed, in the process of opening, and fully open respectively. The applicable door hardware needed to operate the door is in the form of a handle, a strap and a rope. Each of these items should be of a material durable to withstand repeated usage, accommodate temperature and humidity variations, and fastened securely to allow the manual door operating force to be successfully and safely applied.

Motor Operated Rolling Sheet Doors

There are advantages of motor operated rolling sheet doors from an accessibility standpoint, including ease of activating operable parts and non-applicability of force limits. Motor operated doors should accommodate emergency manual operation in the event of a loss of power. The opening force for emergency manual operation should not exceed 25 pounds, which is consistent with egress requirements. The means of disconnecting motor operation should be clearly marked, and accessible.

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Conclusion

It should be noted that identification of applicable ICC/ANSI A117.1 provisions, and interpretations thereof, are subject to review by local authorities having jurisdiction, who are the sole and final determiners of code compliance for specific applications.

* An ICC staff interpretation of A117.1 Section 404.2.8 stated that the Section in question limits the opening force, and that there is nothing specified regarding any type of limitation being imposed on the force needed to close the door. The interpretation notes that the rolling sheet door would have to be installed at a location where such type of door would be found acceptable by the authority having jurisdiction.

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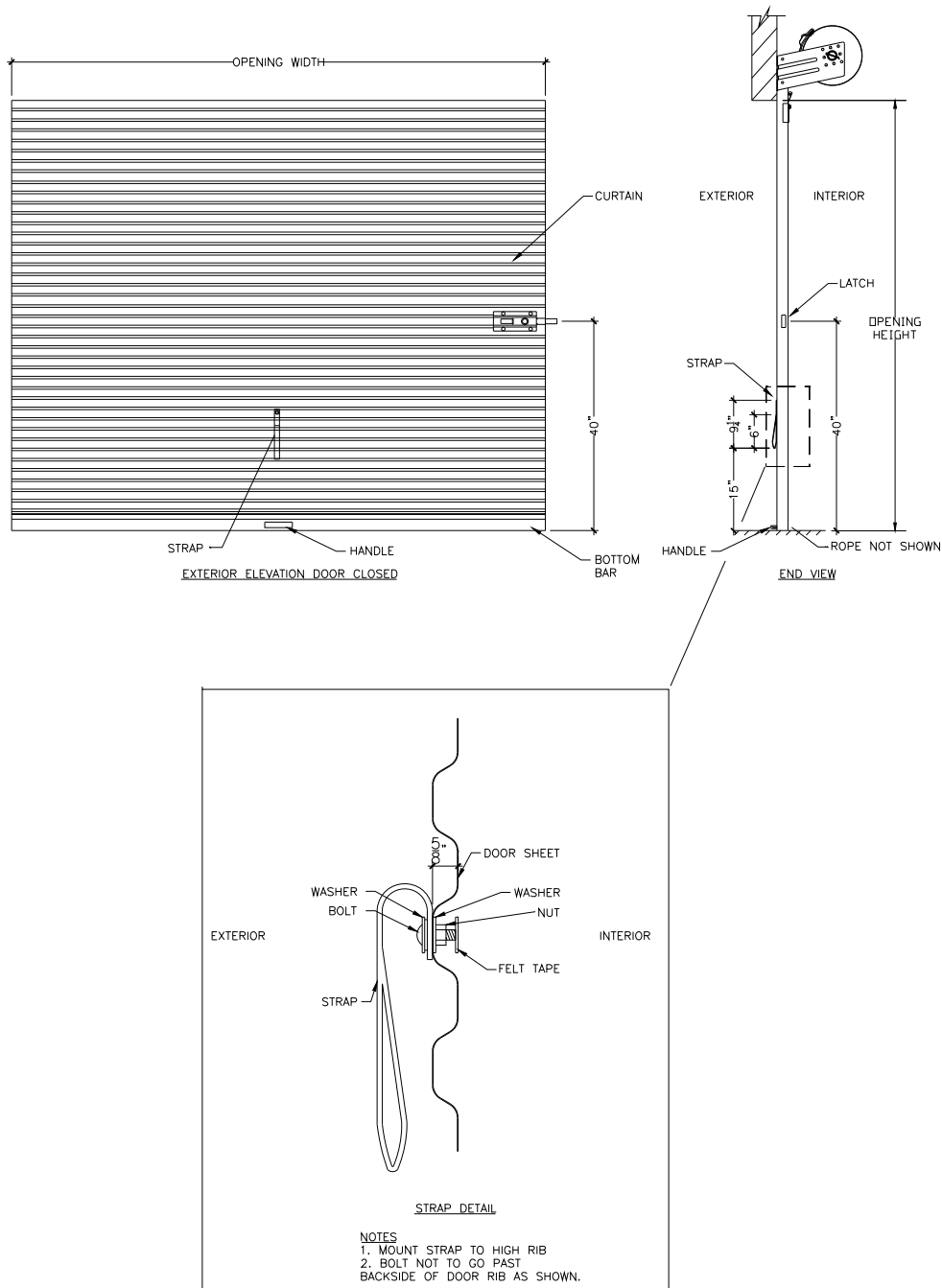
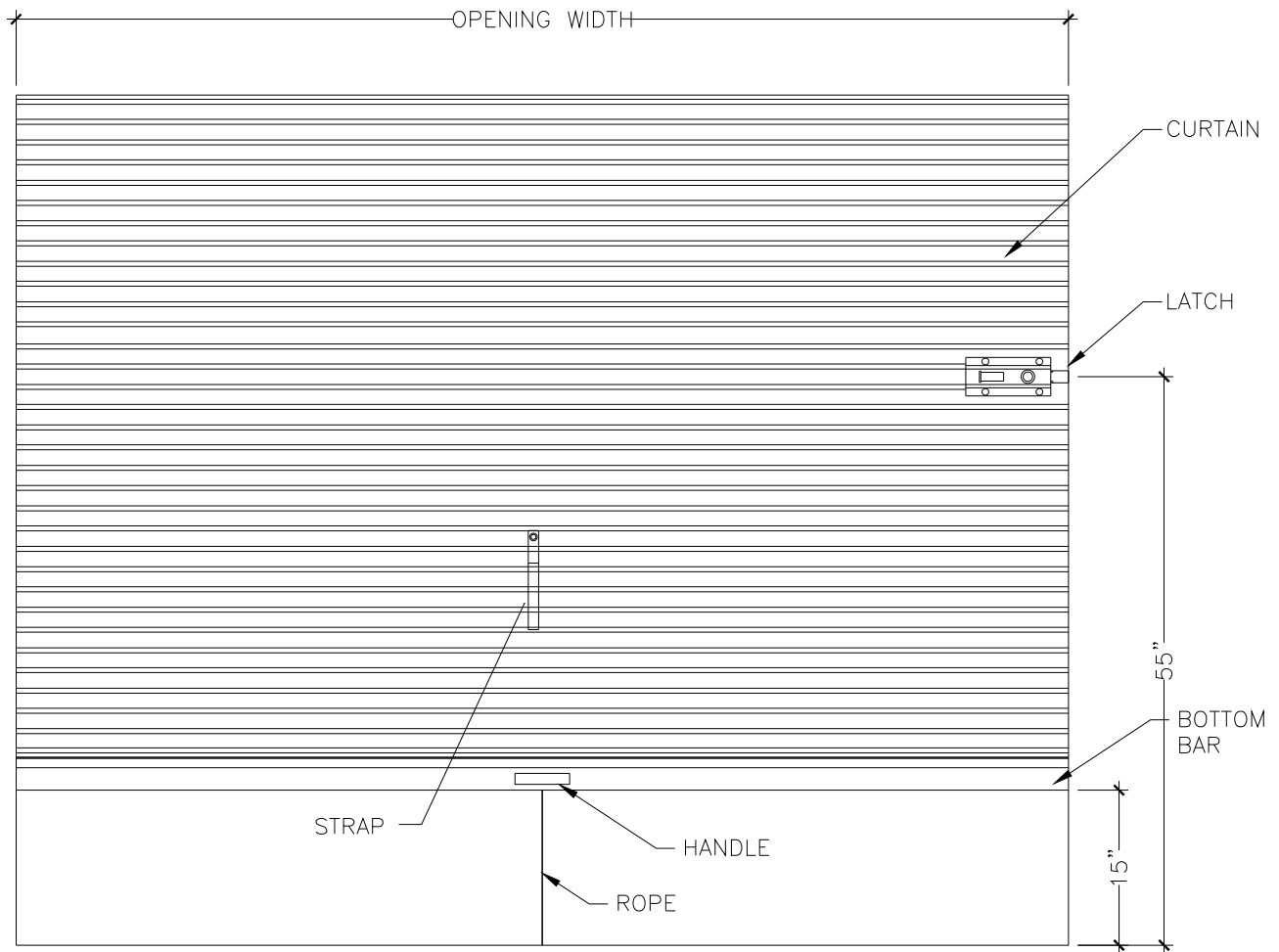


Figure 1
 Door Fully Closed

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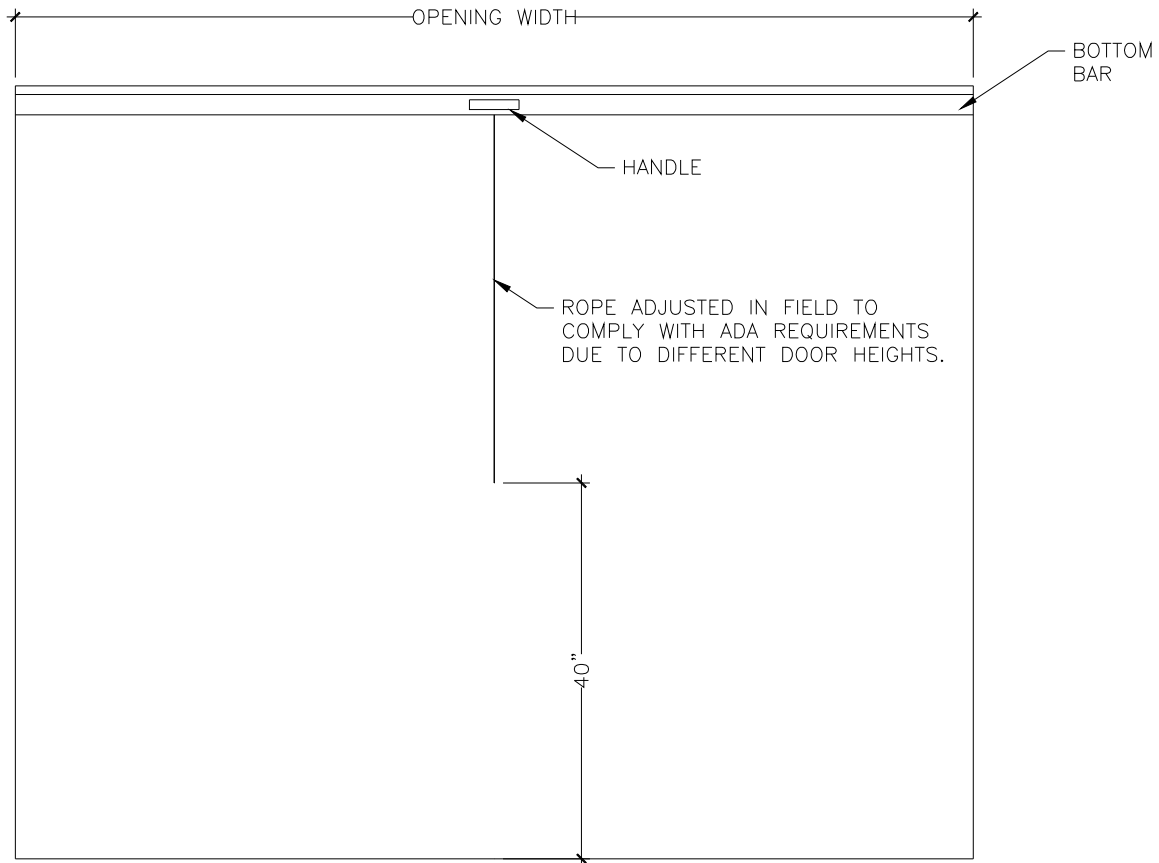
EXTERIOR ELEVATION DOOR OPENING

Figure 2
Door Being Opened

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EXTERIOR ELEVATION DOOR OPEN

Figure 3
Door Fully Open

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