

U.S. Fire Administration / National Fire Academy

## Coffee Break Training

### Topic: Door Opening Forces

**Learning objective:** The student shall be able to describe the maximum forces required to set side-swinging exit doors into motion, and move the door to the fully opened position.

Once a person has reached an exit, it is essential that he or she can open the door to escape. The building and fire codes specify the maximum forces necessary to start the door in motion, and move it to a fully open position. These forces can be measured using a special tool called a “door pressure gauge” that can be obtained from architectural supply stores or the World Wide Web.

Door latches, including panic hardware as illustrated below, must release when a 15-pound force is applied. The door must begin to swing when a 30-pound force is applied, and move to the fully opened position when a 15-pound force is applied. The forces are applied to the latch side.



Note that the forces represent *total* force, not pounds per square inch (psi) or pounds per square foot.

Over time, buildings may settle, or other obstructions occur that affect the door opening pressure. Fire inspectors should use a door pressure gauge to check all exit doors for compliance.

For additional information, refer to the “Means of Egress” units in NFPA 5000, *Building Construction and Safety Code*<sup>™</sup>; NFPA 1, *Uniform Fire Code*<sup>™</sup>; *International Building Code*<sup>®</sup>; and *International Fire Code*<sup>®</sup>.