

## CHAPTER 4

# RELIABILITY AND DURABILITY

### SECTION 401 RELIABILITY

**401.1 Objective.** To ensure reliability of the system necessary to meeting the performance objectives of building, facility or processes in accordance with the design.

#### 401.2 Functional statements.

**401.2.1 Design, installation and maintenance.** Design, install, and maintain systems, system components, and equipment that provide a safety function in strict accordance with the manufacturers' instructions and with any applicable codes and standards.

**401.2.2 Testing and inspection.** Test and inspect systems, system components and equipment that provide a safety function in strict accordance with the manufacturers' instructions and with any applicable codes and standards for both the methods employed and the frequency.

**401.2.3 Active fire protection systems.** Active fire protection systems such as fire alarm, suppression, and smoke management systems shall undergo commissioning testing when first placed into service or following any substantial alteration.

**401.2.4 Training.** Provide appropriate training to any people who operate, test, maintain or interpret information from any safety systems. Where such work is done by contractors, assure that they have the necessary training and skills.

#### 401.3 Performance requirements.

**401.3.1 Qualifications.** Design, installation and maintenance shall be performed only by qualified people as approved. Certification or records of training shall be provided.

**401.3.2 Documentation.** Documentation shall be maintained at the building that details the systems installed and their required maintenance and testing methods and frequency. Records of such maintenance and testing shall also be maintained that demonstrate compliance, the persons conducting the work, and their qualifications.

### SECTION 402 DURABILITY

**402.1 Objective.** To assist in the selection of appropriate materials and construction systems.

**402.2 Functional statement.** To ensure that a building will continue to satisfy the objectives of this code throughout its life.

#### 402.3 Performance requirements.

**402.3.1 Normal maintenance.** From the time a certificate of occupancy is issued, primary building elements shall, with only normal maintenance, continue to satisfy the performance requirements of this code for the intended life of the building.

**402.3.2 Intended life of a building.** Where the useful life of building or facility elements or systems is less than the intended life of the building, provisions shall be made for timely replacement of those elements, so that the objective of this code and the design are maintained.

**402.3.3 Damage and deterioration.** Where damage or deterioration to building or facility elements or systems will impact the objectives of this code or the design, those elements or systems shall be repaired or replaced in order to maintain the level of performance intended by this code.

**402.3.4 Determination of durability and service life.** In determining the useful service life of building elements, products, or systems, an acceptable method for determining durability and service life shall be used.

