Special Inspections

2012 INTERNATIONAL BUILDING CODE
FIRE PROTECTION
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Definitions

• **SPECIAL INSPECTION.** Inspection of construction requiring the expertise of an approved special inspector in order to ensure compliance with this code and the approved construction documents.
Definitions

• **Continuous special inspection.** Special inspection by the *special inspector* who is present when and where the work to be inspected is being performed.
Definitions

• **Periodic special inspection.** Special inspection by the *special inspector* who is intermittently present where the work to be inspected has been or is being performed.
Definitions

• **SPECIAL INSPECTOR.** A qualified person employed or retained by an approved agency and approved by the building official as having the competence necessary to inspect a particular type of construction requiring special inspection.
Section 1604.5
RISK CATEGORIES
Risk Category

• **1604.5 Risk category.** Each building and structure shall be assigned a *risk category* in accordance with Table 1604.5.
Multiple Occupancies

• Where there are two or more occupancies with different risk categories, the highest risk category shall be used.

• If the occupancies are structurally independent with separate access and egress, they shall be classified separately.
Risk Category I

Buildings and other structures that represent a low hazard to human life in the event of failure, including but not limited to:

• Agricultural facilities.
• Certain temporary facilities.
• Minor storage facilities.
Risk Category II

Buildings and other structures except those listed in Risk Categories I, III and IV
Risk Category III

Buildings and other structures that represent a substantial hazard to human life in the event of failure, including but not limited to:

- Assembly > 300
- Education > 250
- I-2 ≥ 50 residents *
- I-3
- Public Utilities **
Risk Category IV

Buildings and other structures designated as essential facilities, including but not limited to:

- I-2 Surgery/Emergency
- Fire/Rescue/Police
- Emergency Shelters
- Emergency Response
- Public Utilities*
Chapter 17
SPECIAL INSPECTIONS & TESTS
Section 1701 - General

• Scope
• New Materials
• Used Materials
Section 1703 - Approvals

• Approved Agencies
  • Listing
  • Labeling
Section 1704

• Special Inspections
• Contractor Responsibilities
• Structural Observations
Special Inspections

• Owner or Registered Design Professional
  • Exceptions
    • Minor (AHJ)
    • Group U accessory to Group R (AHJ)
    • Light Frame Steel (2211)
    • Light Frame Conventional (2308)
Special Inspector

• Qualifications
  • Written Documentation
  • Acceptable to AHJ
  • Knowledgeable in Area

• RDP or E of R
• Independent
Special Inspections

• Work shall remain accessible until inspection is complete

• Reports and Records
Section 1705

• Required Verification and Inspection
• Special Cases
  • Alternative Materials
  • Unusual Design
• Materials and Systems
Section 1705.13

• Sprayed Fire-Resistant Materials
  • Based on Design or Manufacturer
  • Performed AFTER Rough-in
    • Electrical
    • Mechanical
    • Fire Protection
    • Plumbing
Section 1705.13

- Tests
  - Condition of substrate
  - Thickness of application
  - Density
  - Bond Strength
  - Condition of finished application
Section 1705.14

- Mastic and Intumescent Coatings
- Based on Design and Manufacturer
- Special Inspections are to be in accordance with AWCI 12-B
*1705.16*

- Fire-Resistant Penetrations and Joints
  - High Rise
  - Risk Category III or IV
*1705.16*

- Fire-Resistant Penetrations and Joints
  - Through Penetrations
  - Membrane Penetrations
  - Fire-resistant Joints
  - Perimeter Fire Barrier Systems
*1705.16*

- Penetration Firestops
- Tested and Listed Systems
- Approved Agency
- ASTM E2174
ASTM E2174

• Latest Edition 2014b (January 2015)
  • Minimum Inspector Qualifications
  • Systems Requiring Inspection
  • Standard Guidelines and Reporting
  • Means of Compliance Verification
Inspector Qualifications

• Acceptable to AHJ
• Minimum 2 Years Experience
• Completely Independent
  • Installer, Contractor, Manufacturer, or Supplier
  • Not a competitor of above
Inspections

• Verify Materials Used
• Verify Systems are Correctly Installed
  • Observing
  • Measuring
• Destructive Testing
Inspection Frequency

• Onsite and Witness at Least 10% of Each Type Installed
• Post Installation
  • Destructive Testing
    • At Least 2% of each system
    • Additional 2% for Failure after Repair
    • 10% Failure Inspections Stop
*1705.16*

• Fire-resistant Joint Systems
• Tested and Listed Systems
• Approved Agency
• ASTM E2393
ASTM E2393

- Latest Edition 2010a (September 2015)
  - Minimum Inspector Qualifications
  - Systems Requiring Inspection
  - Standard Guidelines and Reporting
  - Means of Compliance Verification
Inspector Qualifications

• Acceptable to AHJ
• Minimum 2 Years Experience
• Completely Independent
  • Installer, Contractor, Manufacturer, or Supplier
  • Not a competitor of above
Inspections

- Verify Materials Used
- Verify Systems are Correctly Installed
  - Observing
  - Measuring
  - Destructive Testing
Inspection Frequency

• Onsite and Witness at Least 5% of Linear Feet for Each System Installed

• Post Installation
  • Destructive Testing
    • At Least 1 sampling per 500 feet
    • Additional sampling for Failure after Repair
  • 10% Failure Inspections Stop
Section 1705.17

• Special Inspection for Smoke Control
  • During Erection of Ductwork
    • Leakage Testing
    • Device Locations
  • Prior to Occupancy
    • Pressure Difference Testing
    • Flow Testing
    • Control Verification
Section 1705.17

- Inspector Qualifications
  - Fire Protection Engineering
  - Mechanical Engineering
  - Certified Air Balancing
Life Safety Code

• 7.2.1.15 Inspection of Door Openings
  • Panic / Fire Exit Hardware
  • Exit Enclosures
  • Electrically Controlled Egress Doors
  • Special Locking Arrangements (7.2.1.6.)
Life Safety Code

- Fire Doors (NFPA 80)
- Smoke Doors (NFPA 105)
- Not less than Annually
- Written Record of Inspection
- Competent Individuals
Minimum Elements

- Floor Space
- Forces to Open
- Latching / Locking
- Releasing Devices
- Pair Doors
- Closures
- Door Projections
- Powered Doors
- Signage
- Special Locking
- Security Devices
Questions?

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