OBJECTIVE: To gain an understanding of how a building is classified as a specific type of construction, based on the construction materials and the various building elements’ resistance to fire.

REFERENCE: Chapter 6, 2012 International Building Code

KEY POINTS: • What do the various types of construction indicate?
• How are the required fire-resistance ratings of building elements determined?
• Why are exterior walls regulated by additional criteria?
• Why are exterior walls protected differently based on fire separation distance?
• At what minimum distance is the protection of exterior walls unnecessary?
• Which types of materials are required to be used as building elements of a Type I or II building?
• How do the two different categories of Type I construction differ in fire protection? Type II construction?
• Which types of materials are required for use in the exterior walls of a Type III structure? In the interior building elements?
• What is another name for Type IV construction?
• How shall exterior walls be constructed? Interior building elements?
• What are the minimum construction details for columns used in a building of Type IV construction?
• In Type IV buildings, what is the minimum size of heavy-timber members used in the floor and roof framing? Floors? Roofs? Partitions?
• Where the minimum dimensions for Type IV solid sawn members are prescribed, how are the equivalent sizes established for glued laminated members?
• Type V buildings may be constructed of which building materials?
• How does a Type VA building differ from a Type VB building?
• In noncombustible Type I and II buildings, where may fire-retardant-treated wood be used?
• Which specific allowances are provided for combustible materials in Type I and Type II buildings?
KEY POINTS: (Cont’d)

• What are the limitations for the use of fire-retardant-treated wood in the roof construction of noncombustible buildings? In nonbearing partitions? In nonbearing exterior walls?

• Which building elements are considered structural frame elements for the determination of fire resistance? Secondary members?

• When are bracing members considered part of the structural frame?

• Under which conditions may the required fire resistance of roof supports be reduced?

• At what height may the required fire resistance of roof construction be eliminated? In which occupancies is the elimination not applicable?

• For which building elements are heavy-timber members and 1-hour fire-resistance-rated construction interchangeable?

• How can a sprinkler system affect a building’s type of construction classification?

• How are interior nonbearing walls regulated for fire resistance based on construction type? Exterior nonbearing walls?
**Code Text:** Buildings and structures erected or to be erected, altered or extended in height or area shall be classified in one of the five construction types defined in Sections 602.2 through 602.5.

**Discussion and Commentary:** There are two major groupings based on the construction materials: noncombustible construction (Types I and II) and noncombustible or combustible construction (Types III, IV and V). These groupings are divided into two more categories: protected, where the major structural elements are provided with some degree of fire resistance, and unprotected, where no fire protection of the building elements is typically mandated. Protected construction is further distinguished in Type I buildings where the required protection for many structural elements exceeds a 1-hour fire-resistance rating.
Where a structure is separated by one or more fire walls, the code treats those individual compartments created by the fire walls as separate buildings. Thus, each separate compartment would be considered a distinct building for the purpose of classification by type of construction.
The “fire separation distance” is defined in Section 202 as the distance measured from the building face to the closest interior lot line, to the centerline of a street, alley or public way, or to an assumed imaginary line between two buildings on the same lot.