The Risk Illuminator

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Dear LQA:

Q: What's the difference between a "dead load" and a "live load" as they relate to foundations and floor slabs ?
B.W. Scranton, PA

A: Dead load refers to the amount of load on the building foundation/ floor slab attributable to the permanent weight of the structure including structural and non-structural components such as the slab itself, ceilings, partitions, piping, flooring, etc. Live loads occur over short periods or on a temporary basis and include building occupants, appliances, furniture, snow build up on the roof, cars in a parking garage, etc. The allowable foundation pressure is usually increased by one third to provide for live loads. For example, the minimum live load for roofs is 20 psf in most areas. In snow fall regions, a load of 30 psf is utilized to compensate for the snow load. The UBC provides a listing of minimum live load standards.

Standardized Building Codes

There are (3) primary building codes utilized in the U.S. They are: 1) Uniform Building Code (UBC); 2) National Building Code (NBC), & (3) Standard Building Code (SBC). These codes are published by private organizations (UBC – Int'l Congress of Bldg. Officials, NBC – Bldg. Officials & Code Administrators, and SBC So. Bldg. Code Congress) and do not become law until adopted by a municipality. Most city & county governments have adopted one of these codes. The UBC is the most widely known code and is used extensively in the W. of the Mississippi & Canada. The NBC is more prevalent E. of the Mississippi, with the SBC dominating the southeastern states. The differences between the (3) codes are lessening over time. The codes are continually evolving as more effective and improved building standards are developed that help better achieve the codes objective of improving standards for safeguarding life, health, and property. Architects should be aware that smaller municipalities may adopt a building code and not update it for several years. Many of these codes are outdated and may not resemble the current version of the code. The codes have grown substantially over the years. 70 yrs. ago UBC was little more than a pamphlet; today the UBC is comprised of (3) large volumes. Many organizations and subcodes contribute to these codes including: American Society of Civil Engineers (ASCE), American Society of Testing and Materials (ASTM), National Fire Protection Association (NFPA), and American Society of Mechanical Engineers (ASME) to name a few. Other model codes regularly referenced include Int'l Mechanical Code, Nat'l Electric Code, Nat'l Plumbing Code, Uniform

See Codes page 2

Hard-Hat University

"POP QUIZ #4"

Match the terms with the definitions:

1. Dentil
2. Damper
3. Dobie
4. Deadman
5. Desiccate
6. Dormer

A. Adjustable air-flow control device used in a duct.
B. Concrete block buried in the ground to anchor a cable.
C. Square blocks repeated in a pattern.
D. To remove moisture or dehydrate.
E. Small concrete block providing downward support for rebar during a concrete pour.
F. A projection built out from the slope of a roof.

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Construction Types

There are (5) construction classification types for buildings that provide a measure of the structure's fire-resistive properties. These classifications are Types I, II, III, IV, V, with Type I providing the most fire resistance and Type V providing the least. These classifications are based on the composition of the fire-resistive properties of the major building elements. This is generally measured in hours, typically 1, 2, 3, or 4 hour protection. Each construction type specifies a fire rating in hours for each of the 10 major building elements (exterior & interior bearing walls, non-bearing walls, structural frame, partitions, shaft enclosures, floors, roofs, exterior doors & windows, & stairways). The terms combustible, non-combustible, fire resistive, non-fire resistive, protected, and non-protected are used to describe the impact of a fire on a building. For instance, a Type I building with maximum fire protection would typically include a steel frame (as opposed to a wood frame) and structural steel may be coated with various thicknesses of fireproof coatings such as portland cement. This would be indicative of a Class A building. A structural frame of this type would provide 3-hour fire protection. By comparison, a Type IV building is combustible and made of slow burning heavy timbers; or a Type V building contains frames that are the most combustible and consist of light wood framing with 1-hour or no fire-resistive protection. The size of the structure, maximum allowable area, # of doors, and building height will determine the fire resistive requirements for the building. For example, a 6- story apartment will require Type I or II fire resistive construction.

***Codes** from page 1*

Fire Code, Uniform Security Code, etc.; references to these published standards help to keep these major codes from reaching unmanageable lengths. It is always important to remember that these building codes set MINIMUM standards. All building codes are based on experience and change regularly as more is learned about building materials & building hazards, and as building defects are discovered.

Answers: 1-C, 2-E, 3-A, 4-B, 5-D