



# BUILDING CONTRACTORS PROJECT MANAGEMENT EXAMINATION CONTENT INFORMATION

January 2020

The Project Management portion of the examination will consist of 50 equally weighted questions covering managing, controlling, and conducting a specific project.

The examination will have questions relating to the following content areas and necessary knowledge for each area includes:

- reading and interpreting plans and specifications
- reading and interpreting codes
- basic mathematics (addition, subtraction, multiplication, division, calculations of area and volume, fractions, decimals, percentages, calculating the sides of triangles, square roots, powers of numbers, and solving simple algebraic equations for unknown variables)

You should be prepared to respond to examination questions on any of the content areas listed. Questions asked and content areas tested on previous examinations should not be assumed to be the only possible questions to be asked or content areas to be tested on this examination.

The percentage of questions shown for each content area may vary by as much as plus or minus three (3) percent. Please refer to the Candidate Information Brochure and the Reference List for additional information.

## **Content Area E** **64%** **Construction Methods, Materials, Tools, and Equipment**

### **1. Performing site layouts**

- understanding of surveys (e.g., types, instruments, methods)
- Knowledge of benchmarks
- Knowledge of elevations (including FEMA requirements)
- Knowledge of setbacks and easements
- Knowledge and interpretation of site plan
- Knowledge of environmental impact (e.g., wetlands, trees, retention ponds, storm water drainage)
- Knowledge of material storage

### **2. Evaluating soil conditions**

- Knowledge of soils (e.g., soil types, compaction, density, proctor, moisture content)
- interpreting soil reports
- knowledge of appropriate foundation types given soil conditions
- knowledge of water tables

### **3. Performing earthwork**

- knowledge of excavations (e.g., cut and fill calculations, calculating excavations and grades, trenching)
- preparation of site for foundation (e.g., angle of repose, soil compaction)
- knowledge of sheeting, shoring for excavations and dewatering
- knowledge of erosion control
- knowledge of quality control related to earth-work

### **4. Placing and testing concrete**

- knowledge of shoring
- knowledge of loads (e.g., volume, pressure)
- knowledge of systems and methods for concrete (e.g., Footings, piles and pile caps, placing slabs and decks, columns, walls)
- knowledge of forming practices, bracing and erection
- knowledge of concrete reinforcement
- knowledge of quality control related to concrete
- knowledge of concrete mixtures and additives

### **5. Placing masonry**

- knowledge of erection and bracing
- knowledge of masonry materials and handling
- knowledge of quality control related to masonry
- knowledge of reinforcement
- knowledge of grouting

### **6. Framing with wood**

- Knowledge of lumber types (e.g., engineered, wood grades, species)
- knowledge of truss erection and bracing
- knowledge of rafters, floor joists and studs
- knowledge of and ability to use span tables
- knowledge of wind loads and fasteners
- knowledge of roof framing, sheathing and materials

- 7. Framing with metal**  
 Knowledge of metal materials (e.g., aluminum, steel, gauges, grade)  
 Knowledge of pre-engineered buildings  
 knowledge of erection and bracing techniques  
 knowledge of metal studs, beams columns, bar joists, fasteners and trusses  
 knowledge of coatings (e.g., painting, fire and corrosion protection)  
 knowledge of welding and connections of steel framing  
 knowledge of metal roof framing
- 8. Understanding innovative techniques**  
 knowledge of tilt-up construction  
 knowledge of SIP's (Structural Insulated Panels)  
 knowledge of ICF (Insulated Concrete Forms)  
 knowledge of slip forming
- 9. Implementing energy efficient construction**  
 Ability to interpret energy calculations  
 knowledge of R-values and U-values for different materials  
 knowledge of building envelopes  
 knowledge of blower door testing  
 knowledge pertaining to energy efficiency  
 Knowledge of types and placement of insulation (e.g., rigid and spray foam, batts)
- 10. Installing miscellaneous materials**  
 knowledge of gypsum materials and methods (e.g., fastening requirements, fire wall assembly)  
 knowledge of plaster and stucco materials and methods  
 knowledge of moisture control (vapor barriers, flashings, etc.)  
 knowledge of cementitious materials  
 knowledge of fire-proofing wall and floor penetrations  
 knowledge of insulated wall panels  
 knowledge of roof covering materials (e.g., pre-engineered systems, shingles)
- 11. Understanding the use of heavy equipment**  
 knowledge of cranes  
 knowledge of hoisting equipment  
 knowledge of lift plans

**Content Area F** **20%**  
**Safety**

- 1. Complying with OSHA standards**  
 knowledge of site layout  
 knowledge of soil conditions  
 knowledge of shoring for concrete  
 knowledge of bracing and erection  
 knowledge of earth-work  
 knowledge of formwork for concrete  
 knowledge of framing  
 knowledge of scaffolding  
 knowledge of trench safety  
 knowledge of ground fault interruption  
 knowledge of construction equipment  
 knowledge of field log record keeping  
 knowledge of fall protection  
 knowledge of job site safety information requirements  
 knowledge of other OSHA regulations
- 2. Complying with other safety standards and practices**  
 knowledge of asbestos  
 knowledge of lead paint  
 knowledge of hazardous waste disposal  
 knowledge of mold remediation

**Content Area G** **16%**  
**Reading Plans and Specifications**

- 1. Reading construction documents**  
 ability to read and understand plans and drawings (e.g., knowledge of sections and views)  
 basic math skills and calculations associated with reading construction drawings  
 knowledge of architectural and engineering symbols, tables and specifications  
 Interpreting Shop drawings and submittals
- 2. Interpreting construction codes and standards**  
 ability to read, understand, and apply codes and standards including building codes  
 knowledge of ADA requirements