



GENERAL CONTRACTORS PROJECT MANAGEMENT EXAMINATION CONTENT INFORMATION

January 2020

The Project Management portion of the examination consists of 60 equally weighted questions covering the management and operation activities of a construction company.

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 **63%** **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 Safety

20%

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

17%

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