

CERTIFICATION
EXAMINATIONS
FOR
LEVEL I –
ASSOCIATE CONSTRUCTORS
AND
LEVEL II –
PROFESSIONAL CONSTRUCTORS

Handbook for Candidates

Application Deadline

Examination Date

February 1, 2012

March 31, 2012

September 15, 2012

November 3, 2012



American Institute of Constructors
Constructor Certification Commission

700 N. Fairfax Street, Suite 510

Alexandria, VA 22314

703.683.4999

www.ProfessionalConstructor.org

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INTRODUCTION

The American Institute of Constructors (AIC) Constructor Certification Commission (“Commission”) certification process gives you a formal international recognition of the education and experience that defines you as a professional equal to those of other professionals in the construction industry such as architects and engineers. The Commission knows you are committed to serving the construction industry in a professional and ethical manner, and can help you develop and improve your skills and knowledge to meet increasing challenges in our discipline through an internationally recognized certification process. Unlike licensing, certification is a voluntary, non-governmental process acknowledging the acquisition of education and experience-based proficiencies of a practicing construction professional – the Constructor.

The certification process is based on meeting designated educational and/or experiential qualifications to sit for one or both comprehensive examinations – Level I Associate Constructor (AC) examination and Level II Certified Professional Constructor (CPC) examination. Both examinations are administered twice a year, in the spring and fall, at over 60 sites throughout the United States.

APPLICATION QUICK GUIDE

Becoming certified is a six-step process as highlighted below. All applicants, however, need to follow the specific directions in this Handbook.

Step 1: Review the education and experience requirements described in this Handbook to make sure you qualify to sit for the respective examination.

Step 2: If you meet the required educational and/or experiential requirements, fill out the application included with this Handbook or go online to www.professionalconstructor.org and return it to the Commission with the required supporting documentation and application fee.

Step 3: The Commission will verify your educational and/or educational qualifications and will let you know if your application has been approved to enable you to sit for the respective examination.

Step 4: Using the Examination Preparation Guide made available to you online upon approval of your application, study to take the respective examination.

Step 5: Take the respective examination. Both the Level I (AC) and Level II (CPC) examinations are each 8-hour written tests, held on specific dates in the spring and the fall each year.

Step 6: If you pass the respective examination you will be awarded the appropriate certification. However, if you are a student enrolled in a four-year construction education program taking the Level I (AC) examination as a graduating senior, you will not be formally certified until after you graduate and the Commission receives official notification from your college or university.

[APPLY ONLINE](#)

Go to www.professionalconstructor.org and click Get Certified on the top right of the page. You can download a Handbook and click on the application to fill it in online or print out an application and mail it in.

[APPLICATIONS AND QUESTIONS](#)

To request additional Handbooks and applications or for any questions, please contact the Constructor Certification office at:

AIC Constructor Certification Commission
700 N. Fairfax Street, Suite 510
Alexandria, VA 22314
703.683.4999
info@ProfessionalConstructor.org

[BENEFITS OF CERTIFICATION](#)

Certification benefits all parties involved in the construction industry, since it raises the standards of professional practice.

Benefits to the Constructor

- Internationally recognized certification of construction management skills and knowledge.
- Analysis of individual strengths and weaknesses.
- Enhances the Constructor image as a professional to their employer, their clients, and the public.
- Provides a marketable credential that sets you apart.

Benefits to the Employer

- Independent assessment of an employee's skills and knowledge.
- Improves marketability to clients.
- Assurance that employees will continue to hone their skills, through the required Continuing Professional Development program.

Benefits to the Owner

- Assurance that their projects will be managed more effectively.
- Qualification as a means to prequalify contractors.
- Knowledge that their contractor management team will maintain the highest degree of professionalism.

ELIGIBILITY REQUIREMENTS

To apply for the exams, all applicants must:

1. Agree to abide by the AIC Constructor Code of Conduct. (Review the Constructor Code of Conduct in this Handbook before you proceed. By applying for the exams, you agree to uphold these principles.)
2. Meet the minimum requirements to sit for the applicable exam. (Review the eligibility requirements later in this Handbook for more details. The Level I and Level II applications have different requirements.)
3. Complete and file an application. (Review the application included with this Handbook, or download one from www.professionalconstructor.org. Fill out all required sections and include all educational and/or experiential documentation.)
4. Pay all required fees. (Review the fee schedule later in this Handbook, and include full payment with your application.)

LEVEL I – ASSOCIATE CONSTRUCTOR (AC) ELIGIBILITY

To take the AC (Level I) exam, you must have met at least one of the following requirements by the time you apply:

4 years of either Qualifying Experience, Qualifying Education, or some combination of the two. Please see below for definitions of qualifying experience and education

- or -

Be within 9 months of graduating from a 4-year construction management bachelor's degree program. Please note that you may sit for the exam before you graduate, but you will not be certified until you receive your degree.

LEVEL II – CERTIFIED PROFESSIONAL CONSTRUCTOR (CPC) ELIGIBILITY

The requirements for taking the CPC (Level II) exam are different depending on whether you have already received the AC certification.

ACs who are applying for the CPC exam should refer to the "AC Upgrades" section below. All other CPC applicants should refer to the "AC Exemptions" section.

AC Upgrades

If you are already an AC, you must have met all of the following requirements by the time you apply:

Your AC certification must be in good standing. (If you are not sure of your certification status, please write to info@ProfessionalConstructor.org)

- and -

4 years of either Qualifying Experience or Qualifying Education since earning your AC, or some combination of these two

- and -

At least 2 of these years in a position where you had overall responsibility for delivery of a project or a substantial portion of a project (for example, as a Project Manager, Superintendent, etc).

AC Exemptions

If you are not an AC and would like to take the CPC exam, you must have met all of the following requirements by the time you apply:

8 years of either Qualifying Experience, Qualifying Education, or some combination of these two

- and -

At least 2 of these years in a position where you had overall responsibility for delivery of a project or a substantial portion of a project (for example, as a Project Manager, Superintendent, etc).

QUALIFYING EDUCATION – DEFINITION

“Qualifying Education” is formal education (such as at an accredited University or other full-time learning) that counts towards your qualification requirements to sit for the exams.

Neither the AC nor the CPC exam has a minimum educational requirement, so you may take the exams even if you have no academic degrees. But, if you do not have any Qualifying Education then you must make up the difference with Qualifying Experience.

Years of Qualifying Education are counted as follows:

- 2 Years – Graduate degree in a construction or management program, such as MS, MBA, PhD, etc. (Note that the Bachelor’s Degree that preceded the graduate degree counts for additional years of qualifying education)
- 4 Years – Bachelor of Science degree from an accredited construction program, such as Construction Management
- 3 Years - Bachelor of Science degree from an accredited construction-related program, such as Architecture or Civil Engineering
- 2 Years – Any other 4-year degree
- 2 Years - Associate degree from an accredited program with a concentration in construction.
- 1 Year – Associate degree not related to construction
- No Credit –High School and Vocational Schools

Graduating Seniors: Level I (AC) applicants who are within 9 months of graduating from an accredited 4-year construction management bachelor’s degree program may apply as if they had 4 years of Qualifying Education.

Such applicants may take and pass the exam, but will not be certified until the 4-year degree is complete, or until they earn at least 1 year of Qualifying Experience.

QUALIFYING EXPERIENCE – DEFINITION

“Qualifying Experience” is work experience in construction management and related fields that counts towards your qualification requirements to sit for the exams. Generally speaking, one year of work in construction management counts for one year of Qualifying Experience.

Only the CPC exam has a minimum experience requirement. But, if you are applying for the AC exam with less than 4 years of Qualifying Education, then you must make up the difference with Qualifying Experience.

How Years of Work are Counted

One year of work is defined as at least 2,000 hours of work in a single 12-month span. If you worked more than 2,000 hours in a single year, this still counts as only one year.

However, if you worked less than 2,000 hours in a single year, you may combine hours from 2 or more years to meet the definition of “a year of work.”

Amount of Qualifying Experience per Year of Work

All work related to construction counts towards qualifying for the exams. However, work other than construction management may count for less Qualifying Experience than construction management work.

Executive, Supervisory, and Project Management Work

Full Credit: 1 qualifying year per 1 year of work

Direct and/or executive level supervision of any of the following areas: estimating, quality control, project engineering, scheduling, project management, operations management, operations executive, and/or project management (excluding accounting, marketing, and other support areas not in the direct line of the construction process).

Technical Work

Partial Credit: 3/4 qualifying year per 1 year of work

Construction related work such as estimating, quality control, scheduling, architecture and/or project engineering.

Administrative

Partial Credit: 3/4 qualifying year per 1 year of work

Management level work in areas supporting the construction process, including purchasing, finance, safety, and/or marketing.

Teaching/Research

Partial Credit: 3/4 qualifying year per 1 year of work

Teaching construction coursework at a post-secondary institution or conducting construction research within a governmental agency or university setting. Conducting peer-reviewed academic research related to construction.

Supervision of Specialty Trades

Partial Credit: 3/4 qualifying year per 1 year of work

Direct, first-line management of craft persons, including foremen, general foremen, and craft superintendents.

GUIDE TO FILLING OUT THE APPLICATION

All sections of the application are required, except for the sections specifically marked as optional. The Commission will not process incomplete applications.

Page 1 of the Application

Applicant Information

All information in this section is required. Your application will be delayed if you leave sections blank or do not fill it out correctly. Correspondence prior to the exam will be sent to your "Current Mailing Address." Correspondence after the exam (such as your scores and certificate) will be sent to your "Permanent Mailing Address."

Qualifying Examinations Information

All information in the section is required. Your application will be delayed if you do not fill out this section correctly.

Select whether you are applying for the Level I (AC) or Level II (CPC) examination. If you are applying for the Level II exam, select whether you are an AC Upgrade or an AC Exemption. Select whether you have taken the exam before, and if so, the approximate dates when you last tested. This information is important for matching your new application to your existing file. Mark your requested examination date, and exam location code. Exam location codes are listed in the table later in this guide, as well as online at www.professionalconstructor.org. If you are requesting special testing circumstances (such as due to a documented disability or religious restriction) then check the appropriate box in this section. You must include documentation describing your disability and request.

Page 2 of the Application

Qualifying Education and Experience

Fill out the section or sections appropriate to the examination for which you are applying. If none of the options match your qualifications exactly, then fill in the section that best describes your qualifications. This section will be processed by computer to route your application to the appropriate review team, but will not determine whether or not you qualify for the exam.

You must still include the required educational and/or experiential documentation to qualify for the exam. Your responses in this section do not substitute for documentation of your qualifications.

Optional Information

All of these questions are optional. The information is requested so that the Commission can review the exam questions to be sure that they are fair. Your responses will be used only in statistical summaries, and will never be linked to you personally.

Your responses will have no influence on whether you are approved to take the exam, or on your test results, or on your certification.

Applicant Signature

When you have completed all required information, read the statement under Applicant Signature and sign and date the application in the space provided.

Page 3 of the Application

You do not need to fill out or return page 3 of the application.

Page 4 of the Application

You do not need to fill out or return page 4 of the application unless you are using Qualifying Experience to qualify for the exams. Most Level I (AC) applicants do not need to fill out page 4.

You may make as many copies of page 4 as you need.

Construction Experience Certification Form

Fill out one copy of page 4 for each block of Qualifying Experience that you are using to qualify for the exam. You do not need to fill out this section for jobs that you are not using to qualify for the exam.

A block of experience is any continuous period of work where you performed approximately the same task, for the same company.

For example, if you were an Estimator at XYZ Corp. for 5 years, and were later promoted to Vice-President at the same company, you should consider this two different blocks.

Similarly, if you were a Vice-President at ABC Corp, and later moved and became a Vice-President at XYZ Corp, you should also consider this two separate blocks at the respective company.

Each copy of the Construction Experience Certification Form should be signed by a supervisor who was/is familiar with your work in that position.

If You Cannot Get a Supervisor Signature

If you did not have a supervisor (e.g. you were the principal at the company) or your previous employers cannot be contacted, please include a statement explaining why you could not get a supervisor signature. In this case only, you may put your own name and signature in the "Certifier Signature" line.

TESTING LOCATIONS

The examinations will be given in the following locations. Indicate your choice of center on your Application in the space provided.

The list below is current as of the time that this booklet was printed. However, locations may change from time to time without notice. The Commission will contact you if you have requested a test site that is no longer available.

Please visit www.professionalconstructor.org for the most up-to-date listing of test sites.

Location Code	Institution Name
AK001	University of Alaska
AL001	Auburn University
AR001	John Brown University
AR002	University of Arkansas - Little Rock
AZ001	Arizona State University
AZ002	Northern Arizona University
AZ003	Arizona Builders Alliance - Level II (CPC) ONLY
CA001	California Polytechnic State University
CA004	California State University - Sacramento
CA006	California State University - Northridge
CA007	Sundt San Diego - Level II (CPC) ONLY
CA008	California State University - Fresno
CO001	Colorado State University
CO003	Colorado Mesa University
CT001	Central Connecticut State University
FL002	University of Florida
FL003	University of North Florida
IA001	Iowa State University
IA002	University of Northern Iowa
ID001	Boise State University
IL001	Illinois State University
IL002	Southern Illinois University - Edwardsville
KS002	Pittsburg State University
KY001	Eastern Kentucky University
LA003	Louisiana State University
MA001	Wentworth Institute of Technology – SPRING ONLY
MD001	University of Maryland - Eastern Shore
ME001	University of Maine
ME002	University of Southern Maine- SPRING ONLY
MI001	Eastern Michigan University
MI002	Ferris State University
MI003	Michigan State University
MI004	Wayne State University
MN001	Minnesota State University - Moorhead
MN002	Minnesota State University - Mankato
MN005	MSU - Moorhead at North Hennipen (Brooklyn Park)
MO001	Central Missouri State University
MO002	Missouri Western State University
MO003	Missouri State University
MS001	University of Southern Mississippi - FALL ONLY

MT001	Montana State University
NC001	East Carolina University
NC003	Western Carolina University
ND001	North Dakota State University
NE001	University of Nebraska - Lincoln
NE002	University of Nebraska, Lincoln at Omaha - SPRING ONLY
NV001	University of Nevada Las Vegas- SPRING ONLY
NY001	Pratt Institute
NY002	SUNY - College of Environmental Science – SPRING ONLY
NY004	Alfred State College
OH001	Bowling Green State University
OH003	University of Akron- SPRING ONLY
OK001	Oklahoma State University - SPRING ONLY
OK002	University of Oklahoma - SPRING ONLY
PA001	Penn State Harrisburg
PA002	Temple University
PA003	Pennsylvania College of Technology - SPRING ONLY
RI001	Roger Williams University- SPRING ONLY
SC001	Clemson University
SD001	South Dakota State University
TX001	North Lake College
TX002	Texas A&M University
TX004	University of Houston
TX005	The University of Texas at Arlington
TX006	TEXO, The Construction Association - Level II (CPC) ONLY- FALL ONLY
TX007	AGC San Antonio - Level II (CPC) ONLY
TX008	Sundt El Paso - Level II (CPC) ONLY
TX009	Lamar University- SPRING ONLY
UT001	Brigham Young University
UT002	Weber State University
VA005	AIC Metro DC Chapter
VT001	Norwich University – SPRING ONLY
WA001	Central Washington University - SPRING ONLY
WA002	University of Washington
WA003	Washington State University - SPRING ONLY
WI001	Milwaukee School of Engineering – SPRING ONLY
WI003	University of Wisconsin - Stout
WI005	ABC Wisconsin

SPECIAL NEEDS AND REQUESTS

The Commission will make special testing arrangements for candidates who qualify for and request them.

If you have a special need (such as a documented disability, mandatory military service, or religious restrictions related to Saturday testing, etc), you must do the following.

1. Check the appropriate box under the Qualifying Examinations Information on page 1 of the application.
2. Include written assessment by a qualified professional that describes your limitations and how they restrict your access to the examination. Qualified professionals include disability services departments at universities, clergy that are qualified to determine religious restrictions, or other professions as appropriate to the circumstances.
3. Include a letter with your application that describes the nature of your need, and the specific accommodations that you are requesting.

Applications that include special needs must be submitted at least 30 days prior to the application deadline. The Commission unfortunately cannot accommodate special needs that are submitted after the deadline.

EXAMINATION FEES

1st Time Examinations

The following fees apply only to the first time you sit for a particular examination. All first-time applicants receive a study guide for either the II or III examination.

Level I (AC) Applications.....	\$155.00
Level II (CPC) Applications: AC Upgrade	\$405.00
For current ACs who are taking the Level II exam	
Level II (CPC) Applications: AC Exemption.....	\$535.00
For Level II applicants who are not AC certified	

Late Applications

If applications are postmarked or submitted online after February 1 for the spring Level I and II examinations; September 1 for the fall Level I examination when qualifying with experiential credits and fall Level II examinations; and September 15 for the fall Level I examination when qualifying solely with educational credits, a late fee will be charged to the applicant.

Late Fee	\$20.00
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Reexamination and Rescheduling Fees

If you need to reschedule your exam, please contact the Commission at least 30 days before the exam. A rescheduling fee will apply to any rescheduling requests received less than 30 days before the exam. Certain types of reschedule requests are never charged a fee. Please see the Rescheduling and Refunds section of this Handbook for details

Rescheduling Fee (less than 30 days from exam)\$110.00

You may retake the examination as many times as you need until you pass. Only your final, passing score will be counted. The fees for retesting are different from the fees for 1st-time applicants.

Level I (AC) Reexamination Fee \$110.00

Level II (CPC) Reexamination Fee\$170.00

Payment Methods

All exams must be paid in full by the examination date. Payment can be made by check, money order, or credit card. Credit cards accepted include Visa, MasterCard, and American Express. If you are applying as part of a university class, please check with your professor regarding discounts your university may have obtained for students. University students receiving a partial discount from the university will be responsible for the remaining fee at the time of registration.

Please make checks payable to:

AIC CONSTRUCTOR CERTIFICATION COMMISSION

[RESCHEDULING AND REFUNDS](#)

If you are not able to sit for the examination on the date and location that you chose, you must notify the Commission in writing as soon as possible.

You may reschedule or cancel your exam for any reason, provided you let the Commission know at least 30 days prior to the application.

All cancellation and rescheduling requests must be in writing.

Written requests may be emailed to info@ProfessionalConstructor.org or mailed to:

AIC Constructor Certification Commission
700 N. Fairfax Street, Suite 510
Alexandria, VA 22314

Cancellations

If you would like to cancel the exam and receive a refund, you may do so. A refund of your application fee (less administrative costs- \$45 Level I, \$150 for Level II) will be issued if requested in writing at least 30 days before your examination.

Candidates who do not notify the Commission at least 30 days prior to the exam will NOT be given a refund under any circumstances.

Rescheduling

If you are unable to take the exam on your scheduled exam date, but would like to take the exam again in the future, you may do so. Your application will be transferred to the exam date of your choice at no cost, provided you make a request in writing at least 30 days before your examination.

Candidates who do not notify the Commission at least 30 days prior to the exam must pay a rescheduling fee to change their exam date.

Emergencies and Exceptions

In certain circumstances, you may reschedule or cancel your exam at no charge. In most cases, only medical emergencies and national service (such as military deployment) qualify for no-fee rescheduling.

REFEXAMINATION

You may retake the examination as many times as you need until you pass. Only your final, passing score will be counted. The fees for retesting are different from the fees for 1st-time applicants.

To retake the exam, check the appropriate box under the Qualifying Examinations Information on page 1 of the application.

If it has been less than two years since you last took the exam, you only need to include pages 1 and 2 of the application along with your exam fee. You do not need to include information about Qualifying Experience and Qualifying Education when you retake the exam.

SCHEDULE FOR THE DAY OF THE EXAM

Testing centers generally follow the same schedule:

- 7:00 A.M. – Report to testing center for check-in
- 7:45 A.M. – Morning Session Examination Instructions
- 8:00 A.M. – Morning Session Examination begins
- 12:00 P.M. – Morning Session Examination ends
- 12:45 P.M. – Afternoon Session Examination Instructions
- 1:00 P.M. – Afternoon Session Examination begins
- 5:00 P.M. – Afternoon Session Examination ends

All candidates should report to their assigned centers by 7:00 A.M. on the examination date.

If you arrive late, you may be admitted to the examination at the discretion of the examiner. But, even if the examiner allows you to begin the exam late you will NOT be permitted to write beyond the time scheduled for completion of the examination. Please be sure to arrive on time for the examination.

RULES FOR THE EXAMINATION

You may not ask questions about the content of the exam during the testing period.

Be sure to listen carefully to the instructions given by the examiner at the beginning of each section, and carefully read the directions in the test booklet.

If you have questions about the structure or exam procedures, you must ask them before the section begins.

You must bring all of the following items with you to the examination:

- You must bring several sharpened Number 2 pencils with erasers.
- You must bring your photo ID.
- You must bring your admission notice. You will receive your admission notice about 1 week before the exam. If you need a replacement admission notice, please contact the Commission at info@ProfessionalConstructor.org or 703.683.4999 for a replacement.
- You must bring any type of trigonometric calculator. Any handheld battery or solar operated calculators are permitted, provided they do not have alpha keyboards, printing capabilities, or programming functions.

The following items are permitted, but optional:

- You may bring communications devices such as cellular phones and pagers, but they must be turned off for the entire exam. You may not use your cell phone or other communications device as a calculator, even if it has calculator functions.

The following items are prohibited. You may not bring any of these materials into the exam:

- You may not bring books, notes, formula sheets, or other reference materials.
- You may not bring test materials, documents, or memoranda of any sort.

ADMISSION PROCESS

When you submit your application, the Commission will send you an email confirming that your application has been processed. This email does not confirm that you are eligible for the exam, only that your application was received and was complete.

Within one month of the exam, you will receive another notice letting you know whether or not you are eligible to sit for the exam.

If ineligible: Your application and payment will be returned to you with an explanation of why you are not eligible. If you applied for the exam early enough, you may be able to correct any problems in time to take the exam.

If eligible: You will receive communication from the Commission congratulating you on your acceptance. You will receive final confirmation of your exam site and an admittance slip within two weeks of the exam. Your admittance slip will show the exact address of the examination room.

Changes in assignments to testing centers can NOT be made later than 30 days before the examination date.

WHO ADMINISTERS THE EXAMINATION PROCESS

The Examination Process is administered for the Constructor Certification Commission by Professional Testing Corporation (PTC).

WHEN YOU WILL GET YOUR RESULTS

You will receive a letter via USPS with your exam results within 4 - 6 weeks of taking the exam. The Commission does not give test scores by email or by phone.

Your score reports will detail your performance on the major areas of the examination, and whether you passed the exam.

If you pass the exam, you will also receive details on how to complete the certification process.

If you do not pass the exam, you will receive details on how to retake the exam in the future, and a summary of the appeals process if you disagree with the score.

APPEALS

You may appeal any adverse decision made by the Commission, such as being denied permission to take the exam, or being denied a passing score on the exam. All appeals are reviewed by an independent appeals panel.

A small appeal fee applies to all appeal requests, but this fee is refunded if the appeal is decided in your favor.

Please visit www.professionalconstructor.org or contact the Commission at 703.683.4999 for forms and details on the appeal process.

CONFIDENTIALITY

The Commission will never release your test scores or pass/fail status without your written permission.

If you are taking the exam as part of a university program that requires your score, you must fill out the "Score Release" form on your answer sheet on the day of the exam. The Commission will not release your score to your school if you do not sign this form.

CONTENT OVERVIEW – LEVEL I (AC) EXAM

The Level I - Associate Constructor Certification Examination is a two-part written examination that takes 8 hours to complete. All questions are multiple-choice, objective questions, with the exception of a writing assignment in the first part.

The number of questions may vary from year to year but will never be more than 300 questions.

The Level I (AC) Examination is weighted by subject category in terms of the percent of the total number of questions as follows:

I.	COMMUNICATION SKILLS.....	10%
II.	ENGINEERING CONCEPTS	5%
III.	MANAGEMENT CONCEPTS.....	12%
IV.	MATERIALS, METHODS, AND PROJECT MODELING AND VISUALIZATION ..	10%
V.	BIDDING AND ESTIMATING.....	15%
VI.	BUDGETING, COSTS, AND COST CONTROL.....	12%
VII.	PLANNING, SCHEDULING, AND SCHEDULE CONTROL.....	15%
VIII.	CONSTRUCTION SAFETY	7%
IX.	CONSTRUCTION GEOMATICS.....	2%
X.	PROJECT ADMINISTRATION	12%

CONTENT OUTLINE – LEVEL I (AC) EXAM

The following is a breakdown of the major subject categories:

- I. COMMUNICATION SKILLS
 - A. Oral Communication
 1. Presentations (Graphics, Tables, and PPTs)
 2. Telephone
 3. Listening
 - B. Written Communications
 1. Business Letters
 2. Memorandums
 3. Job Diary
 4. Construction Reports
 5. Meetings
 6. Electronic Media (emails, texting, etc.)
 - II. ENGINEERING CONCEPTS
 - A. Engineering Material Properties
 1. Aggregate
 2. Concrete
 3. Masonry
 4. Steel
 5. Wood
 - B. Soil Mechanics
 1. Soil Composition, Types, and Properties
 2. Soil Investigation Testing Methods and Soil Borings
 3. Types of Foundations
 4. Field Soil Identification Methods
 5. Volume Changes and Compaction Methods
 - C. Mechanics and Strength of Materials
 1. Formwork Design
 2. Beam Loads
 - D. Air and Fluid Mechanics
 1. Psychrometrics
 2. Hydrology
 - E. Electricity
 1. Principles
 2. Controls
 3. Communications
 - III. MANAGEMENT CONCEPTS
 - A. Contract Forms
 1. Standard Contract Forms (AIA, EJCDC, DBIA, AGC, etc.)
 2. Lump Sum
 3. Unit Price
 4. Design Build
 5. Cost Plus
 6. Construction Management
 - B. Business Entities
 1. Sole Proprietors
 2. Partnerships and Joint Ventures
 3. Corporations and LLC
 - C. Accounting and Financial Ratios
 1. Accounting Principles
 2. Financial Reports and Ratios
 - D. Management Systems
 1. Project Controls
 2. Technology
 3. Current Concepts
 - E. Business Ethics
 1. Constructor Code of Conduct
 2. Bidding, Purchasing, and Professional Practice
- IV. MATERIALS, METHODS, AND PROJECT MODELING AND VISUALIZATION
 - A. Construction Equipment
 1. Piling Equipment
 2. Sheet Piling, Cofferdams, Tie-Backs
 3. Excavation Equipment
 4. Compaction Equipment
 5. Cranes and Lifting Equipment
 - B. Construction Drawings and Specifications
 1. Sitework/Excavation
 2. Concrete and Forms
 3. Reinforcing Steel
 4. Metals
 5. Carpentry (Rough and Finish)
 6. Exterior Finishes (Insulation, Roofing, and Siding)
 7. Doors and Windows
 8. Interior Finishes (Specialties, Furnishings, etc.)
 9. Mechanical Systems, Processes, and Equipment
 10. Electrical Systems, Controls, and Communications (computer networks, fiber optics, video systems, etc.)
 - C. CSI Master Specs
 1. 2004 Format and Subsequent Revisions
 2. Pre-2004 Format
 3. Transition of 2004 to Pre-2004 Format

- D. Computer Assisted Project Models
 - 1. Building Information Models, BRIM, PIM, etc.
 - 2. Other Digital Methods
- V. BIDDING AND ESTIMATING
 - A. Bidding Process
 - 1. Bid Documents
 - 2. Scales
 - 3. Types of Specifications
 - 4. Laws, Regulations, and Codes
 - 5. Site Evaluation and Walk-Thru
 - 6. Insurance and Bonds
 - 7. Value Engineering and Life Cycle Costing
 - 8. Temporary Site Layout
 - 9. Sustainability Certifications (LEED, etc.)
 - B. Estimates
 - 1. Conceptual
 - 2. Labor, Overhead, and Profit
 - 3. Material Components
 - 4. Equipment Productivity
 - 5. Subcontractors
 - C. Quantity Takeoff
 - 1. Excavation
 - 2. Forms, Rebar, Concrete
 - 3. Carpentry and Roofing
 - 4. Interior Finishes
- VI. BUDGETING, COSTS, AND COST CONTROL
 - A. Budgeting
 - 1. Work Breakdown Structure
 - 2. Budget
 - B. Cost Control
 - 1. Productivity Rates, Earned Workhours
 - 2. Unit Costs
 - 3. Forecasts at Completion
 - 4. Payment Requests
 - 5. Claims and Changes
 - C. Finalize Costs
 - 1. Retainage
 - 2. Back Charges
 - 3. Payments
- VII. PLANNING, SCHEDULING, AND CONTROL
 - A. Project Planning
 - 1. Multi Crew, Phase Durations, Activity Durations, and Effective Durations
 - 2. Logical Sequences of Design, Procurement, and Construction
 - B. Scheduling
 - 1. Leadtime, Forward Pass, Backward Pass
 - 2. Total Float, Free Float, ES, EF, LS, LF, Critical Path(s), Completion Time
 - 3. Cost and Resource Loaded
 - C. Schedule Analysis
 - 1. Crashing
 - 2. Update and Monitor
 - 3. Claims and Impact
- VIII. CONSTRUCTION SAFETY
 - A. OSHA Administrative
 - 1. EMR
 - 2. General Duty Clause
 - 3. Site Procedures, MSDS
 - 4. Competent Person and Due Diligence
 - B. Standard Safety Procedures
 - 1. Fall Protection
 - 2. Ladders
 - 3. Fire Extinguishers
 - 4. Cranes and Equipment
 - 5. Recordkeeping and Inspections
 - C. Safety Procedures Interpretation
 - 1. Excavations
 - 2. Scaffolding
 - 3. Personal Protection
 - 4. Electrical Protection
- IX. CONSTRUCTION GEOMATICS
 - A. Basic Layout
 - 1. Equipment and Setup
 - B. Topographic Maps
 - 1. Contours
 - C. Calculations
 - 1. Horizontal Distances
 - 2. Vertical Controls and Monitoring
- X. PROJECT ADMINISTRATION
 - A. Procurement of Resources
 - 1. Subcontractors
 - 2. Materials
 - 3. Equipment
 - B. Duties/Responsibilities
 - 1. Construction Management and Engineering Job Descriptions
 - 2. Organizational Chart
 - 3. Design, Procurement, and Construction Team
 - 4. Craft Trade Descriptions

- | | |
|--|---|
| <ul style="list-style-type: none"> C. Project Site Mobilization <ul style="list-style-type: none"> 1. Site Layout Considerations 2. Shop Drawings, Product Data Submittal, and Review Process 3. Contract Clauses, Changes, Claims, Dispute Methods 4. Quality Control, Inspection, and Government Regulations D. Project Site Administration | <ul style="list-style-type: none"> 1. Human Resources 2. Project Documentation E. Project Closeout <ul style="list-style-type: none"> 1. Punch Lists, Substantial Completion, Occupancy 2. Documentation Turnover 3. Final Payment/ Completion F. Environmental Controls <ul style="list-style-type: none"> 1. Sustainability 2. Storm Water 3. Hazardous Materials |
|--|---|

SAMPLE QUESTIONS FOR THE LEVEL I (AC) EXAM

1. Which of the following documents will help the owner or owner's representative in assembling a list of responsible builders for bidding on a project?
 1. Addenda
 2. Pre-qualification Data
 3. Request for Proposals
 4. Pre-bid Meeting Minutes

2. Which of the following activities should be considered for compressing a project schedule?
 1. Critical
 2. Least cost
 3. Long duration
 4. Maximum float

3. If the thickness of reinforced concrete slab is 5", what is the MAXIMUM size aggregate to be used?
 1. ½"
 2. ¾"
 3. 1"
 4. 1 ½"

Answers to sample questions: 1.2, 2.1, 3.3

REFERENCES FOR THE LEVEL I (AC) EXAM

The following references may be of some help in preparing for the Level I (AC) Examination. You do not need to have read any or all of these books to do well on the exam, but they may be helpful as you study.

The list does not attempt to include all references, nor is the exam necessarily based on these references.

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CONTENT OVERVIEW – LEVEL II (CPC) EXAM

The Level II - Professional Constructor Certification Examination is a two-part written examination that takes 8 hours to complete. All questions are multiple-choice, objective questions.

The number of questions may vary from year to year but will never be more than 200 questions.

The Level II (CPC) Examination is weighted by subject category in terms of the percent of the total number questions as follows:

I.	PROJECT SCOPE DEVELOPMENT	20%
II.	EMPLOYMENT PRACTICES.....	5%
III.	WORKING RELATIONSHIPS.....	5%
IV.	CONSTRUCTION START-UP AND SUPPORT	8%
V.	CONSTRUCTION RESOURCE MANAGEMENT	18%
VI.	CONSTRUCTION COST CONTROL	18%
VII.	PROJECT CLOSEOUT	8%
VIII.	CONSTRUCTION SAFETY MANAGEMENT	12%
IX.	ETHICS.....	6%

CONTENT OUTLINE – LEVEL II (CPC) EXAM

The following is a breakdown of the major categories:

- I. PROJECT SCOPE DEVELOPMENT
This section focuses on the Professional Constructor's numerous roles as a project participant during the initial development of the project. It is now routine for owners to require Professional Constructors to participate from the onset of the project to solve increasingly complex construction problems. In many cases, the Professional Constructor's firm is the leader of the project and project professional, from concept to occupancy. Professional Constructors are thereby being required to take on new leadership roles for the entire project.
 - A. Project Participants' Roles
 - 1. Owner
 - 2. Architect
 - 3. Engineer
 - 4. Professional Constructor
 - 5. Government Agencies
 - B. Conceptual Estimating
 - 1. Assemblies Estimating
 - 2. Model Area Estimating
 - 3. Scope Development Classification Systems
 - C. Budget Monitoring
 - 1. Project Budget
 - 2. Construction Budget
 - 3. Contingency
 - D. Design Schedule
 - 1. Schematic Design Schedule
 - 2. Design Development Schedule
 - 3. Bid Scope Development Schedule
 - 4. Procurement and Lead-time Schedule
 - E. Design Review/ Recommendation Process
 - 1. Schematic Design Schedule
 - 2. Design Development Schedule
 - 3. Bid Scope Development Schedule
 - 4. Procurement and Lead-time Schedule
 - F. Cost Analysis Design Phases
 - 1. Value Engineering
 - 2. Value Analysis
 - 3. Life Cycle Costing
 - 4. Variance Analysis
 - 5. Constructability
 - 6. Feasibility
 - G. Site Analysis
 - 1. Environmental Conditions
 - 2. Site Conditions, Site Survey, and Geological Conditions
 - 3. Regulatory Agencies, Permits

- H. Bid Scope Development
 - 1. Trade Bid Packages
 - 2. Bid Breakdown and Proposal Form Requests
 - I. Bid Document Development
 - 1. Notice to Bidders, Instructions to Bidders, Addenda, General Requirements
 - 2. Pre-Qualification of Bidders
 - 3. Pre-Bid Meetings
 - J. Bid Analysis and Selection/Recommendations
 - 1. Construction Bid Scope Analysis
 - 2. Subcontractor and Vendor Evaluation
 - K. Construction Contracts and Construction Schedule
 - 1. Construction Contracts
 - 2. Construction Project Schedule with Lead Times, Inspections
- II. EMPLOYMENT PRACTICES
- This section concentrates on the ability to establish personnel requirements, implement policies and procedures, determine job descriptions, analyze EEOC and ADA requirements, interpret government regulations, write and enforce procedures, and communicate requirements to subcontractors and vendors.
- A. Employment Law
 - 1. Equal Employment Opportunity
 - 2. Americans with Disabilities Act
 - 3. Immigration Act
 - B. Discrimination Law
 - 1. Hiring Discrimination
 - 2. Employment Discrimination
 - 3. Sexual Harassment
 - 4. Hostile Work Environment
 - C. Management Responsibilities
 - 1. Management Liability
 - 2. Employment Documentation
 - D. Construction Labor Law
 - 1. Davis-Bacon Act
 - 2. Fair Labor Standards Act
 - 3. Norris-LaGuardia Act
 - 4. National Labor Relations Act
- 5. Labor-Management Relations Act (Taft-Hartley Act)
 - 6. Doctrine of Separate Gates
 - 7. Minority Goals
- III. WORKING RELATIONSHIPS
- This section is concerned with the ability to develop effective team building skills, assess team strengths and weaknesses, identify risk areas, resolve conflicts, minimize risks, review, update and improve team effectiveness, train and educate team, analyze performance problems, discuss performance, solve problems, conduct effective meetings, and resolve differences.
- A. Team Building Skills
 - 1. Leadership Qualities
 - 2. Team Strengths and Weaknesses
 - 3. Communication and Listening Skills
 - 4. Interpersonal Conflict
 - 5. Coaching Skills
 - B. Presentation and Facilitation Skills
 - 1. Meeting Preparation
 - 2. Meeting Leadership Skills
 - 3. Roberts Rules of Order
 - 4. Meeting Documentation
 - C. Problem Solving and Negotiation Skills
 - 1. Problem Identification/Root Causes
 - 2. Problem Solving Methods
 - 3. Dispute Resolution Skills
- IV. CONSTRUCTION START-UP AND SUPPORT
- This section centers on the ability to determine and analyze all procedural and documentation requirements for the project including field office procedures, material receiving, quality control systems, and submittal requirements.
- A. Project Site Set-Up
 - 1. Field Office(s)
 - 2. Material Receiving, Storage, Truck Routes, Lay Down and Staging Areas
 - 3. Temporary Facilities
 - B. Site Procedures
 - 1. Field Documentation Procedures

2. Public Relations
3. Submittal Schedule and Procedures
4. Quality Control Procedures
5. Sustainability Considerations

V. CONSTRUCTION RESOURCE MANAGEMENT

This section is concerned with the ability to monitor and control shop drawings, determine compliance with progress schedules, maintain ongoing project records, evaluate the effect of change orders, monitor and control materials, subcontractors, tools, and equipment, and evaluate performance of site personnel.

- A. Project Progress
 1. Submittals
 2. Production Control
 3. Project Records
- B. Material Control
 1. Design and Government Regulations
 2. Material Components and Unit Cost
 3. Procurement Process
- C. Subcontractor Control
 1. Subcontractor Progress
 2. Subcontractor Coordination
- D. Tools and Equipment Control
 1. Maintenance and Operation Records
 2. Equipment Production
 3. Operator Qualifications
- E. Personnel Control
 1. Qualifications Evaluation
 2. Performance Evaluation
 3. Training

VI. CONSTRUCTION COST CONTROL

This section focuses on the ability to compare expenditures and budget, evaluate the cost breakdown structure, allocate costs, determine progress, project cost overruns and cost savings, document contract change orders, interpret the contract provisions, calculate payroll burden, calculate the time-value of money, forecast

overhead, evaluate financial statements, determine the rights and responsibilities of each party, develop graphs, analyze the project using statistical measurements, prepare progress payment schedules, evaluate subcontractors' and vendors' progress payment schedules, forecast project resources, analyze cash flow, compare actual to budgeted, calculate profit margins, manage the risk, control equipment use, and assess personnel allocation.

- A. Cost Comparison and Forecasting
 1. Budgets and Cost Breakdown Structure
 2. Productivity Rates and Earned Workhours
 3. Forecast Costs at Completion
- B. Changes and Claims Impact
 1. Changes and Cost Impact
 2. Crashing and Schedule Impact
- C. Contract Interpretation
 1. Changes
 2. Notification
- D. Progress Payment Terms
 1. Subcontractor and Vendor Evaluation
 2. Partial Lien Releases
 3. Title/Ownership
- E. Financial Statements
 1. Financial Calculations and Ratios

VII. PROJECT CLOSEOUT

This section centers on the ability to create punch lists, finalize inspections, determine claims, analyze claims, resolve claims, demobilize the site, determine final draw and implement effective closeout procedures.

- A. Closeout Process
 1. Punch Lists
 2. Substantial Completion
 3. Final Completion
 4. Occupancy
 5. Commissioning Start-up and Owner Personnel Training
 6. Demobilizing Site
- B. Claims Closeout Procedures
 1. Resolution
- C. Documentation Turnover
 1. Warranty Protocol
 2. Owner and Operating Manuals

- 3. Project Record Documents (As-Builts)
- D. Final Payment Procedures
 - 1. Retainage
 - 2. Lien Releases
 - 3. Final Draw

VIII. CONSTRUCTION SAFETY MANAGEMENT

This section concentrates on the ability to interpret federal, state, and local safety and health legislation, establish effective safety processes, incorporate safety into the planning process, analyze workers' compensation records and experience modifiers, and evaluate jobsite safety, safety orientation programs and pre-task planning activities.

- A. Risk Assessment
 - 1. Accident and Injury Statistics and Costs
 - 2. Project Uncertainty and Risk Allocation
 - 3. Loss Ratio and Risk
- B. Workers' Compensation Costs and Liability
 - 1. Workers' Compensation and Experience Modification Rating
 - 2. Criminal Liability and Due Diligence
 - 3. Project Management Safety Liability
- C. Safety Process and Culture
 - 1. Behavior-Based Safety
 - 2. Safety Management Techniques

- 3. Safety Orientation
- 4. Pre-Task Safety Planning
- 5. Workplace Focused Safety (Drugs)
- D. Safety Procedures and Documentation
 - 1. General Duty Clause
 - 2. Multi-Employer Work Sites
 - 3. Written Documentation Requirements
 - 4. Confined Space Requirements
 - 5. Scaffolds
 - 6. Lock-out, Tag-out Requirements
 - 7. Hazardous Communication and MSDS
 - 8. Fall Protection and PPE
 - 9. Excavation

IX. ETHICS

This section focuses on the ability to identify deceptive practices, analyze breach of confidentiality, and define code of conduct of constructors and their relationships with clients, engineers, architects, vendors, subcontractors, general public, and employees.

- A. Business Ethics
 - 1. Bidding, Procurement and General Public/Media
 - 2. Reputation and Confidentiality
- B. Professional Practice Ethics
 - 1. Constructor Code of Conduct

SAMPLE QUESTIONS – LEVEL II (CPC)

1. An owner/client states the life expectancy to be designed into a 15' wide x 30' long on-grade link built between two warehouse facilities is 10 years. Which of the following wall systems is most appropriate, based on cost considerations?
 1. Structural steel columns, 6" metal studs, 26 gauge metal siding, and 6" batt insulation
 2. 6" load-bearing studs, 26 gauge metal siding, and 6" batt insulation
 3. 6" load-bearing studs, brick exterior, and 6" batt insulation
 4. Structural steel columns, 6" metal studs, brick exterior, and 6" batt insulation
2. Who is responsible for the storage of materials on the site during the construction phase?
 1. Subcontractor who signed the delivery receipt
 2. Supply company that did not get receipt signed
 3. All individuals sharing in the profits of the project
 4. Person specifically assigned responsibility in the contract documents
3. Subcontractors' bids for the mechanical work on an upcoming project are received. Sub A is low by \$10,000. Each bidder has completely covered the scope. Sub B mentions after the bids are opened that there is \$12,000 in the bid for pipe roller hangers that were not specified but were included in the bid because it would provide a better job for the owner. Which of the following is the most appropriate action?
 1. Issue a contract to Sub A based on the submitted bid
 2. Issue a contract to Sub B based on the submitted bid
 3. Ask Sub A to resubmit using the nonspecified hangers
 4. Reduce Sub B's bid by the additional \$12,000, eliminating the nonspecified hangers, and issue a contract

Answers to sample questions: 1.2, 2.4, 3.1

REFERENCES FOR THE LEVEL II (CPC) EXAM

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CONSTRUCTOR CODE OF CONDUCT

All exam applicants and certified constructors agree to uphold the following basic principles of professionalism and ethics.

- I. A Constructor shall maintain full regard to the public interest in fulfilling his or her professional responsibilities to the construction industry.
- II. A Constructor shall not engage in any deceptive practice or any practice that creates an unfair advantage for the Constructor or another.
- III. A Constructor shall not maliciously or recklessly injure or attempt to injure the professional reputation of others.
- IV. A Constructor shall insure that when providing a service that includes advice, such advice shall be fair and unbiased.
- V. A Constructor shall not divulge to any person, firm or company, information of a confidential nature acquired during the course of professional activities.
- VI. A Constructor shall carry out responsibilities in accordance with current professional practice.
- VII. A Constructor shall keep informed of new concepts and developments in the construction process relative to his or her responsibilities.