

## **AC 2008-2003: PROFESSIONAL CERTIFICATION IN CONSTRUCTION IN USA**

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# Professional Certifications in Construction in the USA

## Abstract

Professional certification is a voluntary process that recognizes the holder as possessing specialized or professional knowledge, competencies, and skills necessary to render professional services that will ensure public protection and safety. Given the wide range of expertise areas in the construction field coupled with the evolution in practice and acute shortage of trained personnel, opportunity abound for unqualified individuals to practice in the field endangering public protection and safety. There is therefore an urgent need for professional certification in the construction field in the USA.

Construction industry in the USA is one of the nation's largest industries employing nearly 10 million people that represent about 10% of the gross national product.<sup>1</sup> Some workers in the construction industry had different initial career choices and hence were not educated or trained in construction. Other workers started out in the trades and worked their way into management positions. Certification as a construction professional recognizes someone as possessing proven skills and the technical knowledge to professionally perform in the chosen expertise area. Organizations such as American Institute of Constructors (AIC)<sup>2</sup>, Construction Manager Certification Institute (CMCI)<sup>3</sup>, Construction Specifications Institute (CSI)<sup>4</sup>, and many others offer certification programs to the construction professionals. This paper will cover issues assorted with professional certification and identify various organizations, their certification programs, and requirements.

## Introduction

There are many benefits available to construction professionals that have certification. Being certified brings one the recognition of advanced level of achievement and proficiency in the chosen field of the construction industry. Certification increases advancement opportunities of individuals within their current organization as well as the construction industry. It is a standard by which those within an organization can assess themselves. Economic opportunities as well as opportunity for advancement may be increased as a result of completing any of a number of professional certifications.

Certification benefits not only the certified professional but all parties involved in the construction industry, including society. It provides an internally recognized certification of skills and level of professional knowledge. It also offers employers a way to analyze individual strengths and weaknesses as determined by the certification process. Enhancement of the professionalism to the public, client, and employer by the professional is a direct result of certification. Certification is a marketable credential for a professional to offer an employer, prospective employer or client. Some certification requirements provide a plan to systematically continue professional development in support of career advancement.

A person being certified as a construction professional is immediately identified as someone possessing proven skills and the knowledge to manage the construction process. As a certified industry professional, an individual will become part of the construction industry committed to the constant advancement of their skills and education to meet growing and complex industry challenges and changes. The available certifications provide a recognized level of skills and knowledge with an outcome of increased professional stature, while also providing an intangible asset to an employer, potential employer or client. These certifications also allow quicker entry into new job assignments or responsibilities.

## **Organizations**

Widely accepted certifications are normally offered by professional organizations. The following discussion covers just four of the better known and recognized construction organizations and the certificates they offer.

The American Institute of Constructors (AIC)<sup>2</sup> has used both education and experience to qualify applicants seeking its certification since when it began in 1971. The AIC Constructor Certification Commission was organized under the sponsorship and support of the AIC. The commission expanded the qualifying process to include examination and offering of certification process which is recognized internationally to AIC members and nonmembers alike. The certification process is developed with the support and input of peers with the objective of setting high standards for the education, knowledge, skills, and conduct of the certified constructor.

The Construction Manager Certification Institute (CMCI)<sup>3</sup>, an independent administrative body of the Construction Management Association of America (CMAA) administers the CM Certification Program. The Institute is comprised of construction management professionals governed by a Board of Governors who are responsible for procedures and policies affecting standards for professional certification and the determination of individual certification status of candidates enrolled in the CM Certification Program. CMCI's mission is "to recognize through certification, individual knowledge and experience that meet the established practices of Construction Management" and its vision is "to be the recognized authority in certifying managers of the construction process."<sup>3</sup> The Certified Construction Manager (CCM) program offered by CMCI is accredited by the American National Standards Institute (ANSI) and meeting international standards for its thoroughness.

The Construction Specifications Institute (CSI) is an association of construction industry professionals involved in the building design and construction of commercial and institutional projects such as specifiers, architects, engineers, contractors, building materials suppliers and others. The CSI has about 145 chapters and over 16,000 members nationwide. The Construction Specifications Institute provides continuing education, technical information and products, professional conferences, and product shows to enhance communication among all processes of building design and construction, and to meet the construction industry's need for a universal system of organizing and presenting construction information.<sup>4</sup>

The Association for Project Managers (APM) formed a standing committee on certification in 1998. Members were surveyed during the summer of 1998 to establish the range of members'

attitudes toward project manager certification and attain the members' opinions on the possible structure of a certification program as well as the cost and format. This survey was also used to solicit comments on certification on a broad-spectrum. These efforts resulted in the establishment of the APM Project Manager Certification Program.<sup>5</sup>

## **Certifications**

The American Institute of Constructors (AIC) offers two levels of certification for construction professionals. The first level that must be attained is the Associate Constructor (AC) designation. Candidates for this certification must have four years of acceptable education and/or have the experience equivalent to the amount of education at the time of application. The AIC certification commission will determine the amount of credit undergraduate and graduate degrees and acceptable work experience will receive toward meeting the pre-qualification requirement for taking the first examination, Construction Fundamentals: CQE, Level 1.

Candidates will qualify for the Certified Professional Constructor (CPC), after meeting the educational qualifications and passing or being exempted from the CQE Level 1 examination. It is also required of candidates to have seven years of acceptable professional experience beyond the requirement to sit for CQE, Level 1 at the time of application. The acceptable professional experience must include managing the execution of construction work for a minimum of two years.

The Construction Specifications Institute (CSI)<sup>4</sup> offers various certificates and certifications to construction professionals. The CSI certify professionals as Construction Documents Technologist (CDT), Certified Construction Specifier (CCS), Certified Construction Contract Administrator (CCCA), and Certified Construction Product Representative (CCPR).

Construction Documents Technologist (CDT) certificate candidates must demonstrate their knowledge of CSI's recommended practices in multiple subject areas. Knowledge of the construction process required includes construction contract types and modifications and substitution procedures. The contractual relationships information needed for this certification include rights, duties, and responsibilities as well as contract provisions and relationship and organization of construction documents. Applicants for the certification of CDT must also demonstrate knowledge of the use of construction documents including organizational formats and ability to interpret construction documents.

Certified Construction Specifier (CCS) candidates must exhibit knowledge of contractual relationships, document organization, and document preparation. Contractual relationships include contract types, agreements and conditions of the contract, and changes in the work. Document organization knowledge includes both construction and design documents, as well as general requirements and production techniques. Document preparation knowledge needed includes bidding documents and requirements, ability to specify techniques and applications, and specification writing. Qualifications for taking the CCS examination are that the candidate has passed the CDT exam, has prepared specification sections used in an actual construction project, and provide contact information for two design professional references who will confirm that the candidate has a minimum of at least five years experience in a construction design discipline.

Candidate for certification as a Certified Construction Contract Administrator (CCCA) must demonstrate their knowledge of construction contract administration, preconstruction activities and procedures, construction phase activities, construction observation procedures, and the process of project closeout. Construction contract administration includes documents used during construction, roles and relationships, and project delivery systems. Preconstruction activities and procedures are all of the preparations needed to ensure that a project runs as smooth as possible. Construction phase activities include construction phase submittals and construction phase meetings. Construction observation procedures consist of interpretation of contract documents, the project schedule and contract time, claims and disputes, contract modification procedures, measurement and payment, and quality assurance and quality control. The process of project closeout is made up of all of the procedures required to finalize a project. The general requirement to qualify for the CCCA examination is that the candidate has passed the CDT exam. While not a requirement, the CSI encourages candidates to have experience in the construction administration process at a minimum of two years.

Persons aspiring to be a Certified Construction Product Representative (CCPR) must display knowledge of construction product representation, preparation of construction documents, use of construction documents, and the construction process. Construction product representation is comprised of the principles of effective product representation and marketing and product information. The preparation of construction documents includes Division 01 concepts, specification techniques, and the preparation of technical specifications. The use of construction documents entails document organization and use, the bidding process, the substitution process, and construction product warranties and guarantees. Included in the construction process are bidding phase activities and construction phase activities. Candidates for the CCPR examination must have passed the CDT exam. They also must have experience in the representation of construction products totaling a minimum of two years, not including academics. Contact information for a manufacturer or employer must be provided as a reference to confirm that the candidate has had experience representing construction product for at least two years.



The Association for Project Managers (APM) offers certification as a Certified Project Manager (CPM). The APM Certification Committee has implemented a 10-year construction industry and a 5-year project management experience requirement before seeking certification. However, these periods may run concurrently. To become certified as a CPM all applicants must submit an essay on a specific project management topic of at least 2,500 words to the APM Certification Committee. The committee has established a two-year continuing education requirement. Activities included in the education requirement include, but are not limited to, in-house programs, college courses, professional seminars and workshops, and video tapes. An application containing information on specific projects they have managed and specific project management accomplishments is required from each applicant. Two written references, sent directly to APM from the person providing the reference, must present information on the applicant's accomplishments and performance.

The Construction Management Association of America (CMAA) offers certification as a Certified Construction Manager (CCM) through the Construction Manager Certification Institute

(CMCI), which is an independent administrative body of CMAA. The following materials are taken from the CMAA website.

1. Forty-eight months experience as a CM in the qualifying areas as defined by the Qualifications Matrix. This matrix represents the functions/roles of a Construction Manager during project phases as defined by CMAA in its publication CM Standards of Practice. The bracketed areas represent the minimum qualifying experience for the 48 month CM experience. This is cumulative experience; you do not need 48 months in each area.

CMAA Qualification Matrix<sup>3</sup>

<b>PHASE:</b> 	<b>Pre-design</b>	<b>Design</b>	<b>Procurement</b>	<b>Construction</b>	<b>Post-construction</b>
<b>FUNCTION/ROLE:</b> 					
Project Management					
Cost Management					
Time Management					
Quality Management					
Contract Management					
Safety Management					

2. One of the following:
  - a. An undergraduate (4-year BA/BS level) or graduate degree in construction management, architecture, engineering or construction science.
  - b. A 2-year undergraduate degree (AA/AS level) or certificate in construction management, architecture, engineering or construction science AND 4 years experience in general design/construction. (This experience is in addition to the 48 month CM requirement.)
  - c. No degree/certificate in construction management, architecture, engineering or construction science AND 8 years experience in general design/construction. (This experience is in addition to the 48-month CM requirement.)

A summary of the professional organizations, their certifications, and requirements is presented in the table below.

<b>Organizations</b>	<b>Certification(s)</b>	<b>Requirements</b>
1. American Institute of Constructors (AIC) <a href="http://www.aicnet.org">http://www.aicnet.org</a>	Associate Constructor (AC)	4 years of education or equivalent experience.
	Certified Professional Constructor (CPC)	AC designation and 7 additional years of experience.
2. Construction Management Association of America (CMAA) <a href="http://cmaanet.org">http://cmaanet.org</a>	Certified Construction Manager (CCM)	48 months experience and 1 of 3 other criteria.
3. Association for Project Managers (APA) <a href="http://www.apainfo.com">http://www.apainfo.com</a>	Certified Project Manager (CPM)	Essay no less than 2500 words on any PM topic, two-year continuing education, and two references.
4. Construction Specifications Institute (CSI) <a href="http://www.csinet.org">http://www.csinet.org</a>	Construction Documents Technologist (CDT)	Display knowledge of recommended practices.
	Certified Construction Specifier (CCS)	CDT and experience within past 5 years.
	Certified Construction Contract Administrator (CCCA)	CDT and 2 years of experience.
	Certified Construction Product Representative (CCPR)	CDT, 2 years of experience and reference.

## **Conclusion**

With a wide array of available certifications for construction industry professionals, advancement and economic opportunities are abundant. These certifications are not only good for the person being certified, but also becomes a viable asset for the company the professional works for. This certification will not only influence potential and current employers, but it will influence clients also. The status that a professional receives by attaining one or more of these certifications is also a plus within the industry. Whether a person chooses to become certified as a project manager, constructor, or construction manager, the benefits will be worth the time and effort.

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