



Certified
Commissioning
Professional

Candidate Handbook for the
Certified Commissioning Professional (CCP)
New and Recertifying Applicants



Certification by the Building Commissioning Certification Board | 2018



Candidate Handbook

This Candidate Handbook provides comprehensive information concerning the Certified Commissioning Professional Credentialing Program, offered by the Building Commissioning Certification Board.

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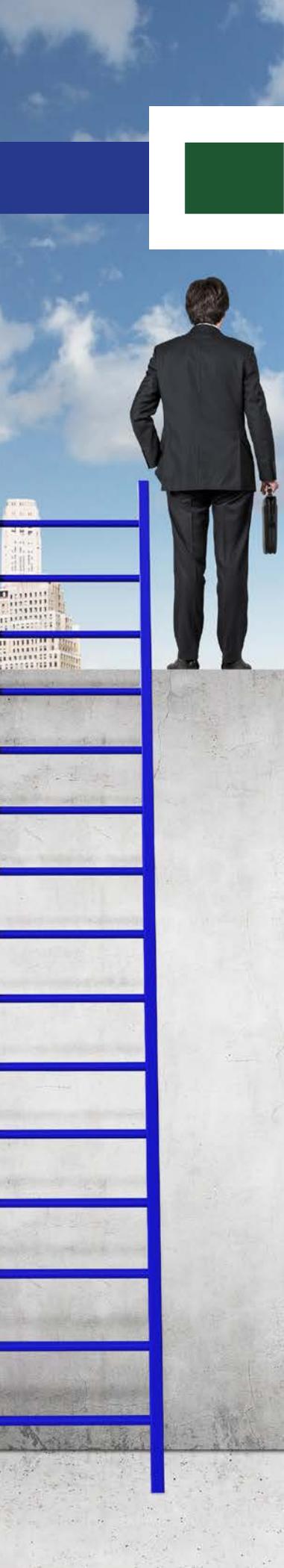
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Introduction

The Certified Commissioning Professional (CCP) is an individual who leads, plans, coordinates and manages a commissioning team to implement commissioning processes in new and existing buildings. This Candidate Handbook details the policies and procedures supporting the CCP credentialing program. To seek the CCP credential applicants must meet the mandatory experience requirements, the minimum education and training requirements, and agree to a series of questions concerning any professional or regulatory reprimands and related background information. Applicants must also agree to abide by the Code of Ethics, and to practice according to the Building Commissioning Association (BCxA) Essential Attributes of Building Commissioning. To earn the CCP credential, the candidate must take and pass the CCP written examination. To maintain the credential, CCPs must remain in good standing and meet recertification requirements.

THE BUILDING COMMISSIONING CERTIFICATION BOARD

The Building Commissioning Certification Board (BCCB) was formed in 2004 as an autonomous Board of Directors by the Building Commissioning Association (BCxA) for the purpose of recognizing building commissioning practitioners who demonstrate an established level of competence in the field, satisfy rigorous educational, training and experience requirements, and take and pass the CCP certification examination. Successful applicants are awarded a certification and have the right to use the Certified Commissioning Professional™ (CCP™) designation. The BCCB also recertifies certificants who demonstrate evidence of continued professional competence every three years. The BCCB is responsible for all aspects of the CCP Credential. This recognition is supported by the CCP Registry, providing a central source for the public, consumers, employers and government to confirm CCP credentialing.

CCP CERTIFICATION PROGRAM DEVELOPMENT

Since its inception the CCP program has been built and maintained in compliance with psychometric best practice as promulgated by international assessment/certification Standards, including the ISO, ANSI Standard 17024-2014, the *Standards for Educational and Psychological Testing*, developed jointly by the American Educational Research Association (AERA), American Psychological Association (APA), and the National Council on Measurement in Education (NCME), and the National Commission for Certifying Agencies (NCCA) *Standards for the Accreditation of Certification Programs*. Compliance with these Standards and guidance provides researched-based evidence that the CCP credential is valid, reliable, job-related, fair and legally-defensible. With support from recognized professional testing services providers, including Knapp and Associates, and Schroeder Measurement Services, Inc., the BCCB conducted Job Tasks Analysis research to provide a legally defensible link between what building commissioning practitioners do on the job to practice competently, and successful award of the CCP credential. As required in ISO Standard 17024, CCPs in good standing served as content experts and were tasked with translating the results of the Job Task Analysis (JTA) into defensible eligibility requirements, examination content and questions, examination forms and standards (passing scores) and recertification requirements. Ongoing psychometric analyses of the assessment materials helped to ensure that the assessments were job-related, reliable and valid.

INTRODUCTION

The 2015 iteration of the CCP credentialing program is reflective of the efforts of a national consortium of building commissioning experts, assembled to address the diversity of practice in this field, with the goal of conducting national research across certification bodies to define consistence and recognize competence in the role. Under the U.S. Department of Energy (DOE), the Better Buildings Workforce Guidelines (BBWG) effort was initiated and led by the National Institute of Building Sciences (the Institute), a congressionally-authorized non-profit organization whose mission is to support advances in building science and technology to improve the built environment. The Institute established the Commercial Workforce Credentialing Council (CWCC) to support the effort. The CWCC began by conducting a full-scale Job Task Analysis (JTA) of the role of the commissioning professional. The CWCC used the results of this JTA to develop a certification scheme that included program scope, eligibility, examination content areas and weighting, test specifications (e.g., length and format), psychometric requirements for assessments and cut scores, and reassessment requirements, with all scheme requirements in accordance with ISO Standard 17024:2012. Representatives of the Building Commissioning Certification Board were pleased to participate in the CWCC research and development activities. The CCP policies and procedures as outlined in this Handbook are in complete conformance to the JTA and Scheme the BCCB licensed from the Commercial Workforce Credentialing Council, a Council of the National Institute of Building Sciences™.

THE CCP CREDENTIAL PHILOSOPHY

The designation as a CCP is meant to assure stakeholders (the public, employers, consumers and regulators) that the credentialed commissioning professional has demonstrated an established level of competence in the field. Applying research performed in the development of the CCP credentialing program, applicants are measured against standards that reflect competence in the role as it is practiced today.

The goal of the CCP program is to:

- Provide a means for building commissioning professionals to demonstrate the critical knowledge, skills, and abilities necessary to serve the public trust and interest.
- Establish legally-defensible, valid and reliable criteria against which competence as a CCP may be measured.
- Encourage personal and professional growth.
- Recognize those who demonstrate and maintain competence as a CCP.
- Serve building owners and the public by encouraging high quality building commissioning services.
- Provide a registry of CCPs, serving the stakeholder need to identify Certified Commissioning Professionals.

Statement of Impartiality

The Building Commissioning Certification Board (BCCB) provides an objective and balanced certification awarding service. We adhere to transparent procedures based on ISO 17024, which contains built-in checks to ensure the objectivity of certification activities.

The BCCB is accredited by ANSI to the ANSI/ISO/IEC 17024:2012 standard. Registration number: 1191

In June 2016, the Certified Commissioning Professional (CCP) www.bccbonline.org/ccp was accredited by the American National Standards Institute (ANSI) www.ansi.org based on the International Standard ANSI/ISO/IEC 17024:2012.

This version of the standard along with adopting the Job Task Analysis and Eligibility Requirements from the Commercial Workforce Credentialing Council (a council of the National Institute of Building Sciences™ www.nibs.org) allowed the BCCB to submit and obtain this prestigious recognition. This further allowed BCCB to apply for and gain recognition under the Better Buildings Workforce Guidelines Program www4.eere.energy.gov/workforce/projects/workforceguidelines. The first commissioning certification in this program. Admittance to the Better Buildings Workforce Program means that all CCPs are recognized as qualified commissioning providers to deliver commissioning services to the federal funded projections. In addition, more local, state and national codes are adopting language to include certified commissioning providers that are accredited by a third party. Washington State was the first to adopt such language in there state energy code.

Becoming a Certified Commissioning Professional

To be considered for candidacy in the CCP program, applicants must:

- Assert—and be prepared to document—participation in a minimum of three commissioning projects of scope beyond one and two-family residential buildings. List a client reference for each of the three projects.
- Assert—and be prepared to document—a minimum education and experience requirement as detailed in the eligibility requirement matrix (commensurate experience may be recognized in lieu of education and vice-versa).
- Complete the online CCP application form, including providing acceptable responses to the Ethics Certification and Attestation, Privacy Policy opt in/out questions, and the Certification of Accuracy, and Agreement and Release Authorization, attesting to the assertions regarding professional experience, education and training, and confirming a commitment to abide by the Code of Ethics and the BCxA Essential Attributes of Building Commissioning.
- Submit the application fee.

To qualify for the CCP credential, within six (6) months of application being accepted, applicants must take and pass the CCP examination with a scaled score of 70 or better.

ELIGIBILITY REQUIREMENTS

Eligibility is determined based upon recognized education, training and experience related to the provision of building commissioning services. The BCCB recognizes that the pathway to the CCP credential is diverse, e.g., some professionals have a wealth of experience in engineering subjects; others come to serve as practitioners specializing in performance testing.

Eligibility is established by asserting/documenting the minimum education and experience requirements as described below.

Mandatory Experience Requirements:

To be considered for CCP candidacy applicants must participate in a minimum of three commissioning projects. The projects may not include one- and two-family residential buildings. Over the scope of services provided on the three projects the applicant must have participated in a minimum of six of the following eight activities:

1. Develop an Owner's Project Requirements/Current Facility Requirements (OPR/CFR)
2. Develop commissioning plan
3. Review of a design
4. Perform field verification
5. Oversee performance testing
6. Correction of deficiencies
7. Training
8. Prepare commissioning report

Note: For all three commissioning projects, applicants are required to provide a client reference to verify the project and the quality of the work. See Verification of Applicant Eligibility.

Education and Experience Requirement Matrix:

Recognizing a combination of education and experience, where completion of higher education requirements is accepted in lieu of experience and higher levels of experience are accepted in lieu of greater education, applicants must meet a minimum of education and experience as outlined in the table below:

Education	Experience
Licensed Architect or Professional Engineer	3 years' commissioning experience
Bachelor's Degree in the building sciences* or equivalent military training/service	5 years' commissioning experience
Associate/Technical/Vocational 2-year degree, non-building related Bachelors of Science Degree, or equivalent military training/service	8 years' building industry experience** with at least 5 of those years spent working in building commissioning.
High School Diploma, or GED	10 years' building industry experience** with at least 5 of those years spent working in building commissioning.

* Building science education is defined as mechanical engineering, electrical engineering, construction science, construction management, architecture and other majors/fields of study designed to train people for careers in the building industry.

** Building industry experience is defined as design, construction, testing and commissioning, code enforcement and operations.

APPLYING FOR THE CCP CREDENTIAL

As of September 1, 2018 to meet ANSI/ISO 17024:2012 requirements, candidates must now fill out Appendix A and B and have the forms signed by the appropriate individuals.

The CCP application is available online to download (see below). It is an interactive document designed to be downloaded and completed on the applicant's computer and submitted online or via postal service as shown below.

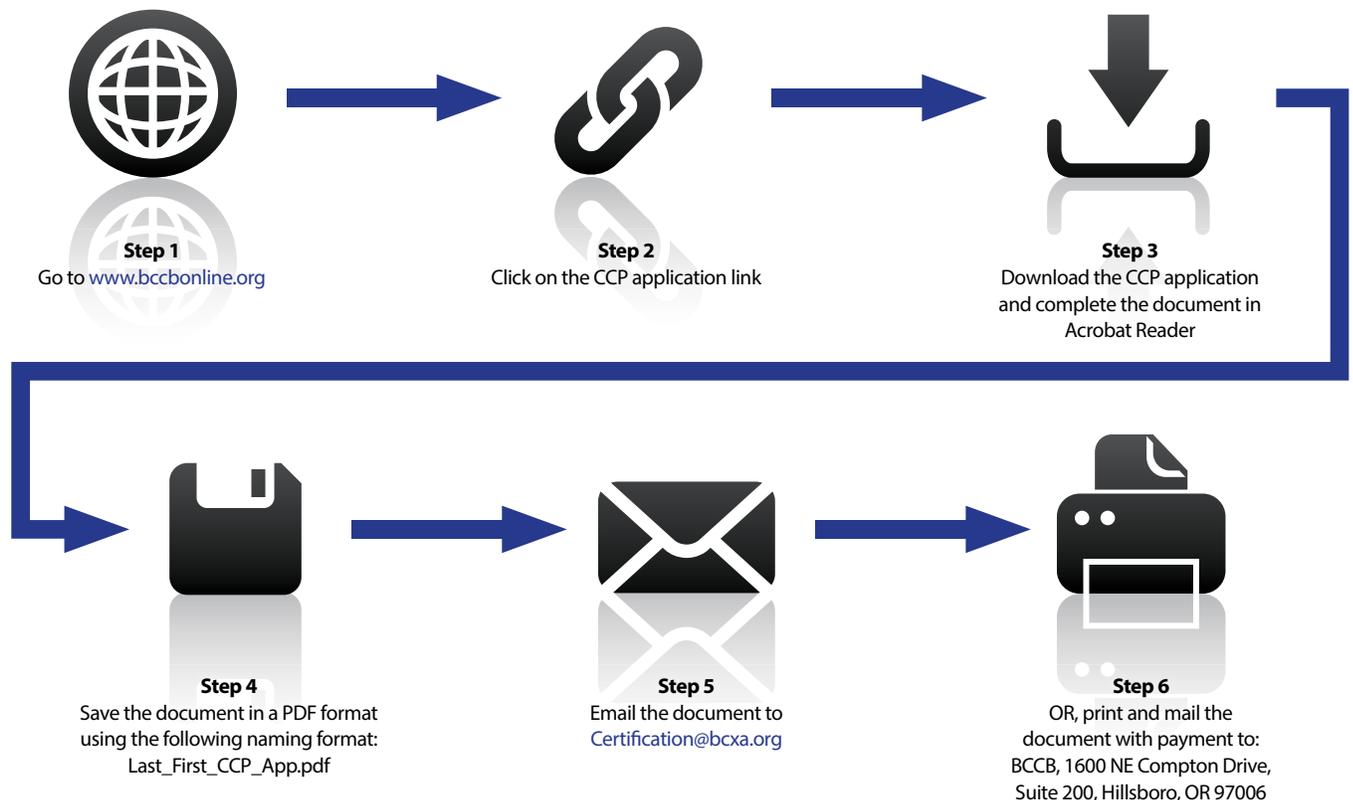
The CCP application must be filled out in its entirety and must include either a physical or electronic signature, both of which are considered binding. Appendix A of the Application will need to be given to your current employer to verify current and previous employment if applicable. Appendix B Project Verification can be completed with current projects and approved by your current employer or sent to individual clients or a project representative who has the authority to sign off on the work you performed. Applications will not be accepted without payment information.

Please see the application for complete fee information. All CCP related correspondence, scores, and certificates will be mailed to the candidate's preferred address, or sent via email, as indicated on the application.

The application process is as follows:

Applications will be processed within fifteen (15) business days of receipt. If an application is approved, applicants will receive email instructions concerning examination registration procedures and testing options.

THE APPLICATION PROCESS



Application Information Changes

If the name, mailing address, email address, and/or telephone number entered on the CCP application changes during the application process, applicants must notify the BCCB in writing no later than six (6) days after such change of information. Applicants are responsible for reporting changes, as important correspondence is sent throughout the process, and an application or examination registration may be forfeited in case of contact errors. Also, applicants must notify the BCCB in writing, in case of a legal name change: Please note that the name on the identification documents presented at the test site must match the name on file at the BCCB.

Certification of Accuracy, Agreement and Release Authorization

Applicants are required to attest and certify the veracity and accuracy of the application, and to agree to abide by the Code of Ethics and BCxA Essential Attributes of Building Commissioning, both of which are included in this document as Appendix C and D, respectively. Any misrepresentation or misconduct related to the application or examination may result in disqualification or revocation of certification. By applying for the CCP credential, applicants agree to the terms set forth in the application and this Candidate Handbook regarding certification requirements and the examination.

DENIAL OF APPLICATION

Applicants submitting incomplete applications will be notified in writing of the deficiencies, and provided thirty (30) days to address issues as described. If the applicant does not complete the application in the 30 day window the applicant will be notified the application is denied and it will result in a forfeiture of 50% of the fee. Applicants choosing to withdraw from consideration for CCP candidacy will receive a refund of 50% of the fee. Withdrawal requests must be put forth in writing within ten (10) days of the date postmarked/date of submittal of the application. Applicants suspecting that they may not meet CCP eligibility requirements are strongly encouraged to contact the CCP Certification Manager prior to submitting an application. Failure to respond to the BCCB during the thirty (30) day period will result in forfeiture of 50% of the fee. A new application and full fee must be submitted should the applicant wish to apply for CCP candidacy at another time.

If an application is denied at the end of the deficiency/correction review cycle, applicants may appeal the decision. The applicant must request a final application review in writing to the BCCB Appeal and Discipline Committee. This request must describe in detail, including supporting evidence, why the denial was made in error. The Committee will review the application and make a final decision—relayed to the applicant in writing—within sixty (60) days of receipt of the appeal.

VERIFICATION OF APPLICANT ELIGIBILITY BY THE BCCB

The BCCB reserves the right to verify the experience and education attested to by the applicant. This may be accomplished by a phone interview with employers and/or client references, or through verification of education/training transcripts or certificates. Additional documentation may be requested to support the application attestations.

SPECIAL TESTING ACCOMMODATIONS

The BCCB grants reasonable accommodations for applicants with documented disabilities in compliance with the Americans with Disabilities Act. If special assistance or arrangements are required, the following protocol must be followed:

A request for accommodations must be made by the candidate when the CCP application is submitted. This request must include a complete description of the requested accommodation.

Documentation of the disability, as diagnosed by a qualified health care professional, must accompany the accommodation request.

Applicants requesting accommodations may be contacted by the BCCB to discuss the disability and requested accommodation. In conference with a psychometrician, with consideration of examination security and examination administration guidelines, a reasonable accommodation will be made. Applicants will be notified in writing of the accommodations to be offered.

Appealing Decisions on Special Accommodations:

While it is the BCCB policy to accommodate special needs requests whenever possible, in the unlikely case that the BCCB denies a request for special testing accommodations, the candidate has the right to appeal the decision according to the following policy and procedure:

1. The Candidate must submit a Special Testing Accommodations Form to appeal the decision. The request must include documentation from a qualified health care professional who has diagnosed the disability about why the denial for special accommodations will have a negative impact on the candidate's ability to perform successfully on the examination.

The BCCB Appeal and Discipline Committee will review the appeal within thirty (30) days of receipt, and in conference with its testing administrator and psychometric experts will consider the accommodation request in light of operational considerations and the need to maintain the security of the examinations.

The Candidate will receive written notice of the Committee's decision.

EXAMINATION REGISTRATION

Once a CCP application is approved, applicants will receive official notification by the BCCB of their right to register to take the examination, and instructions on how to do so. The application approval notification will include a username and password to be used on the Iso-Quality Testing website to register for a testing date. Applicants have a six (6) month window in which to take the exam after approval. The CCP examination is offered at over 250 test sites in the U.S. and Puerto Rico, U.S. Territories, Canada and various sites outside of North America. Test sites operate in all 50 states and most are open Monday-Saturday from 9:00 a.m. - 9:00 p.m., and Sundays from 1:00 p.m. - 6:00 p.m., excluding holidays. These sites are operated by the BCCB testing contractor, Schroeder Measurement Technologies (SMT) and its subsidiary Iso-Quality Testing: information concerning the city and states where testing centers are located may be found at www.isoqualitytesting.com, by clicking on "Locate a Testing Center." Note, access to more specific information including site addresses, directions and available testing times are provided upon approval of the CCP application.

BECOMING A CERTIFIED COMMISSIONING PROFESSIONAL

Once approved to sit for the CCP examination applicants have six (6) months in which to pass the examination. Re-submittal of a new application is required if the accepted candidate does not pass the examination within six (6) months. Applicants will receive correspondence directing them to:

1. Navigate to the testing contractor home page: www.IQTTesting.com
2. Use the option "Examination Registration" and select the organization: BCCB
3. Select the Exam: CCP
4. Enter the provided Username and Password to login: These are:
5. Username: (Your e-mail address)
6. Password: Unique CCP applicant password

After logging in, please follow the on-screen instructions to scheduling an appointment. Note, applicants must test within six (6) months of receipt of application approval. For assistance, click on the "Contact Us" tab on the home page and then send a message to the testing company customer service, or call (toll free in USA and Canada) 866.773.1114, or (other countries) +1 727.733.1110.

RESCHEDULING AN EXAMINATION REGISTRATION

IQT Candidate Rescheduling/Cancellation with Approved Excuse

With an approved excuse rescheduling/cancellation may occur. An approved excuse includes a death of an immediate family member, active military orders, jury duty or an official physician's excuse on medical letterhead. Candidates must provide written documentation to support the excuse.

Greater than five (5) Days Prior

With notice, a candidate wishing to cancel or reschedule a scheduled examination five (5) or more calendar days prior to their scheduled examination date, excluding the date of the examination, will be charged \$25.00. Candidates pay a \$25 rescheduling fee directly to the testing organization.

Less than five (5) Working Days Prior

With notice changes or rescheduling made within five (5) days in advance of the scheduled administration date will result in the full rescheduling fee. Contact the BCCB office.

Without Notice

Failure to appear at any scheduled examination site without contacting IQT or the BCCB or failure to reschedule an examination date within the six month examination window will result in forfeiture of the examination fee included in the application fee. The fee for rescheduling a missed examination administration appointment is shown in the application. Applicants who miss more than one (1) registered examination without rescheduling will have to reapply.

RETESTING

Applicants who fail the CCP exam the first time may retake the exam an addition two (2) times within the six (6) months from their original approval date for candidacy. To retest candidates must fill out the CCP Exam Retest Form found on the website and pay a \$150 processing fee. Upon receipt of the \$150 fee candidates will receive an email from the testing center with a new password to schedule a date and time to take your exam. Should a candidate fail all three times they must wait a minimum of thirty (30) days before re-submitting a new application to be reconsidered for candidacy to the program.

FEES

All fees can be found on the CCP Application, which is located on the website.

Should an application be denied, the application fee will be reimbursed, less a processing fee of 50% of the application fee as stated above. Likewise, applicants requesting a withdrawal from consideration will be refunded the application fee less a 50% processing fee.

CCPs in good standing may request a duplicate copy of their CCP Certificate by submitting a request along with a fee of \$25.00. The duplicate certificate will be noted as such, and may only be displayed according to the rules governing the use of the mark and logo.

USE OF THE CCP MARK

The CCP certification mark and logo are the property of BCCB. Permission to use the certification mark or logo is granted to certified persons (CCPs) at the discretion of the BCCB, for permissible uses only. A candidate who passes the examination will receive a certificate suitable for framing and will have the right to claim the mark of a Certified Commissioning Professional (CCP) according to the following policy:

Persons Authorized to Use the Marks

Use of the CCP marks and logos is limited to those persons who have been granted the CCP designation by the BCCB and who satisfy all maintenance and recertification requirements established by the BCCB.

Use of the mark and logo by individuals who have not been granted and maintained the certification is expressly prohibited: The BCCB will take legal action to protect against the misuse of the CCP mark.

Non-assignability and Non-transferability

Permission to use the certification mark is limited to the certified person, and shall not be transferred to, assigned to, or otherwise used by any other individual, organization, or entity.

Mark and Logo Use

Persons who have been granted permission to use the certification mark and logo shall do so pursuant to the rules and guidelines established by BCCB. Persons granted permission to use the certification mark and logo must familiarize themselves with the established rules and guidelines for use and must execute approved agreements setting forth such rules and guidelines for use.

The CCP program mark and logo may not be revised or altered in any way. They must be displayed in the same form as produced by BCCB and cannot be reproduced unless such reproduction is identical to the mark provided by BCCB.

The mark or logo may be used only on business cards, stationary, letterhead, social media, and similar documents on which the name of the certified individual is prominently displayed.

The mark or logo may not be used in any manner that could bring the BCCB into disrepute or in any way be considered misleading or unauthorized. The mark or logo may not be used in any manner that would imply an invalid connection between the BCCB and the certified person's business. This includes any use of the mark or logo that the public might construe as an endorsement, approval, or sponsorship by the BCCB of a certified person's business or any product or service thereof.

Suspension or Revocation of Permission to Use Mark or Logo

The BCCB retains the right, at its sole discretion, to suspend or revoke any permission to use its certification mark or logo. In most circumstances, when the BCCB is informed that a person is misusing the certification mark or logo, the BCCB will provide the person notice of the misuse and a reasonable opportunity to comply with BCCB rules and guidelines. However, the BCCB retains the right to suspend or revoke privileges without notice and an opportunity to correct, particularly when the violation is of a gross nature and more immediate action is necessary to stop misuse.

Actions taken by the BCCB to suspend or revoke use of the certification mark shall be communicated in writing to the person whose privileges are being suspended or revoked and to all other persons affected by the decision. The BCCB may also publicize its actions and/or sanctions on its website and any other of its publications. Should any person continue to use the CCP mark or logo after notice of suspension or revocation, the BCCB shall seek full equitable and/or legal remedies through a court of competent jurisdiction.

NON-DISCRIMINATION POLICY

The BCCB does not discriminate in the participation in the CCP Certification Program and prohibits discrimination against its applicants, certified persons, employees, and volunteers on the bases of race, color, national origin, age, disability, sex, gender identity, religion, and where applicable, political beliefs, marital status, or sexual orientation.

PRIVACY/CONFIDENTIALITY POLICY

The BCCB has created and abides by a strict privacy/confidentiality policy demonstrating its firm commitment to CCP candidate and certificant privacy. The policy applies to all aspects of the CCP credential including the secure handling and storage of application materials, examinations, scores and candidate and certificant records. The BCCB and its agents shall keep confidential all applicants' and certified persons' information (including name, address, telephone numbers, examination scores, and other confidential records) unless authorized for release by the applicant, candidate, or certified person.

It is the policy of the BCCB that Non-Disclosure protected information may NOT be released to or shared with:

- Any member of the public unless there is applicable statutory exception or written release from the CCP candidate or certificant.
- Any member of the BCCB unless the recipient has a legitimate interest for the use of that protected information to perform a service (i.e. committee work).

Furthermore, BCCB staff with access to protected information is expected to protect that information from unauthorized disclosure. This includes, as appropriate:

- Computer Systems and Applications Security: Central processing units, peripherals, portable storage devices, operating system, applications software and data.
- Physical Security: The premises occupied by the BCCB or contractors using computer equipment storing or having access to Protected Information.
- Operational Security: Environmental control, power equipment, operational activities related to operations.
- Procedural Security: Established and documented security processes for information technology staff, vendors, management, and individual users of Protected Information.
- Network Security: Communications equipment, transmission paths, switches, terminals and adjacent areas.

CCP Registry and Publication of Status:

- The BCCB maintains a Registry of CCPs in good standing on the website. CCP Applicants have the option of opting in/out of participation in the Registry. Stakeholders may contact the BCCB either in writing or by phone to ask if a professional is a CCP in good standing. No other information will be provided.



Preparing for the Examination

EXAMINATION DEVELOPMENT

The content validity (relevance), fairness and accuracy of the CCP examination are assured, and the BCCB strives to make the examination process as transparent as possible in keeping with the security requirements of the psychometric process. The BCCB, working with a professional testing company, mandates that all aspects of the examination development, administration, scoring and reporting adhere to international professional standards and guidelines establishing assessment and certification best practice. This body of standards provides a means for ensuring that the assessment and credentialing process is a fair measure of competence and is legally-defensible.

The examination content outline is based upon the Job Task Analysis (JTA) Study performed by the Commercial Workforce Credentialing Council (CWCC); the JTA will be revalidated on a periodic basis. The most recent study findings were implemented in the spring of 2015, and utilized a full-scale survey methodology inviting a representative sampling of building commissioning practitioners to provide their opinions on what competent building commissioning practitioners do on the job. This research was performed under the direction of a panel of building commissioning Subject Matter Experts (SMEs) representing the full complement of diversity in the field providing a documented link between the content of the examination and practice on the job. The examination content outline and weighting derived from this JTA is included in Appendix A.

The passing standard (cut score) for the CCP examination was determined using best practices methodologies involving a representative panel of CCPs in good standing and empirical judgments (Angoff method). New forms and versions of the examination are systematically implemented to protect the integrity and security of the examination program and to conform to testing industry standards. Each new examination form contains a significant percentage of new questions that are unique to the new form. Psychometric procedures are used to score the examinations in compliance with relevant technical guidelines. The CCP examination reports scores using a scaled score model for all examinations. Raw scores are placed on a 0-100 scale with 70 reported as the passing score on all examinations. Score scaling is a common psychometric practice, used on many examinations including the GRE, ACT and Engineering Certification examinations.

Ongoing item writing, item review, examination and question analyses are conducted to ensure that the validity, reliability and other psychometric characteristics of the examinations conform to testing industry standards. New questions written by CCPs in good standing are reviewed multiple times, verified to an approved reference, and linked to the examination content outline. All questions undergo statistical review to ensure that they operate properly. All of these activities are overseen by professional test developers and psychometricians provided by the BCCB's testing service. The BCCB is highly confident that the validity of content, the reliability of the test instruments, and the measurement processes employed to analyze, score and establish reporting scores are of the highest caliber and are in compliance with industry standards.

EXAMINATION DESIGN, SCORING AND REPORTING

The CCP examination is comprised of 120 four-option multiple-choice questions, administered in a computer-based examination format. Applicants are allotted two (2) hours in which to complete the exam. Each multiple-choice question has four answer choices; only one answer choice is correct. The examination may include commissioning scenario-based questions: for each scenario a set of two or more questions may be asked. The examination is written from the perspective that the applicant is a third-party, independent commissioning authority. Sample questions can be found in Appendix B. It is a closed-book examination. Applicants have access to an on-screen calculator at all times during the examination, and will be provided with scratch paper that will be collected after the test administration. Applicants are encouraged to read the questions carefully, choosing the single best response. Applicants are advised to first answer the questions that they are sure of, returning to the more difficult questions as time allows. Credit is given only for questions that have responses. Questions left blank will be scored as incorrect. There is no penalty for guessing. Candidates may post comments concerning individual test questions during the examination. The time taken to post comments is subtracted from the two (2) hour time limit. No individual response will be given for a comment, but comments are considered during psychometric review and may be reviewed in the case of an examination appeal. At this time the examination is offered in English only.

1. At the end of the testing session, a computer-generated preliminary score report will be issued. This score is provisional, pending statistical verification that will take place within seventy-two (72) hours. If applicants do not hear from the BCCB or its testing provider within that time period, they may assume the score stands as reported. Applicants passing the examination will receive notification of passing, but will not receive a numeric scaled score.
2. Failing applicants will receive a scaled score, along with a diagnostic report indicating content areas of weakness. The report is designed to provide a tool for study preparation for retaking the examination.
3. At certain times within the test development process, scores may be withheld pending test/question statistical review. In that case official scores are sent via USPS from the BCCB home office.
4. Examination scores will be provided only to the candidate, and will NOT be provided over the phone, fax, or internet.
5. The examination score is based upon the total number of correct responses that represent competence. Scores are unrelated to the performance of other applicants taking the examination. If all applicants taking the test are competent, all will pass. If none are competent, none will pass.

SUGGESTED REFERENCES – CCP EXAMINATION PREPARATION

The BCCB provides a suggested reference list as a resource that may be useful to supplement the education and experience related to competent performance as a CCP. Applicants are encouraged to review resources and information in content areas where skills or knowledge may be weak, keeping in mind that some content areas on the examination are weighted more heavily than others. The BCCB does not recommend that applicants memorize all recommended references. The information tested on the examination pertains to the common body of knowledge which is delineated in the CCP examination Content Outline.

The BCCB does not endorse any particular text or author. This list is not intended to be inclusive, but reflects references used to support the test development process. Use of the references does not guarantee successful performance on the examination.

Suggested reading from the following organizations:

- ASHRAE Guidelines and Standards such as:
 - Guideline 1-2013 The Commissioning Process
 - Guideline 1.1-2007 HVAC&R Technical Requirements for the Commissioning Process
 - Guideline 1.5 2012 The Commissioning Process for Smoke Control Systems
- The Building Commissioning Association, such as:
 - Building Commissioning Handbook, 2nd Edition, www.bcxa.org
 - BCxA Best Practices and Essential Attributes, www.bcxa.org

ADDITIONAL OPPORTUNITIES FOR STUDY AND EXAMINATION PREPARATION

The Building Commissioning Association offers education and training to support the commissioning professional and is independent of the BCCB. The BCCB provides no training nor educational materials, and it is important to note that applicants for the CCP are not required to purchase training or education materials from the BCxA in order to pass the examination.

Attendance at BCxA sponsored courses is not a prerequisite to sitting for the CCP examination. The courses are not designed to serve as examination preparation classes, nor do they serve any ancillary examination-related purposes. More information about educational opportunities may be found at www.bcxa.org. Education/training courses are neither designed nor marketed to provide the level of detailed review of technical knowledge required for examination preparation. In addition, many applicants find it helpful to:

1. Review the test content outline in Appendix A and self-assess those tasks and duties, the regular practice of that skill, and the percentage of questions that will be devoted to that area, scaling study efforts to focus on areas of weakness.
2. Review resources; the references listed above may be helpful for reviewing the content areas included in the examination. (The reference list is provided for possible use as a study aid only. The BCCB does not intend the list to imply endorsement of specific documents.)
3. Answer the sample questions in Appendix B to gain familiarity with the type and format of questions that will appear on the examination.

ACRONYMS USED ON THE CCP EXAMINATION

The following table lists all acronyms that appear on the CCP examinations, with their extensions. Candidates are expected to be familiar with the acronyms on this list, as no extensions will be included on the examinations.

ACRONYM	EXPANSION
ACH	Air Exchanges Per Hour
AHU	Air Handling Unit
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
BCxA	Building Commissioning Association
BMS	Building Management System
CA	Commissioning Authority
CFR	Current Facilities Requirements
CO2	Carbon Dioxide
EUI	Energy Use Index
FCU	Fan Coil Unit
FIM	Facility Improvement Measure
FPT	Functional Performance Test
HVAC	Heating, Ventilating, and Air Conditioning
P&ID	Piping and Instrumentation Diagram
M&V	Measurement and Verification
MOP	Method Of Procedure
RFI	Request for Information
TAB	Test, Adjust, and Balance
VAV	Variable air volume
VE	Value Engineering
VFD	Variable-Frequency Drive

EXAMINATION ADMINISTRATION RULES AND REGULATIONS

The Examination Administrator or Proctor is the BCCB's designated agent for administering a secure and valid examination. Any individual found by the BCCB or its agent to have engaged in conduct which compromises or attempts to compromise the integrity of the examination process will be subject to disciplinary action as sanctioned by the BCCB and delineated in the Code of Ethics and the BCCB policies and procedures. Examinations are administered according to a strict protocol to ensure the security of the examination and to protect the right of each candidate to a standardized testing experience. In addition to the attestation on the CCP application, as a prerequisite to distribution of examination materials, applicants are required to sign a Security Affidavit agreeing to abide by all rules and regulations, including the following:

- During the registration procedures at the test site, applicants must sign the test roster and provide two forms of government-issued identification, one of which must include a photograph, such as a driver's license or passport.
- No books, papers, texts, references, or calculators are allowed into the examination room. Scratch paper and a pencil will be provided for use during the examination, and will be collected by the test proctor after testing. An on-screen calculator will be available during testing. No electronic devices of any kind are permitted in the testing room. If any are found, the candidate will be disqualified. Personal belongings should not be brought to the testing site. If they are, they will be placed in a secure location, and may not be accessed by the candidate during the examination.

PREPARING FOR THE EXAMINATION

- No food or drink is allowed in the examination site. Applicants with a specific medical condition (e.g., hypoglycemia, pregnancy, diabetes) requiring the consumption of water or food during the examination period must submit a written request to the BCCB for a special accommodation prior to the examination.
- Visitors are not permitted in the examination room.
- At no time during the examination may applicants give or receive help to one another, or communicate in any way. Examination Proctors have the authority to remove a candidate suspected of cheating from the examination room, at which time scores will be cancelled, and disciplinary action will be taken.
- Applicants are expected to follow all instructions from examination proctors, printed in test booklets and answer sheets, and/or displayed in the computer-testing program. Applicants will be provided with the opportunity to ask questions prior to beginning the examination.

The computer-delivered examinations include a detailed five-minute tutorial program designed to give applicants confidence in the use of the program, as well as familiarity with the system prior to beginning the examination. The tutorial questions are for demonstration purposes only, and do not impact examination scores. Applicants are encouraged to take the time to complete the tutorial as it explains the features of the computerized testing system. The candidate name and the name of the examination will be shown at the upper left corner of the screen. If either of these is incorrect, applicants are asked to inform the proctor. A navigation grid is posted on the upper right of the screen, depicting the number of questions on the examination, and the status of those questions (answered, bookmarked for review, or skipped). A digital clock is also posted indicating a countdown of available time. Registered applicants may take a sample test (content is not building commissioning-related) before going to the test site by accessing the testing contractor's website using the following link: <https://www.iqttesting.com/Default.aspx?FunctionSampleExam&Exam=8>

For each examination question, candidates have the opportunity to post comments. These comments are considered during psychometric reviews by subject matter experts. Time taken to post comments counts against the overall examination timing.

Applicants will be provided with access to an on-screen calculator during testing. Applicants may leave the testing room with express permission from the proctor. Applicants must sign out and sign in from the room and must surrender all testing materials when they exit. Exit from the testing room is permitted for washroom and drinking fountain visits only. Applicants may not access cell phones, nor may they leave the building during breaks. Test timing is not paused for these breaks.

Disqualifying behaviors include:

- Creating a disturbance
- Aiding or asking for aid from another candidate
- Any attempt to remove copy, buy, sell, or reproduce testing materials
- Unauthorized possession of test materials
- Impersonation of another candidate
- Use of contraband materials or equipment in the testing site
- Any falsification or misrepresentation of information provided during the CCP application process

BCCB POLICY ON FRAUD

The BCCB maintains strict policies to safeguard the security of the examination through the administration. Any individual who removes, or attempts to remove, examination materials from the testing site, including memorizing examination questions, is subject to prosecution in addition to sanctions that may include removal of certification and restrictions on future access to the examination. Should the BCCB determine evidence of cheating, it reserves the right to invalidate test scores and mandate retesting.

Examination Appeals and Disciplinary Actions

The BCCB is committed to providing a fair process for appeals and disciplinary action for any applicant or certified person. The Appeals and Discipline Committee shall consider all appeals and complaints and take action according to the following rules and regulations.

GROUNDINGS FOR EXAMINATION APPEAL

Examination applicants have the right to appeal examination results within the following specified criteria established by the Committee.

Applicants may appeal examination results in situations restricted to extraordinary circumstances that were properly reported to the Examination Administrator and the BCCB and:

- Arise coincidentally with the examination administration
- Are outside the control of the applicant
- Made the applicant's experience different from other candidates' (related to the examination administration) AND/OR affected the applicant's ability to receive credit for a test question (related to the examination content)
- Were severe enough to account for examination failure

Unless all of the above circumstances are met, no circumstance will be considered grounds for appeal.

If written documentation of the extraordinary circumstances is not received by the BCCB within five (5) working days of a computer-administered examination, applicants forfeit the right to appeal. Candidates are allowed time and opportunity to comment on individual examination questions, and the overall testing experience. These comments are reviewed and taken into consideration during psychometric reviews of the examinations and their overall reliability and validity. However, to maintain the security of the examinations, candidates are not able to review the examination, nor have access to the examination key or performance information on individual questions.

PROCEDURES FOR EXAMINATION APPEALS

An appeal shall be submitted to the Committee within five (5) working days of a computer administered examination. The appeal must be in writing and detail the nature and events of the appeal. Mail or courier the appeal along with a non-refundable \$50 fee to:

Building Commissioning Certification Board

Attn: Certification Manager
Examination Appeal
1600 NE Compton Drive, Suite 200
Hillsboro, OR 97006

A representative of the BCCB staff and a member of the Committee shall determine the validity of the appeal based upon the submitted documentation.

EXAMINATION APPEALS AND DISCIPLINARY ACTIONS

Notification will be sent by mail within ten (10) business days of receipt of the appeal whether the appeal has been accepted or denied. All communication from the Committee will be mailed to the address stated on the submitted appeal. Accepted appeals will be brought to consideration by the Committee.

Only appeals brought forth for consideration by the Committee and BCCB representative will be reviewed. The review will take place within thirty (30) days of receipt of the appeal.

The Committee shall review the following:

- The statement of appeal
- A statement from the BCCB representative concerning the exam process relative to the appeal
- Test Center reports and comments submitted at the time of the examination

The applicant will be notified of the decision by registered mail within fifteen (15) business days of the committee meeting.

No member of the Committee will communicate directly with an applicant. Communication concerning the appeal will be made between the BCCB staff and the applicant.

Examination Appeal Decisions Options

The Committee may put forth the following decisions based upon evidence presented:

- Grant the appeal
- Deny the appeal
- Deny the appeal and grant the applicant an attempt at the examination without additional cost

All decisions of Appeal and Discipline Committee are final.

A passing score is required for award of credentials in all instances. Failure to pass the examination may not be appealed.

GROUNDS FOR CERTIFICATION REVOCATION

The Committee may, at its discretion, suspend or revoke a certificate for cause. When the Committee has evidence that charges against a certification holder are valid, the Committee shall notify the certification holder by certified mail at his or her last known address. The certification holder will have the opportunity to present his or her defense to the Committee in writing according to the terms outlined in the policy. The suspension or revocation shall remain in effect until the board reviews the case. The Committee has the right to revoke certification if it has substantiated that a CCP has:

- Falsified information on the CCP application
- Misappropriated examination questions or materials
- Provided fraudulent information on the certification examination or assisted other applicants with their exam
- Misused or misrepresented the CCP credential
- Violated the Code of Ethics of the CCP
- Failed to recertify
- Violated any of the BCCB's policies, rules or requirements
- Was found guilty of violating the law with respect to professional responsibilities by a court, licensing agency, or registration agency

PROCEDURES FOR DISCIPLINARY ACTION

Anyone may submit a complaint about a certificant. A complaint should be submitted to the Committee as soon as possible but no later than thirty (30) days after the incident. The complaint must be in writing and detail the nature and events of the complaint. Mail or courier the complaint to:

Building Commissioning Certification Board

Attn: Certification Manager
1600 NE Compton Drive, Suite 200
Hillsboro, OR 97006

A representative of the BCCB staff and a member of the Committee shall determine the validity of the complaint based upon the submitted documentation.

Notification will be sent by mail within ten (10) business days of receipt of the whether the complaint will go before the whole Committee for a decision. All communication from the Committee will be mailed to the address on file for the CCP.

Complaints brought forth for consideration by the Committee and the BCCB representative will be reviewed within thirty (30) days.

The applicant will be notified of the decision by certified mail within fifteen (15) business days of the Committee meeting.

No member of the Committee will communicate directly with a CCP or the party filing the complaint. All communication concerning the complaint will be made by the BCCB staff.

DISCIPLINARY DECISIONS OPTIONS

The Committee may put forth the following decisions based upon evidence presented:

- Reprimand
- Reprimand with a corrective action plan
- Revocation of certification

All decisions of the Appeal and Discipline Committee are final.



CCP Recertification

Initial Certified Commissioning Professional (CCP) certification remains valid for a period of three (3) years from the date printed on the CCP certificate. Renewal of CCP certification involves completing a recertification application every three (3) years and being approved for recertification by the Building Commissioning Certification Board (BCCB) and the Recertification Committee. To be recertified, CCPs must show evidence of continued competence, demonstrated by continued work experience and other related professional development activities. The BCCB will communicate with the CCP six (6) months prior to the end of the certification period, with information about submission of the recertification documentation.

EXPIRATION DATE AND RENEWAL

The recertification requirements to be met by the end of the three (3) year cycle are effective immediately upon certification. This credential has a rolling effective date unique to each certificant depending on when they pass the CCP Examination. Therefore, the expiration/renewal due date is unique to each certificant as well. It is the last day of the month in which the candidate passed the CCP examination.

Certificants are responsible for submitting completed recertification applications to the BCCB thirty (30) days prior to the expiration date. The recertification fee is non-refundable, and acceptance of a fee payment does not guarantee or imply that an individual's certification will be renewed.

The continuing education of CCPs is essential to maintaining professional competence in the rapidly changing field of building science. Certified persons wishing to recertify must meet the recertification requirements listed below.

MANDATORY RECERTIFICATION REQUIREMENTS

Applicants must participate in one (1) commissioning project in three (3) years and earn a total of 50 points over the course of three (3) years. Of the 50 points 25 of them must be earned from continuing education. The second 25 points can be earned from a variety of options.

1. The certificant must participate in implementing the commissioning process for a minimum of one (1) project. No points awarded.
2. The certificant must complete a minimum of 25 Continuing Education (CE). CE is a process used by certified persons to maintain and advance their competency. Only CEs that include proof of attendance from a third party qualify. CE includes education/training received and may be obtained from several sources, including:
 - Webinars - 1 point per hour of attendance
 - Conference Session - 1 point per hour of attendance
 - Workshops - 1 point per hour of attendance
 - College Credit (traditional or online) – 10 points per college credit
 - Training online or in person – 1 point per hour of attendance

OTHER QUALIFYING RECERTIFICATION REQUIREMENTS

In addition to the 25 mandatory points certificants must earn an additional 25 points from the following options, or combination of options.

1. Participate as a team member on a commissioning project of a non-residential new or existing building: 10 points. (This is in addition to the mandatory requirement.)
2. Continuing Education (CE): Only CEs that include proof of attendance from a third party qualify. Up to 25 CEs may be obtained from this option. CE includes education/training received and education/training given, and may be obtained from several sources, including:
 - Webinars – 1 point per hour of attendance; 2 points per hour as presenter for the first presentation, then 1 point per hour for subsequent equivalent presentation
 - Conference Presentation -1 point per hour of attendance; 2 points per hour as presenter for the first presentation, then 1 point per hour for subsequent equivalent presentations
 - Workshops – 1 point per hour of attendance; 2 points per hour as presenter for the first presentation, then 1 point per hour for subsequent equivalent presentations
 - College Credit (traditional or online) – 10 points per college credit
 - Training online or in person – 1 point per hour of attendance; 2 points per hour as a presenter for the first presentation, then 1 point per hour for subsequent equivalent presentations.
3. Certification Exam Development: Includes contributing to the development of the Certified Commissioning Professional certification examination by participating in the following test development activities: Job Task Analysis study; item writing workshops; item review and/or passing score studies; 2 points awarded for 1 hour of participation—up to 25 points.
4. Regulatory Work: Participation in development or maintenance of regulatory standards. Participation includes providing testimony, official review, and/or appointment as a committee member. Includes regulatory compliance analysis and support lent to legislation/regulation for support of building commissioning professionals (not lobbying); 1 point awarded for 1 hour of participation – up to 10 points.
5. Retest: Take and pass the current CCP Examination: 25 points.
6. Publications: Must be related to the industry, which is defined as design, construction, testing and commissioning, code enforcement and operations; published article in a peer-reviewed industry journal – 5 points per article, up to 10 points.

The BCCB does not maintain a running record of Continuing Education (CE) Credits during the three (3) year certification period. CCPs are personally responsible for maintaining a record of CE credits accrued and must submit this information at the time of renewal.

VERIFICATION OF CERTIFICANT DOCUMENTATION BY THE BCCB

The BCCB reserves the right to verify the experience and/or CEs attested to by the certificant. This may be accomplished by a phone interview with employers and/or client references, or by requesting copies of training transcripts or certificates. Additional documentation may be requested to support the application attestations. Failure to produce supporting documentation when requested may result in revocation of certification.

Noncompliance with Recertification Requirements

SUBMISSION OF RECERTIFICATION DOCUMENTATION

To be considered for Recertification CCPs must submit application attesting to having earned the required 50 CE credits during the three (3) year recertification period.

The CCP Recertification application is available online on the website, at www.bccbonline.org. It is an interactive Microsoft Word document designed to be downloaded and completed on the applicant's computer.

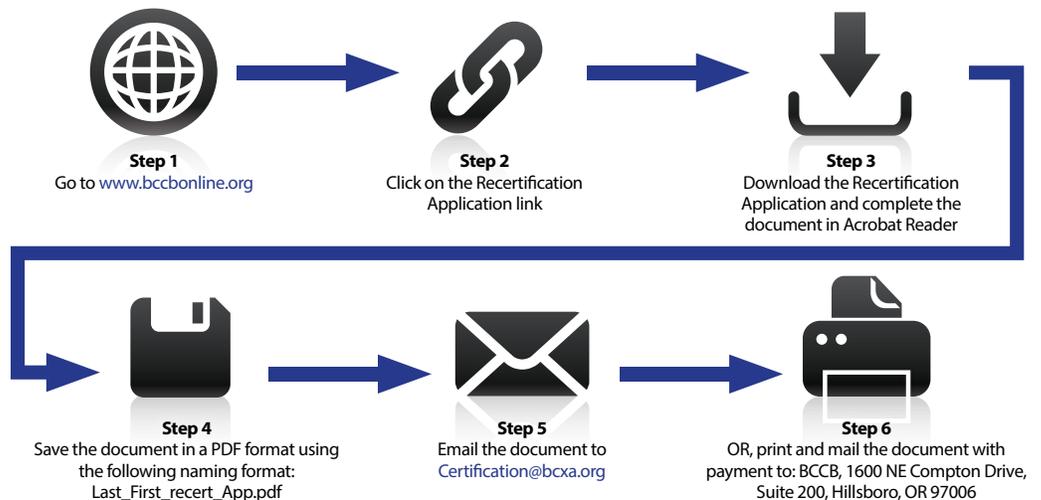
The CCP recertification application must be filled out in its entirety, and must include either a physical or electronic signature, both of which are considered binding. Applications will not be accepted without payment information.

Please see the Fee Section of the recertification application for fees. All CCP related correspondence, scores, and certificates will be mailed to the candidate's preferred address, or sent via email, as indicated on the recertification application.

The application process is as follows:

Recertification application will be processed within thirty (30) days of receipt.

THE APPLICATION PROCESS



CERTIFICATION OF ACCURACY, AGREEMENT AND RELEASE AUTHORIZATION

Applicants are required to attest and certify the veracity and accuracy of the recertification application, and to agree to abide by the Code of Ethics, and BCxA Essential Attributes of Building Commissioning, both which are included in this document as Appendix C and D, respectively. These documents are also available for download from the website. Any misrepresentation or misconduct related to the recertification application may result in disqualification or revocation of certification. By applying for recertification of the CCP credential, applicants agree to the terms set forth in the application and this Handbook regarding recertification requirements.

DEFICIENCY NOTICE

Within five (5) days after the certification has expired, a Notice of Deficiency is sent to individuals who have not submitted a Recertification Application. Such individuals are classified in the Board's records as "not certified" and are no longer a CCP in good standing in the registry and are not authorized to use the CCP marks. The notice advises how the certificant can recertify and that late fees will be assessed. Prompt action should be taken to correct any deficiency. Continued use of the marks in such circumstances is viewed by the Board as unauthorized use. The Board considers unauthorized use an extremely serious matter and is prepared to take necessary steps to protect its certification marks in such cases.

Applicants submitting incomplete recertification applications will be notified in writing of the deficiencies, and provided thirty (30) days to address issues as described. If the recertification application is not complete within the thirty (30) day window, the BCCB will provide notification that the credential is revoked.

Failure to respond to the BCCB during this thirty (30) day period will result in forfeiture of all recertification application fees and revocation.

If an application is denied at the end of the deficiency/correction review cycle, applicants may appeal the decision. The applicant must request a final application review in writing to the BCCB Appeal and Discipline Committee. This request must describe in detail, including supporting evidence, why the denial was made in error. The Committee will review the application and make a final decision—relayed to the applicant in writing—within sixty (60) days of receipt of the appeal.

DENIAL OF RECERTIFICATION

The BCCB maintains a Recertification Committee to evaluate recertification applicants and denials of recertification. The Recertification Committee is responsible for reviewing denials or unusual circumstances associated with interpreting the recertification requirements, and will notify a CCP in writing, should a recertification application be denied. In case of a denial, a CCP may appeal the decision to the recertification committee in writing, including a description and evidence supporting why the decision was made in error. The committee will consider the appeal within thirty (30) days of receipt, and will review the information provided, The CCP will be provided with written confirmation of the committee decision. All committee decisions are final.

REINSTATEMENT AND LATE FEES

All documentation of applicable recertification requirements must be received by the Board prior to the expiration date. If not, reinstatement/late fees are assessed per the table below. In addition, additional prorated recertification requirements apply as listed below:

1-3 months	8.5 CE units	\$100
4-6 months	17 CE units	\$200

Late recertification applications received six (6) months after certificate expires (121 days or longer) must reapply for certification.

FEE SCHEDULES

See the CCP Recertification Application for the fee schedule.

EXTENSION OF RECERTIFICATION FOR SPECIAL CIRCUMSTANCES

In the case of special circumstances such as illness or military service, CCPs may request a recertification extension. A request for extension must be received in writing by the BCCB Recertification Committee at least thirty (30) days prior to the date of recertification. The Committee will consider the circumstances and will issue an opinion on whether the extension will be granted. The opinion will be provided to the CCP in writing. All decisions of the Committee are final.

While a CCP is under the extension, the use of the CCP mark is prohibited and their name will not be included in the BCCB Registry of CCPs in good standing. CCPs wishing to reinstate their good standing must make up all required CE requirements from the initial three-year recertification period in addition to those credits missed during the period of the extension. Should the extension go beyond a three-month period, CCPs are responsible for earning additional CE units based on the following formula:

4-6 months	8.5 CE units
6-12 months	17 CE units
13-18 months	25.5 CE units
19-24 months	34 CE units

CCPs under recertification extension for longer than twenty-four (24) months must provide documentation and explain actions taken during the extension to show good standing in the industry and earn a total of 100 CE points, including a mandatory 25 points earned for retaking and passing the CCP examination. Once the recertification application is received and accepted the CCP under recertification extension will receive notice of reinstatement, and permission to being using the CCP mark.

Appendix A

CCP EXAMINATION CONTENT OUTLINE

The following pages include a detailed outline of the content areas and commissioning tasks and skills evaluated in the examination, with an indication of the approximate number and percentage of examination questions devoted to each of the seven major content areas.

Please note that questions from the various content areas will be mixed throughout the examination. The questions will NOT be presented in content area order on the examination.

FINAL EXAM Blueprint for Building Commissioning Professional Duties and Tasks		FINAL WEIGHT	FINAL ITEMS
A	Managing Commissioning Projects	18%	22
1	Identify the scope of the project	1%	1 to 2
2	Develop a commissioning team	1%	1 to 2
3	Manage a commissioning budget	1%	1 to 2
4	Identify commissioning deliverables	1%	1 to 2
5	Participate in VE activities	1%	1 to 2
6	Review project documents	1%	1 to 2
7	Monitor the construction/project schedule	1%	1 to 2
8	Participate in project meetings	1%	1 to 2
9	Conduct commissioning meetings	1%	1 to 2
10	Track deficiencies (issues log)	2%	2
11	Facilitate risk assessment as it relates to commissioning activities	2%	2
12	Assess pass/fail criteria for functional test results	3%	4
13	Identify tasks for completion of commissioning processes	2%	2
B	Preparing Commissioning Documentation	19%	23
1	Assist in developing the OPR/CFR	1%	1 to 2
2	Create system/equipment list	1%	1 to 2
3	Create commissioning process tracking matrices	1%	1 to 2
4	Develop the commissioning plan	2%	2
5	Develop commissioning schedules	1%	1 to 2
6	Develop communications plans	1%	1 to 2
7	Create commissioning specifications	1%	1 to 2
8	Write system verification checklists	2%	2
9	Create FPTs	3%	4
10	Determine site visit protocols (logistics)	0%	0
11	Develop issues logs	1%	1 to 2
12	Document commissioning meetings	1%	1 to 2
13	Write commissioning reports	2%	2
14	Create systems manuals	1%	1 to 2
15	Develop end of warranty review processes	1%	1 to 2

APPENDIX A

FINAL EXAM Blueprint for Building Commissioning Professional Duties and Tasks		FINAL WEIGHT	FINAL ITEMS
C	Conducting Commissioning Activities	24%	29
1	Plan commissioning construction activities	7%	7 to 8
2	Monitor commissioning construction activities	7%	7 to 8
3	Facilitate the completion of construction checklists	3%	4
4	Facilitate the acceptance phase	7%	7 to 8
D	Managing Training Activities	4%	5
1	Develop training plan	2%	2
2	Facilitate training coordination meeting	1%	1 to 2
3	Facilitate training activities	1%	1 to 2
4	Conduct training follow-up activities	0%	0
E	Completing Warranty Phase Activities	5%	6
1	Facilitate off-season testing	1%	1 to 2
2	Troubleshoot facility issues	1%	1 to 2
3	Measure energy performance	2%	3
4	Facilitate end of warranty meeting	1%	1 to 2
F	Conducting Existing Building Commissioning	23%	28
1	Determine Scope of Project	2%	1 to 2
2	Conduct a building performance assessment	3%	4
3	Prepare a CFR	2%	1 to 2
4	Conduct a systems assessment	3%	4
5	Conduct a site investigation	3%	4
6	Recommend corrections and improvements	3%	4
7	Oversee implementation of corrective measures	3%	4
8	Conduct performance verifications	4%	5
G	Conducting Ongoing Commissioning	7%	8
1	Measure IEQ performance	1%	1 to 2
2	Evaluate building systems performance	1%	1 to 2
3	Review building operating plan	1%	1 to 2
4	Review maintenance activities	1%	1 to 2
5	Accommodate space/function changes	1%	1 to 2
6	Implement corrective actions	1%	1 to 2
7	Publish measurement and performance results to stakeholders	1%	1 to 2

Appendix B

SAMPLE QUESTIONS

These questions are examples of the content, form and format of the questions appearing on the examination.

- 1. What document is most helpful for identifying the acceptance criteria needed when writing functional test procedures? (Domain B9)**
 - A. Architect's program
 - B. Basis of design
 - C. Commissioning plan
 - D. Design intent

- 2. The commissioning authority has been given a complete set of project drawings and specifications. During the review of submittals, a technical error is found. One of the commissioning authority's first actions should be to (Domain A6):**
 - A. Ask the mechanical contractor to correct error.
 - B. Ask the supplier to make changes.
 - C. Document the error and inform the commissioning team.
 - D. Reject the submittal with comments on errors.

- 3. What documents should be used to develop functional performance tests? (Domain A6)**
 - A. Owner's design intent, project specifications, industry guidelines, and approved submittals
 - B. Manufacturer's listing of inspections and testing used on factory testing and acceptance
 - C. Test procedures used on the previous project for similar equipment
 - D. The commissioning plan on the last project completed for this client

- 4. A test and balance report has been submitted without documentation of domestic hot water recirculation readings. What action should the commissioning authority take to address this omission? (Domain A13)**
 - A. Reject the report for being incomplete.
 - B. Review the specification to determine if domestic water systems are included in the test and balance scope.
 - C. Return report to contractor with a request to complete domestic hot water recirculation balance.
 - D. Request mechanical contractor to submit a test report for domestic hot water recirculation system.

- 5. Functional performance testing of the specified components has been successfully completed. What is the next step in the commissioning process? (Domain B4)**
 - A. Submit the final commissioning report.
 - B. Perform owner training.
 - C. Test inter-relationships between systems and subsystems.
 - D. Recommend beneficial occupancy.

Answer Key: 1-D, 2-C, 3-A, 4-B, 5-C

Appendix C

CCP CODE OF ETHICS

As a condition of earning and maintaining certification, applicants for the CCP certification must agree to uphold and abide by the Code of Ethics, the tenets of which are set forth as follows:

1. Exercise a reasonable industry standard of care in the performance of professional duties.
2. Perform professional duties with trust, integrity, and honesty.
3. Hold paramount the health and safety of the public in the performance of professional duties.
4. Work in a manner consistent with all applicable laws and regulations; demonstrate integrity, honesty, and fairness in all activities; and strive for excellence in all matters of ethical conduct.
5. Act with integrity in any relationship that involves an employer or client and disclose fully to an affected employer or client any conflicts-of-interest resulting from business affiliations or personal interests.
6. Represent qualifications accurately and honestly.
7. Offer products and services only in areas where competence and expertise will satisfy the client and public need.
8. Agree to comply with and uphold all policies, procedures, guidelines, and requirements of the certification program; only use the designation as authorized in the approved manner; acknowledge the certificate and marks are the property of the BCCB; and return the certificate and discontinue use of the designation and marks when required to do so.
9. Accept responsibility for maintaining the credential through recertification and continuously uphold the Code of Ethics.
10. Voluntarily and immediately report any felony convictions or other legal dispositions that would constitute violations of this Code of Ethics that have not already been disclosed, regardless of when they occurred, and report any conditions that prohibit fulfillment of duties as set forth in the competence requirements.

Appendix D

Below are the Essential Attributes of the Building Commissioning Association (BCxA). These Attributes have been adopted by the BCCB, and as a condition of candidacy and certification as a CCP you must affirm your willingness to abide by the BCxA Essential Attribute tenets.

BCxA ESSENTIAL ATTRIBUTES

(REV 04/2018)

The BCxA believes that diverse and creative approaches to commissioning benefit the discipline of building commissioning¹ and its clients. Therefore, this document focuses on identifying critical commissioning attributes and components, rather than attempting to dictate a rigid commissioning process. The attributes described herein are called “essential”, because the BCxA believes that they are, in fact, essential to every effective commissioning process. Applying additional commissioning best practices may enhance the process or add commissioning value. However, the BCxA believes that not including any of these Essential Attributes renders a process that becomes something other than formal commissioning². As a result, all BCxA members agree in writing to incorporate all of the Essential Attributes of Building Commissioning into every project for which they serve as a project’s Commissioning Provider, as defined in this document.

In order to clarify context for these Essential Attributes, and because the scope of commissioning varies between projects, the BCxA defines the basic purpose of commissioning as follows: It is the BCxA’s premise that, “The basic purpose of building commissioning is to provide documented confirmation that building systems³ function in compliance with criteria set forth in the Project Documents⁴ to satisfy the Owner’s operational needs. Commissioning of existing systems may require the development of new functional criteria in order to address the owner’s current systems performance requirements.”

The Essential Attributes of building commissioning are:

- 1. The Commissioning Provider (CxP)⁵ is in charge of the commissioning process and makes the final recommendations to the owner regarding functional performance of the commissioned building systems.**
- 2. The CxP is an objective, independent advocate of the Owner. If the CxP’s firm has other project responsibilities, or is not under direct contract to the Owner, a conflict of interest exists. Wherever this occurs, the CxP discloses, in writing, the nature of the conflict and the means by which the conflict shall be managed.**

¹ In this document, the term “building commissioning” refers to commissioning of complete buildings, building systems, and process systems located with the building.

² The BCxA recognizes that some projects may benefit from services and deliverables that do not include all of the Essential Attributes of Building Commissioning. While such scopes of work may add value to a project, the BCxA does not recognize them as complete commissioning processes. However, it is not the intent to restrict BCxA members from performing such services when they are clearly described as something other than full commissioning.

³ The systems that must be commissioned for a functionally successful project may vary depending on the nature of the project; therefore, specific systems to be commissioned are not listed as essential attributes. However, as a means of maximizing indoor environmental quality and minimizing global environmental impact, the BCxA encourages total building commissioning, including mechanical, electrical, plumbing, automation and building enclosure systems.

⁴ In this document, the term Project Documents refers to planning and programing documents, as well as construction documents such as drawings, specifications, submittals, operating procedures and other documents relevant to the construction and operation of the building systems.

⁵ The term Commissioning Provider (CxP) is used in this document. Different terms, such as Commissioning Agent, Authority, Manager, etc., may be used in other documents and by other organizations.

- 3. In addition to having good written and verbal communication skills, the CxP has current engineering knowledge, and extensive hands-on field experience regarding:**
 - Building systems commissioning,
 - Technical knowledge of building systems,
 - Building systems start-up, balancing, testing and troubleshooting,
 - Operation and maintenance procedures,
 - The building design and construction processes,
 - Automated control systems and control logic.
- 4. For each project, the commissioning purpose and scope are clearly defined in the CxP contract.**
- 5. The CxP recommends the commissioning roles and scope for all members of the design and construction teams be clearly defined in:**
 - Each design consultant's contract,
 - The construction manager's contract,
 - General Conditions of the Specifications,
 - Each division of the specifications covering work to be commissioned, and
 - The specifications for each system and component for which the suppliers' support is required.
- 6. Each project is commissioned in accordance with a written commissioning plan that is updated as the project progresses. The commissioning plan:**
 - Identifies the systems to be commissioned,
 - Defines the scope of the commissioning process,
 - Defines commissioning roles and lines of communications for each member of the project team, and
 - Estimates the commissioning schedule.
- 7. On new building commissioning projects, the CxP reviews systems installation for commissioning related issues throughout the construction period.**
- 8. All commissioning activities and findings are documented as they occur. Issues are tracked through resolution and acceptance. These reports are distributed as they are generated and included in the final report.**
- 9. The functional testing program objectively verifies that the building systems within the commissioning scope of work perform interactively in accordance with the Project Documents. Written, repeatable test procedures, prepared specifically for each project, are used to functionally test components and systems in all modes of operating conditions⁶. These tests are documented to clearly describe the individual systematic test procedures, the expected systems response or acceptance criteria for each procedure, the actual response or findings, and any pertinent discussion.**
- 10. The commissioning authority provides constructive input for the resolution of system deficiencies.**

⁶ Often called functional tests, performance tests, or functional performance test procedures (FPTs), these tests are traditionally focused on confirming that systems function or perform in accordance with clearly defined acceptance criteria, while documenting sufficient data to clearly document a baseline of operation. For more complex or experimental systems, they may also be designed for fine tuning and to establish what the baseline of operation should be.

11. Every commissioning project is documented with a commissioning report that includes:

- An executive summary including an overview of the implemented commissioning process, the systems commissioned, the major findings and the operating condition of the systems at the completion of functional testing,
- Issues that were discovered and the measures taken to correct them,
- Unresolved operational issues that were accepted by the owner, along with related recommendations,
- Operational and ongoing commissioning recommendations⁷ based on information discovered during commissioning,
- Functional test procedures and results,
- Reports that document all commissioning field activities as they progress, and
- A description and estimated schedule of required deferred testing

⁷ By the 2nd decade of the 21st century, 2 decades after the Essential Attributes of Building Commissioning were originally adopted, it has become clear that many commissioning stakeholders find tremendous value in using commissioning to facilitate the efficacy of turning over new systems from the installing contractors to the building operating staff. As 2020 approaches it is becoming more common for owners to request services such as training by the CxP on information discovered during commissioning and confirming as a part of the commission process that critical operating resources and documentation are provided as a condition of project completion. While this might not be essential for the effective commissioning of all projects it is recommended as good practice for many projects.



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