

# ASPE Certification Methodology

Since the early 1980's, the American Society of Professional Estimators, ASPE, organization has continually refined the criteria for establishment of examinations for achieving the status of Certified Professional Estimator. ASPE's Certification Methodology shall serve to clarify ASPE's examination process and program requirements for Certified Professional Estimator.

Psychometric testing refers to the process of measuring a candidate's relevant strengths and weaknesses in a valid, reliable and fair method consisting of the following components; validity, development of assessment specifications, test construction, maintenance of a test item database, pass/fail standards, standardization and uniformity, maintenance of security, overall assessment analysis, score reporting, appeals and due process, and record retention. The psychometric exam is employed to assess a fit for certifying an individual as a top performer in the construction estimating industry. The basic purpose in using psychometric testing is to gain an accurate bearing of the candidate's cognitive abilities in estimating well enough to certify them as leaders of the estimating industry in their relative construction discipline.

Certification by ASPE represents the intersection of protection of the public, fairness to candidates, and certainly, various interests of the profession. ASPE has accomplished the highest level of professionalism in the promotion of validity and reliability, and subsequently, fairness by establishing the Certification program through psychometric examination. To be a Certified Professional Estimator is to attain the highest form of professional recognition an estimator can receive in the construction industry. The CPE demonstrates the ability to perform their duties in the most ethical and professional manner possible by having the experience and credentials to qualify to apply, pass two psychometric standardized and uniform examinations and prepare a paper showing the level of knowledge and skills needed to competently conduct their work responsibilities as a high level professional in their discipline.

Becoming a CPE is about showing sufficiency of evidence that there is due cause to award such a title. ASPE Certification Exams achieve the objective of identifying the core knowledge, critical work functions, job tasks and subtasks and relevant knowledge, skills and abilities that are common across a representative sampling of current practitioners or job incumbents. The Certification exam is designed to evaluate the CPE candidate's overall knowledge of estimating. It includes quantities, contract terms and conditions, cost reporting, ethics, and other fundamentals of estimating.

Each candidate seeking certification must meet five basic requirements; a minimum of five years experience, completion of an orientation workshop, technical writing abilities, communication skills, and successful completion of Certification examinations. The Certification Board then evaluates each of the criteria for conformance to the program. As soon as approved applicants submit their applications they are assigned a number and are only known and referenced by that number from that point on for the sake of complete autonomy.

The Certification Board constantly maintains a thorough technical and content review of the test components to ensure proper content validity. The tests include a four hour General Estimating Knowledge Exam, (GEK) and an eight hour Discipline Specific Test, (DST). The DST concentrates on specific practices such as General Contracting, Mechanical, Electrical, Excavation, and Concrete estimating. These are two types of certification assessments, (true/false and multiple choice) requiring accurate and efficient recall of knowledge. Work

samples, (problems) are a direct sample of estimates performed in the work place and provide a directly related certification assessment.

If a test is not fully developed in a specific discipline that a candidate desires to be examined in, they have the opportunity to write a test for that discipline. This test must include a minimum of 100 discipline specific questions, two working problems following specific guidelines including a minimum of 25 questions each about each problem. The Certification Committee then grades the applicant's new test for the same criteria as all other tests that are generally prepared by CPEs for validity of technical knowledge and overall knowledge of estimating including a strong understanding of specific practices in the specific area.

An additional work sample which is part of the CPE program is the requirement of a 2,500 word paper written by the candidate demonstrating their communication skills and estimating knowledge. The specific subject is selected by three members of the Certification Board from three topics submitted by the candidate at time of application. It is intended this paper give the applicant an opportunity to prepare and explain how to perform an estimate in his major field of expertise much in the same manner that they are performing in their daily work.

The written technical papers are graded by three CPEs and evaluated for communication skills, writing skills, and a thorough knowledge of estimating. If the paper does not receive a passing grade of a minimum of 18 out of 30 points, the applicant is given one opportunity to rewrite the paper. The candidates are notified by the Society Business Office of their peer review score.

The preparation of exams for both general construction and separate discipline certification is performed exclusively by the Certification Committee, also considered subject matter experts. The Certification Committee members have performed job analysis, task analysis, and role delineation studies to investigate the job relevance of the certification assessment and identify the core knowledge, critical work functions, job tasks and subtasks, and relevant knowledge, skills and abilities that are common of fellow job incumbents. All of these components are implemented into the certification exams. ASPE recognizes the fundamental estimating principles inherent to all types of construction estimating. The CPE exams are structured to evaluate individual competence by being objective, fair, and based on the knowledge, skills, and abilities needed to function as a Certified Professional Estimator in the relative discipline the candidate is testing for.

Once the tests are written, they are beta tested and taken by other CPEs to confirm the validity, reliability and consistency with what is expected in the industry of an accomplished professional. The tests are reviewed for demonstration of knowledge of estimating in the construction industry with the abilities needed to function in the specialty area. The tests are reviewed for a consistent amount of detail in each specialty area to the extent that any test provided for examination will require a sufficient knowledge in the specialty area that is demonstrative of an accomplished professional. Only until this process is completed, is each test made available for candidates to be taken.

Once the tests are taken and completed by the applicant, they are scored and recorded by the grading service provider. The candidates are notified by the Society Business Office in writing of their pass/fail status. Each candidate is given a re-take opportunity for each exam that did not receive a passing score.

The grading service provider for ASPE provides individual candidate scores and provides an

item difficulty' report that indicates how many times an individual question was answered incorrectly. These reports are monitored and when there is a question that is consistently answered incorrectly, that question is pulled out and reviewed and is subject to possible modifications or removal from the test. The passing point standard has been determined as per the ASPE Certification Pass/Fail Determination procedure.

Maintenance of the test item database is performed consistently and in the same manner is reviewed annually to evaluate the tests effectiveness. If it appears all candidates are constantly missing the same question or answering at 100% correct, the tests are reviewed and adjusted to improve the validity, quality, and fairness of the tests or the questions may be replaced. The Certification Board keeps historical records that include measures of average performance, performance variations, and pass/fail percentages for the overall candidate population on the overall assessment.

ASPE's test management system is designed to enable reconstruction of examinee responses to the extent that a re-evaluation process is in place as an appeals process. Scores that are marginal failures are analyzed for comments by the examinee for professional evaluation of questions with disputed incorrect answers that may have interpretive issues worth reconsideration. Examinees that desire to discuss their test scores are given that opportunity for furthering their understanding and knowledge and improving the integrity of the exams. What is sought by the ASPE Certification Committee in the exams is the ability to perform and demonstrate a competent knowledge of the subject matter for a Certified Professional Estimator. Response records are maintained for at least two years to allow the examinee to initiate the appeals process.

All exams are given in the same format setting in a standard manner with a proctor to assure proper handling of materials, directions to candidates, allowed and prohibited acts and materials, appropriate responding to candidate questions, monitoring of administration, including prevention of candidate collaboration, and accounting of materials. Consistency and stability are continually maintained in the exam preparations, exam evaluations, administration, assessments, security administering, test scoring and record keeping in a never ending effort to afford fairness to all applicants in their pursuance of Certified Professional Estimator entitlement.