



## **INSTRUCTIONS FOR APPLICANT APPLYING FOR REGISTRATION AS A CONSTRUCTION INSPECTOR**

### **A SUMMARY OF THE DIVISIONS AND SPECIALTIES OF CONSTRUCTION INSPECTION**

Construction inspection registration is separated into four "Divisions." Division I and II are classed as "General Inspector" and are authorized to function as resident inspectors and provide contract administration and supervision of inspection for a project. Applicants in these categories are required to demonstrate a broad knowledge of all construction areas, but with particular emphasis placed upon the subjects which relate to the principal scope of responsibility of the selected Division. Division III is the designation which refers to "Specialty Inspectors" and all applicants for specialty registration are required to demonstrate a thorough knowledge of the technical areas of their specialty only. Division IV is a Public Works Inspector with limited authority and responsibility, and is not authorized to work as a resident inspector nor to perform contract administration (unless the applicant passes the Contract Administration portion of the exam).

A registrant qualifying for any one of the Divisions or Specialties provided may function as a Registered Construction Inspector within the scope of the Division or Specialty in which he/she is registered. Nothing herein is intended to permit and registrant hereunder to practice in an inspection field in which he/she is not qualified.

#### **DIVISION I -ENGINEERING**

An Engineering Inspector under this Division is a general inspector of both public works and private projects, whose duties include supervision and contract administration of inspection and the inspection of engineering construction and related works.

#### **DIVISION II- BUILDING**

A Building inspector under this Division is a general inspector whose duties include supervision and contract administration of inspection and the inspection of buildings and structures for the support, shelter and enclosure of persons, animals, chattels, or movable property of any kind.

#### **DIVISION III - SPECIALTY**

A specialty inspector is an inspector whose duties include only specialized, technical areas and methods of construction. Specialty categories, while limited to relatively narrow fields of endeavor, require a considerable greater demonstration of the applicant's knowledge of a given subject area than would be required of a General Inspector. The following are typical of, but not limited to, those specialties included under this Division.

## MECHANICAL

An inspector of the placing, installing, erecting, or connecting of any plumbing, heating, ventilating and air conditioning system; refrigeration system; boilers; wastewater treatment facilities and processes; and pumping plant equipment. This category includes but is not limited to all work described under PLUMBING and the placement, installation, erection, or connection of the heating, ventilating, and air conditioning systems of buildings, structures, and works, including all appurtenant mechanical equipment, appliances, sheet metal ducts, flues, filters, humidifiers, refrigeration equipment, controls, and other apparatus appurtenant thereto. It does not include underground pipelines.

## ELECTRICAL

An inspector of the placing, installing, erecting, and connection of the electrical systems of buildings and structures, including interior and exterior lighting, service and distribution facilities, communication systems, fire alarm and detection systems, electric heating and cooling and related facilities.

## CONCRETE

An inspector of portland cement concrete construction of all types, including cast-in-place, air-blown mortar (shotcrete), and precast, including every manner or mixing, conveying, placing, finishing, and curing and including the placement and support of any reinforcement incorporated therein and including prestressed concrete, both pretension and porttensioned; and special joint, including waterstops and joint sealants. Responsibilities include field sampling and testing.

## MASONRY

An inspector of all masonry construction, including masonry units of concrete, clay, glass, or gypsum; rough, cut, or dressed stone; cast stone; all types of masonry veneer, masonry adhesives; mortar, grout and reinforcement; integral waterproofing compounds; and the installation of anchors, clamps, reglets, expansion joints and flashing incorporated in the masonry construction. Responsibilities include field sampling and testing

## EARTHWORKS

An inspector of excavation and trenching; all backfill, earth embankment construction and other compacted fills; all grading, including provisions for surface drainage and slope protection; the preparation of pavement subgrades; soil stabilization or other methods to increase the bearing strength of soils, or to provide erosion protection; construction of mineral aggregate pavement base; mudjacking or other injection methods for pavement or foundation restoration; the driving of displacement piles and drilling of pile shafts for cast-inplace piles, but not including the placement of reinforcing steel or concrete therein. This category may include the placement of backfill of pipe trenches, but not the laying of pipe. Responsibilities include field sampling and testing of earth and mineral aggregate materials.

## EXCAVATION AND GRADING TECT II

Pre requisite: Current nuclear density gauge card.

An inspector of excavation and grading of earthworks. The examination may cover subjects keyed to a set of engineering site plans and project specification as follows:

- Demolition and removal
- Earthworks, embankment construction
- Earthworks, rock excavation
- Earthworks, grading, grading plan reading

## SOIL TECTII

Pre requisite: Current nuclear density gauge card.

An inspection of soils, soil mixtures, compaction and moisture-density relationship of soils. Responsibilities include use of N.D.T. equipment, sand cone testing and knowledge of soil stabilization methods.

## PAVING

An inspector of both flexible and rigid pavement and surfacing for all roadways, walkways, parking facilities, including asphalt or portland cement concrete batch plant inspection, and the mixing, placing and finishing of all paving and surfacing materials; construction of mineral aggregate base, but not including soil materials nor the use of the soil stabilization methods. This category includes all appurtenant curb and gutter construction, driveway approaches, local depressions and similar construction, but not including drainage structures or other reinforced concrete construction other than pavements. Responsibilities include field sampling and testing of portland cement concrete, bituminous paving materials, and mineral aggregate base materials.

## PLUMBING

An inspector of the placing, installing, erecting, or connecting, of the domestic water and sanitary systems of buildings and structures located within the limits of the area covered by a building or structure, not including pipeline construction as defined under PIPELINE, but including water conditioning equipment, low pressure steam and hot water boilers, gas supply, hot water heaters, waste reception and removal equipment, vacuum and air systems, and fire sprinklers outside the building area, this category includes landscape irrigation systems with all components and apparatus appurtenant thereto.

## STRUCTURAL METALS

An inspector of the fabrication, connection, and erection of any structural metals or components thereof, including appurtenant welded and bolted connections. This category primarily covers structural steels erected under the American Institute of Steel Construction (AISI) standards for steel

buildings and bridges, which includes high-rise construction, and light-gate steel erected under the American Iron and Steel Instituted (AISI) standards. Responsibilities include field sampling and testing.

#### WELDING

An inspector of weldments of any description, involving visual inspection supplement by radiographic, magnetic particle, dye penetrate, ultrasonic, and such other forms of nondestructive testing as may be indicated, as well as destructive testing as may be required to evaluate the qualifications of individual welders. This category includes bridges, buildings, steel pipes and penstocks, steel water tanks and standpipes, unfired pressure vessels, fabricated steel specials, and concrete reinforcing steel. Responsibilities include field sampling and testing.

#### ROOFING, DAMP PROOFING AND WATERPROOFING

An inspector of the placing, installing, erecting, and connection of roofing, damp proofing and waterproofing, insulation performed roofing and siding, flashing, sheet metal roofing accessories, and sealants for buildings and structures.

#### REAL ESTATE

An inspector engaged in the inspection of structures or on-site or off-site facilities generally for resale purposes or clients request.

#### PRE STRESSED CONCRETE

An inspector of portland cement concrete construction including every manner or mixing, conveying, placing, finishing and curing and including the placement and support of any reinforcement incorporated including pre stressed concrete, both pre-tensioned and posttensioned. Responsibilities include field sampling and testing.

#### DIVISION IV -PUBLIC WORKS

Division IV Public Works can be taken with the Contract Administration for a Public Works I or without the Contract Administration for Public Works II.

An inspector of public works construction involving the placing, installing, construction, erecting, and connection of discrete and unrelated components which are a part of projects paid for by public funds and intended for public use, and including earthworks and grading, including trench and structural excavation, and backfill, rigid and flexible pavements and appurtenances; sewers and manholes; storm drains and appurtenant structures; curbs, gutter, sidewalks, and driveways; piles and pile driving; pipelines and appurtenances; erosion control, protective coating, concrete work, including shotcrete; forms and falsework; structural metals and connection; pipeline testing; street lighting and traffic signal construction. Responsibilities include field sampling and testing, but do not involve work as resident inspector on a project, nor the contract administration.

## SCOPE OF THE EXAMINATION

FUNDAMENTALS EXAMINATION: All applicants for registration, whether for "General Inspector" categories or for the "Specialty" categories are required to take the same examination covering inspection fundamentals. The fundamentals examination is a 1-hour examination covering the following subject matter:

- Responsibility and authority of the inspector
- Records and reports
- Field sampling and testing
- Relations with the contractor
- Channels of communication
- Codes, regulation, permits and standards
- Right of rejection of faulty materials or work
- Order of precedence of contract documents
- Understanding of specifications and codes
- Construction measurements

All applicants for general inspector- Division I and II will be required to complete a one (1) hour examination covering contract administration. All examinations will be of the openbook type except for contract administration, which is closed book.

The general inspector applicants for Division I and II examinations will take a 1-hour examination covering the principles of inspection fundamentals a 1-hour examination covering the principles of contract administration, and a 4-hour examination covering technical. Two different projects have been selected for these examinations; a building project has been selected for Division II applicants, and a public works engineering project has been selected for Division I applicants. The subjects to be covered in the contract administration examination are the same for both Division I and II.

The general inspector categories (Division I and II) will include questions within the following subject areas:

- Field office organization and management
- Construction planning and operations
- Handling of contractor submittal
- Time of inspection and tests
- Handling of disputes
- Liaison with jurisdictional agencies
- Substitution of materials or products
- Measurement for payment
- Changes and extra work
- Changes conditions
- Organization and content of specifications
- Public agency vs. private construction contracts
- Basic requirements of public construction

- Unit price vs. lump sum contracts
- Conflict in contract documents
- Additives, deductives, and alternates in bidding
- Opening and closing of a project
- Thermal and moisture protection (including membrane roofing; sealants;
- Damp proofing and waterproofing; insulation; flashing and sheet metal work;
- Shingles and siding
- Doors and windows (including storefronts and entrances; window and curtain walls; glazing, finish hardware)
- Walls and ceiling coverings (including lath and plaster; drywall, acoustical treatment, ceiling suspension systems; metal stud framing)
- Ceramic tile work
- Flooring
- Painting and coating
- General mechanical materials and methods
- Plumbing
- Heating, ventilating, and air conditioning
- Fire protection systems
- Controls and instrumentation • General electrical materials and method.
- Electrical service and distribution
- Electrical lighting
- Communications systems
- Cathodic protection
- Testing of materials
- Operational testing of equipment and systems

SPECIALTY INSPECTOR TECHNICAL EXAMINATION: All specialty inspector examinations cover a single subject area only.

The technical portion of the Division IV- Public Works I or Public Works II Inspector, who provides inspection on the smaller engineering project not requiring a resident inspector, may cover the following subject areas:

- Earthwork (including excavation and grading)
- Shoring, bracing, forms, and falsework
- Paving (including asphalt concrete and portland cement concrete)
- Concrete work (including cast-in-place; hydraulic structures)
- Piling (including driven and cast-in-place)
- Pipelines (including water and sanitary; gravity and pressure)
- Erosion control (including rip-rap; slope planting; chemical stabilization)
- Protective coating (primarily steel pipe coatings)
- Metals and welding (minor metal work; welding of pipelines)
- Street lights and signal systems

- Testing of materials
- Operational testing of pipelines; signals; lighting

EXAMINATIONS: All technical examinations will be of the open-book type. There will be up to four hours for the completion of the technical examination for Division I and II, and two to four hours for Division III and IV.

DIVISION I: The technical portion of the Division I General Engineering Inspector examination may cover the following subject areas, with some of the questions keyed to the set of engineering project plans and specifications furnished to the applicant to work from:

- Foundations (including pile and caissons)
- Demolition and removals
- Earthworks (including embankment construction; excavation; grading)
- Rock excavation
- Paving (including asphalt concrete and portland cement concrete)
- Pipelines (including water and sanitary, gravity and pressure) Concrete work (including cast-in-place; shotcrete; pre stressed; mass concrete; and hydraulic structures)
- Steel-framed towers and support structures (including welded joints)
- Steel water tanks, standpipes, reservoirs (including welding)
- Heavy timber construction (including bridges; mill buildings; falsework)
- Membrane waterproofing (membrane roofing)
- Damp proofing
- Caulking and sealant (including mastic; elastomeric; waterstop)
- Protective coating (including surface preparation and all types of coatings)
- Equipment (including valves; pumps; compressors; stationary engines; and other heavy engineering equipment)
- Conveying systems (including bridge cranes; monorail hoist systems; lift systems; belt and bucket conveyors)
- Plumbing (industrial only)
- Process piping and appurtenance (including water and sewage treatment)
- Controls and instrumentation (telemetry)
- Electric service and distribution
- Traffic signals and street lighting
- Airport runway lighting
- Cathodic protection
- Testing of materials
- Operational testing of equipment and systems

DIVISION II: The technical portion of the Division II General Building Inspector examination may cover the following subject areas, with some of the questions keyed to a set of building project plans and specifications furnished to the applicant to work from:

- Foundations (piling and caissons)
- Earthworks (excavation and grading)
- Sitework (pavements; utilities; fencing)
- Landscaping and irrigation
- Concrete work (including cast-in-place; shotcrete; pre stressed; light-weight; architectural concrete)
- Masonry work (including brick; concrete block; veneer construction)
- Structural steel framing systems (including high-rise construction)
- Metal joists and decking light-gage steel framing
- Wood construction (including rough and finish carpentry; millwork; wood preservatives; diaphragm structures)

#### GENERAL REQUIREMENTS

You may apply for registration in more than one Division or Specialty by submitting a separate application and fee for each Division or Specialty desired.

You must furnish evidence of a high school education or the equivalent thereof. If you are unable to locate your high school diploma, a letter of certification from your high school or school district will be acceptable or a signed statement indicating high school, city and state, and the year of graduation. A copy of a college diploma or transcript will also be acceptable.

#### INABILITY OR FAILURE TO APPEAR FOR THE EXAMINATION

If you fail to take your assigned examination, you will be removed from the eligible list of applicants and your application fee will be forfeited, unless upon showing of good cause within thirty (30) days after the date of such assigned examination. If Board excuses your failure to appear, you will be granted an additional period not to exceed twelve (12) months in which to take your examination.

#### FAILURE TO PASS THE EXAMINATION

If you fail the examination, you may reapply. Re-examination shall not occur sooner than ninety days from the date of the original examination. A request for re-examination and payment of \$265.00 will be required.

#### REGISTRATION FEE

If you successfully pass the examination, you will be notified by the Board and a certificate of registration will be issued.

#### CHANGE OF ADDRESS

It is extremely important that you notify the Board immediately of any change of mailing address, giving both your old and new address and email address.



## DOCUMENTS TO ACCOMPANY APPLICATION

1. PHOTOGRAPHS: Email photo to [executivedirector@acia.com](mailto:executivedirector@acia.com) or mail to 316 N. Winnipeg Pl. B Long Beach Ca. 90814
2. CERTIFICATES: In support of applicant's experience qualifications on the approved form provided by the Board.
3. FEES: Application and Examination Fee: \$265.00 Non Refundable Renewal Fee