



**TERM CONTRACT FOR PROFESSIONAL MATERIALS TESTING and  
INSPECTION SERVICES**

**CHAPTER TWO**

**PROFESSIONAL'S REQUIRED SERVICES**

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**1) GENERAL**

- a) The scope of services shall include conducting Special Inspections and Progress Inspections (New York City) as regulated by the applicable Building Code and all applicable references as well as inspection and testing of other items identified below that may not be regulated by the Code.
- b) The duties listed below are not necessarily all inclusive. In addition to the duties listed below, the Professional's personnel may be asked to perform other duties that are identified in the contract documents for any Project and for which they possess the qualifications. Services requested that are not included in this Chapter will be written into the individual work authorization for the respective project.
- c) If there is a conflict between the duties listed below, in the relevant Building Code and those identified in the contract documents for a Project, the more stringent requirements shall take precedence.
- d) The Professional shall develop and maintain a Quality Assurance Manual that contains procedures for ensuring the quality of the services offered. At a minimum, the manual shall provide for the following: equipment calibration and maintenance, personnel training and evaluation, test method procedures and references, participation in proficiency programs, and other procedures for ensuring the quality of internal and external technical services. This manual shall be made available for review by the Owner or Registered Design Professional of Record upon request.
- e) The Professional shall staff projects with the most appropriately experienced and accredited personnel based on the project needs and requirements.
- f) The Professional may engage all sub-consultants as may be necessary to complete the scope of work. Prior to entering into a contract with any sub-consultant, the Professional shall provide proper notification of their intent. The Owner reserves the right to disapprove the use of any subconsultant.

**2) QUALIFICATIONS**

- a) The Professional shall enter and maintain employee and laboratory qualification information into an on-line database provided by the Owner. All information regarding laboratories and employees to be utilized for projects must be entered into the database on a project by project basis, prior to on-site work commencing.

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The Professional must update the database whenever changes occur in order to keep the database current.

- b) All costs associated with training, certification, qualification and accreditation of the Professional and their personnel shall be the responsibility of the Professional.
- c) Company
  - i) Testing agencies providing special and progress inspection services in the City of New York must meet all requirements of the most recent version of the Code and applicable Rules of the City of New York in the areas of practice for which services are being provided.
  - ii) Testing agencies providing special inspection services on projects performed under the Building Code of New York State must be established and recognized agencies regularly engaged in conducting tests or furnishing inspection services.
- d) Laboratories
  - i) All laboratory facilities performing materials testing/ special inspection services for the Owner shall be accredited by American Association of State Highway Transportation Officials (AASHTO) and/or The National Voluntary Laboratory Accreditation Program (NVLAP) in the areas covered by the scope of work. Equivalent accreditation by other organizations may be reviewed and accepted by the Owner on a case by case basis, upon receipt of a formal written request from the Professional.
  - ii) The laboratory facilities must participate in the laboratory inspection program (LIP) and proficiency sample program (PSP) administered by the Cement and Concrete Reference Laboratory (CCRL) for concrete, and AASHTO Materials Reference Laboratory (AMRL) for soils. Laboratory facilities must maintain participation in these programs throughout the term of this Contract, which includes inspections approximately every 24 months.
  - iii) Where inspection and testing agencies have multiple offices performing special inspection and testing services for the Owner, each office shall be individually accredited to meet the above requirements.

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iv) Inspection and testing agencies wishing to perform concrete testing work in the City of New York must be licensed concrete testing laboratories by the NYC Department of Buildings.

e) Personnel

i) The Professional represents that its officers, employees and sub-consultant's have the relevant experience, education, licenses and certifications required by this Agreement to perform the duties for specified herein.

(1) Relevant experience shall be considered direct participation and practice related to the underlying construction activities that are the subject of inspection, where such participation has led to accumulation of knowledge and skill required for the proper execution of such inspection on projects of similar size and complexity. The Professional shall provide written documentation to the Owner demonstrating the experience and training is related in complexity to the same type of special inspection activities for projects of similar complexity to that required under this Agreement.

(2) Professional Engineers and Registered Architects shall be licensed/registered in New York State.

(3) Bachelors or Masters degrees shall be from an accredited institution or equivalent. Those applying for 'equivalent' status shall provide back up from a third-party evaluation service.

(4) Inspector and technician certifications shall be from the nationally-recognized agencies listed herein and be maintained current.

ii) The Professional shall employ Supervisory personnel meeting requirements of the applicable Code and associated reference standards, rules, laws and bulletins.

(1) The Professional shall designate a full-time director who shall be a registered design professional in New York State and have oversight and responsible control of the inspection agency, including the following:

(a) ensuring that qualified inspectors are dispatched for special inspections, such inspectors properly document their activities, and reports and logs are prepared in accordance with the Code and this Agreement;

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- (b) ensuring training and/or education necessary to qualify the inspector for his or her duties, including continued training and education necessary to keep pace with developing technology.
- (2) The Professional shall designate a primary inspector or inspection supervisor for projects performed under this Agreement. Supervision shall mean oversight and responsible control by a registered design professional having necessary qualifications and relevant experience to perform responsibilities associated with the special, progress or other inspection or test. The inspection supervisor shall:
  - (a) ensure training and/or education necessary to qualify the special inspector for his or her duties, including continued training and education necessary to keep pace with developing technology;
  - (b) determine competence of special inspectors for the work they are authorized to inspect and provide on-site monitoring of the special inspection activities at the job site to assure that the qualified special inspector is performing his or her duties when work requiring inspection is in progress; and
  - (c) review special inspection progress reports and final reports for conformance with the approved plans, specifications and workmanship provisions of Chapter 17 of the Code or elsewhere in the construction codes or their referenced standards. Such supervision and control shall be evidenced by the supervisor's signature and seal upon any required statements, applications and/or reports.
- iii) The Professional shall submit to the Owner for review the names of individuals they intend to use on a specific project and maintain qualifications and detailed resumes in the Owner's on-line database. The submission must detail each individuals intended role on the project and show that the individuals meet the minimum qualifications outlined herein and in the applicable Building Code for the specific project assignment(s) they will perform.

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#### **3) REPORTING**

- a) The Professional shall keep complete records for all tests and inspections. Prepare detailed written reports with backup documentation and distribute reports as directed by the Owner.
- b) Daily reports:
  - i) Submit daily draft reports on-site at the end of each day describing the tests and observations made.
  - ii) Document work in progress and nonconforming work, including observed deficiencies, who was notified, and action taken to correct nonconforming work and deficiencies. Update the status of work in progress.
  - iii) Ensure that report formats include a section to document for follow up areas requiring future attention and or re-inspection by Special Inspection personnel.
  - iv) Identify and itemize any changes authorized by architect/engineer. Report all uncorrected deviations from plans or specifications and approved construction documents.
  - v) Provide final reports within five working days, unless otherwise agreed upon, of the actual inspection/test. All reports shall be entered in the Owner's Project Management System (Contract Manager), as discussed further below.
  - vi) The Professional shall record all project related information in the Owner's Project Management System (Contract Manager - Primavera Expedition™) in accordance with the DASNY Contract Manager User Guide Manual when required for the specific project. The Professional agrees to request user accounts to the Owner's Project Management System for each employee who will be working on the project. The Professional further agrees to have their employees attend training in the use of the Owner's Project Management System, and to utilize the DASNY Contract Manager User Guide Manual to perform necessary tasks. Training will be provided by the Owner.
  - vii) The Professional shall have the capability to distribute reports to all required parties electronically in a format acceptable to the Owner. This may be accomplished using one or more methods, i.e., web based system, pdf format, etc.

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viii) The Professional shall utilize forms and templates appropriate to the test and/or inspection being performed. The format and content of all inspection and report templates used by the Professional shall meet the approval of the Owner. The Professional shall modify their forms as necessary, or use forms provided by the Owner. Upon request, the Professional shall provide copies of all forms to the Owner.

c) Documentation of deficiencies:

- i) Report all noted deficiencies immediately (verbally) to the Contractor and designated Owner's representative and follow up in writing for unresolved issues.
- ii) All deviations from contract drawings, specifications, shop drawings and approved submittals; as well as deviations from applicable reference standards; and any field modifications shall be documented on a non-conformance or deficiency report. Minor field conditions that are corrected and confirmed on the same day as observed should not receive an NCR, but should be noted in the daily reports.
- iii) The Professional shall track and maintain a log of all non-conformance reports.
- iv) Maintain a photo log as directed.
- v) The Professional shall track and maintain a log of all re-inspections required due to deficient work by the contractor, along with their cost to perform such re-inspections. Notify the Owner if, upon re-inspection, any contractor fails to remove, correct or replace deficient construction work, equipment or materials.

d) Close-out Documentation

- i) For projects governed by the New York City Building Code, the Professional shall prepare all initial and final Technical Reports (TR's) and other Department of Buildings forms required by the City of New York related to the Scope of Work. Provide certification, including signing, sealing and submittal of form(s).
- ii) For projects governed by the Building Code of New York State, the Professional shall complete the Final Report of Special Inspections provided by the Owner. Provide certification, including signing, sealing and submittal of form(s).

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**4) OTHER CONDITIONS**

- a) The Professional shall maintain copies of all inspection and test reports and shop drawings and other submittals that were used in completing inspections and tests for a period of six years following project completion or as may be required by the building official.
- b) Supervisory personnel shall make periodic, but not less than monthly, site visits to observe the performance of field personnel working on Owner projects to verify that the services being provided meet the requirements of this contract, applicable reference standards, Building Codes and the Professional's Quality Assurance Program. The supervisor shall prepare a trip report which, at a minimum, shall include an update on the progress of work; a summary of all opened and closed non-conformances since the last site visit; assessment of technician performance of field personnel, including commentary on quality of reports; and highlight any problems that may impact sign-off.
- c) Project site sign-in procedures:
  - i) The Professional's personnel must complete a DASNY SITU sign-in sheet when reporting to a site. The sign-in sheet must indicate the total number of hours worked and the actual time worked each day, i.e., 8 AM to 12 PM, 12-12:30 lunch, 4:30 PM sign out. Lunch time is not chargeable. The Professional's personnel must also identify how many of the hours spent on site were performing reinspections of previously identified work found not in conformance with the approved construction documents.
  - ii) A representative of the Owner shall be designated to verify the time reported on the sign-in sheets. If the designated individual is not present, obtain verification from other Owner representatives.
  - iii) The sign-in sheets shall be attached to the invoices which will be used for billing purposes.
  - iv) In general, no payments shall be made for services unless the Consultant has signed in and out using the sign-in sheet provided by the Owner. However, under certain circumstances, and where no representative of the Owner is present, signing in and out using the Construction Managers or a project security log book, or other pre-approved arrangement, may be accepted.

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- d) The Professional shall be required to attend meetings with Project personnel as directed or requested by the Owner.
- e) The Owner reserves the right to refuse to pay any invoice submitted by the Professional for services performed by an employee before the Owner has approved that employee or after the Owner has ordered the Professional to replace an employee.
- f) The following Sections outline the scope of technical services required under this Agreement, with emphasis on special and progress (NYC) inspections. In addition to these items, the consultant may be requested to perform related quality control testing and inspection services specified as the Owners responsibility in the Construction Documents for a project, including work that may not require special inspection, such as testing and inspections associated with site work or utilities. Such items, when required, will be written into the Professionals work authorization where practicable.

**5) INSPECTION OF FABRICATORS**

- a) Certifications/Qualifications Required:
  - i) Personnel providing special inspection services on the premises of a fabricators shop shall be qualified as follows:
    - (1) For projects governed by the Building Code of New York State, fabrication inspectors shall meet the following qualification requirements for the category in which they are providing service.
      - (a) Precast Concrete; Refer to Item no. 12A;
      - (b) Steel Bar Joists; Refer to Item no. 8A;
      - (c) Metal Building – Welding; Refer to Item no. 8A;
      - (d) Structural Steel – Welding; Refer to Item no. 8A;
      - (e) Cold Formed Metal Framing - Welding; Refer to Item no. 8A;
    - (2) For projects governed by the New York City Building Code, fabrication inspectors shall meet the qualification requirements specified in 1 RCNY 101-06, Appendix A for the category in which they are providing service.
- b) Functions: The following shall be performed by the qualified individuals working under the direct supervision of a Professional Engineer or Primary Inspector (NYCBC) qualified in the category of work being fabricated.
  - i) When fabrication of structural members, assemblies and other regulated products is being performed on the premises of a fabricators shop, special

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inspection of the fabricated items shall be required in accordance with 1704.2 of the applicable Building Code.

- ii) Inspection and testing services shall be required in accordance with the duties outlined for the inspection category associated with the work.

#### 6) SOILS: Field Inspector

##### a) Certifications/Qualifications Required:

- i) For projects governed by the New York State Building Code, soils field inspectors shall meet the qualification requirements noted below with the additional qualification that the individuals shall have at least one year relevant experience.

##### (1) Primary Inspector or Inspection Supervisor:

- (a) PE – Geotechnical, Civil or Structural, and 1 year relevant experience;  
or

##### (2) Supplemental Inspector (under the direct supervision of Inspection Supervisor):

- (a) Bachelor's Degree in Geotechnical, Civil, or Structural Engineering and 1 year relevant experience; or
- (b) Technician with NICET Level 1 Geotechnical Certification and 2 years' relevant experience; or
- (c) Technician with ICC Certification Soils Special Inspector and 1 year relevant experience

- ii) For projects governed by the New York City Building Code, soils field inspectors shall minimally meet the requirements of 1 RCNY 101-06, Appendix A under Special Inspection Category "Soils – Fill Placement, In-place Density".

##### b) Functions: The following functions shall be performed by the qualified individuals working under the direct supervision of a Professional Engineer.

- i) For projects performed under the New York State Building Code, the scope of services shall include the following items as identified in BC Table 1705.6:

- (1) Item 3 – Perform classification and testing of controlled fill materials.
- (2) Item 4 – Verify the use of proper materials, placement of proper lift thicknesses and compaction to required densities of all controlled fills during placement.

- ii) For projects under the New York City Building Code, the scope of services shall include the following items as defined in BC 1704.7:

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- (1) BC 1704.7.2 – During fill placement.
- (2) BC 1704.7.3 – Evaluation of in-place density.

**7) SOILS: Soils Engineer**

a) Certifications/Qualifications Required:

- i) For projects governed by the New York State Building Code, soils field inspectors shall meet the following qualification requirements;
  - (1) Primary Inspector or Inspection Supervisor:
    - (a) PE – Geotechnical, Civil, or Structural, and 1 year relevant experience.
    - (b) EIT with 1 year relevant experience.
- ii) For projects governed by the New York City Building Code, soils field inspectors shall minimally meet the requirements of 1 RCNY 101-06, Appendix A under the following Special Inspection Categories:
  - (1) “Soils – Site Preparation”;
  - (2) “Pile Foundations and Drilled Pier Installation”; and
  - (3) “Underpinning”

b) Functions: The following functions shall be performed by qualified individuals working under the direct supervision of a Professional Engineer, or by a Professional Engineer.

- i) For projects performed under the New York State Building Code, the scope of services may include the following items as defined further in the Code:
  - (1) BC Table 1705.6 item 1 – Verify materials below footings are adequate to achieve the design bearing capacity;
  - (2) BC Table 1705.6 item 2 – Verify excavations have extended to the proper depth and have reached the proper material;
  - (3) BC Table 1705.6 item 5 – Prior to placement of structural fill, verify that the site has been prepared properly;
  - (4) All work associated with pile and pier foundations as outlined in BC Tables 1705.7 and 1705.8.
- ii) For projects under the New York City Building Code, the scope of services shall include the following items as defined in BC 1704.7 and 1704.8:
  - (1) BC 1704.7.1 – Site Preparation, verify that the site has been prepared in accordance with the approved soils report.
  - (2) BC 1704.8 – Deep Foundation Elements;
  - (3) BC 1704.20.3 – Underpinning;

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**8) STRUCTURAL STEEL**

a) Qualifications:

- i) For projects governed by the New York State Building Code, steel inspectors shall meet the following qualification requirements;

(1) Welding:

(a) Primary Inspector or Inspection Supervisor;

(i) PE or RA and AWS Certified Welding Inspector (AWS-CWI); or

(ii) PE or RA and ICC Certification as a Structural Welding Inspector (ICC-SWI) and 1 year relevant experience;

(b) Supplemental Inspector (under the direct supervision of Inspection Supervisor);

(i) AWS Certified Welding Inspector (AWS-CWI); or

(ii) ICC Certification as a Structural Welding Inspector (ICC-SWI) and 3 years' relevant experience;

(2) Erection and High Strength Bolting;

(a) Primary Inspector or Inspection Supervisor;

(i) PE – Civil/Structural and ICC Certification as a Structural Steel Bolting Inspector and 1 year relevant experience;

(b) Supplemental Inspector (under the direct supervision of Inspection Supervisor);

(i) Technician with ICC certification as a Structural Steel and Bolting Inspector and 3 years' relevant experience

- ii) For projects governed by the New York City Building Code, steel inspectors shall minimally meet the requirements of 1 RCNY 101-06, Appendix A under Special Inspection Category "Welding: Steel" or "Structural Steel – Erection and High Strength Bolting", as applicable.

iii) Non-Destructive Testing (NDT):

- (1) Current American Society for Non-Destructive Testing (ASNT) Level II Certified by current employer to 'SNT-TC-1A' or by ASNT Control Certified Program (ACCP) in the relevant NDT method, OR

- (2) ASNT Level II or III certified to ACCP in the relevant NDT Method.

- b) Functions: The following functions shall be performed by the qualified individuals working under the direct supervision of a Professional Engineer, Inspection Supervisor or Primary Inspector as applicable.

- i) For projects performed under the New York State Building Code, the scope of services shall include any or all of the items identified in NYSBC Section 1705.2, whether in the field or on the premises of a fabricators shop.

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- ii) For projects under the New York City Building Code, the scope of services shall include any or all of the items listed in NYCBC Table 1704.3, whether in the field or on the premises of a fabricators shop.
- iii) Non-destructive testing (NDT) shall be performed as required by the project construction documents.

**9) CONCRETE: Concrete Design Mixes**

a) Qualifications Required:

- i) Concrete design mixes shall be reviewed by a Professional Engineer, licensed in New York State or, for projects under the New York City Building Code, approved based on meeting the criteria defined in NYC Department of Buildings Bulletin 2011-008.

b) Functions: The reviewer shall perform the following:

- i) Review the concrete design mix report for each class of concrete that has been submitted by the Contractor and approved by the Registered Design Professional of Record. Review design for conformance with applicable provisions of the Building Code, ACI 318 and the contract documents.

**10) CONCRETE: Batch Plant Inspector**

a) Certifications/Qualifications Required:

- i) Current Certification as an ACI Concrete Field Testing Technician-Grade I and at least one year of batch plant inspection experience.

b) Functions: The inspector shall perform the following duties at a frequency specified in the contract documents or as directed by the Owner's Representative:

- i) Verify that plant quality controls are adequate and perform functions listed in ACI 311.5-04, Chapter 1.

**11) CONCRETE: Field Technician**

a) Certifications/Qualifications Required:

- i) Technicians shall be qualified by education and relevant experience and hold current certification as ACI Field Testing Technician – Grade I, or equivalent.

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ii) Supervisors or directors shall be qualified as follows:

(1) For projects under the jurisdiction of the New York City Department of Buildings, the supervisor, or laboratory director, shall be qualified in accordance with 1RCNY 101-07, Paragraph (6)(ii).

(a) Primary Inspector or Inspection Supervisor;

(i) PE or RA and 1 year relevant experience; or

(b) Supplemental Inspector (under the direct supervision of Inspection Supervisor);

(i) ACI Certification as Concrete Construction Special Inspector (ACI CCSI); or;

(ii) ICC Certification as Concrete Special Inspector (ICC-CSI);

(2) For projects performed under the Building Code of New York State, the supervisor shall be a licensed design professional and further qualified in accordance with ASTM E329, Paragraph 6.2.4 and 6.2.5.

b) Functions: The field technician shall perform the following:

i) In accordance with the Building Code (NYC and NYS), concrete technicians shall be responsible for performing the following items as defined in BC Table 1704.4:

(1) Item 4 – Verifying use of the required design mix, and

(2) Item 5 – At the time fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.

(a) For projects performed under the NYC Building Code only, the additional requirements outlined in Buildings Bulletin 2009-026 are applicable.

(3) All services shall be provided in accordance with the reference standards and Code references cited in BC Table 1704.4.

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**12) CONCRETE – CAST-IN-PLACE AND PRECAST: Field Inspector**

a) Certifications/Qualifications Required:

- i) For projects governed by the New York State Building Code, concrete field inspectors shall meet the following qualification requirements:
  - (1) NYS Licensed Professional Engineer shall have one year relevant experience; and
  - (2) Graduate Engineer in Civil Engineering with EIT shall have two years relevant experience.
- ii) For projects governed by the New York City Building Code, concrete field inspectors shall minimally meet the requirements of 1 RCNY 101-06, Appendix A under the following Special Inspection Category:
  - (1) "Concrete – Cast-in-Place & Precast"
- iii) Welding and Bolting (where required): Refer to Structural Steel Requirements.

b) Functions: The inspectors and technicians shall perform the following functions under the direct supervision of a Professional Engineer or Primary Inspector (NYCBC), who shall have the ultimate responsibility for all field tests and inspections:

- i) The scope of services may include the following items identified in BC Table 1704.4 of the New York State and New York City Building Codes, as applicable:
  - (1) Item 1 – Inspection of reinforcing steel and placement;
  - (2) Item 2 – Inspection of reinforcing steel welding; ;
  - (3) Item 3 – Inspect bolts to be installed in concrete prior to and during placement of concrete where allowable loads have been increased;
  - (4) Item 6 – Inspection of concrete and shotcrete placement for proper application techniques;
  - (5) Item 7 – Inspection for maintenance of specified curing temperatures and techniques;
  - (6) Item 9 – Erection of precast members; and
  - (7) Item 11 – Inspect formwork for shape, location and dimensions of the concrete member being formed.

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**13)CONCRETE: Laboratory Technician**

a) Certifications/Qualifications Required:

- i) ACI Concrete Laboratory Technician, Level I or II for the tests being performed.
- ii) Supervisors or directors shall be qualified as follows:
  - (1) For projects under the jurisdiction of the New York City Department of Buildings, the supervisor, or laboratory director, shall be qualified in accordance with 1RCNY 101-07, Paragraph (6)(ii).
  - (2) For projects performed under the Building Code of New York State, the supervisor shall be a licensed design professional and further qualified in accordance with ASTM E329, Paragraphs 6.2.4 and 6.2.5.

b) Functions:

- i) A Level I II Laboratory Technician shall perform required laboratory tests of concrete and concrete aggregates in accordance with relevant ASTM Procedures and Project requirements, including the following:
  - (1) Capping Cylindrical Concrete Specimens
  - (2) Compressive Strength of Cylindrical Concrete Specimens
  - (3) Sampling Aggregates and Reducing Field Samples of Aggregate to Testing Size
  - (4) Materials finer than (No. 200) Sieve for Mineral Aggregates by Washing
  - (5) Sieve Analysis of Fine and Coarse Aggregates
  - (6) Unit Weight and Voids in Aggregates
  - (7) Specific Gravity and Absorption of Coarse and Fine Aggregates
  - (8) Total Moisture Content of Aggregates by Drying
  - (9) Organic Impurities in Fine Aggregates for Concrete
- ii) A Level II Laboratory Technician shall be required for the following:
  - (1) Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
  - (2) Resistance to Degradation of Small- or Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
  - (3) Flexural Strength of Concrete Using Simple Method with Third-Point Loading
  - (4) Making and Curing Concrete test Specimens in the Laboratory
  - (5) Splitting Tensile Strength of Cylindrical Concrete Specimens
  - (6) Obtaining and Testing Drilled Cores and Sawed Beams

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**14) CONCRETE: Prestressed Concrete Inspector**

a) Certifications/Qualifications Required:

i) For projects governed by the New York State Building Code, prestressed concrete inspectors shall meet the following qualification requirements:

(1) Primary Inspector or Inspection Supervisor;

(a) PE –Civil/Structural, and 1 year relevant experience; or

(2) Supplemental Inspector (under the direct supervision of Inspection Supervisor);

(a) Bachelor's Degree in Engineering and ICC Certification as Prestressed Concrete Special Inspector and 1 year relevant experience; or

(b) ICC Certification as Prestressed Concrete Special Inspector and 3 years relevant experience;

ii) For projects governed by the New York City Building Code, concrete field inspectors shall minimally meet the requirements of 1 RCNY 101-06, Appendix A under the following Special Inspection Category:

(1) "Prestressed Concrete"

b) Functions: The inspectors and technicians shall perform the following functions under the direct supervision of a Professional Engineer or Primary Inspector (NYCBC), who shall have the ultimate responsibility for all field tests and inspections:

i) The scope of services may include the following items identified in BC Table 1704.4 of the New York State and New York City Building Codes, as applicable:

(1) Item 1 – Inspection of reinforcing steel, including prestressing tendons, and placement;

(2) Item 8 – Inspection of prestressed concrete:

(a) Application of prestressing forces, and

(b) Grouting of bonded prestressing tendons in the seismic-force-resisting system.

(3) Item 9 – Erection of precast members.

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**15) SPRAY FIRE RESISTANT MATERIALS (SFRM): Fireproofing Inspector**

a) Certifications/Qualifications Required:

i) For projects governed by the New York State Building Code, fireproofing field inspectors shall meet the following qualification requirements

(1) Primary Inspector or Inspection Supervisor;

(a) PE or RA and 1 year relevant experience; or

(2) Supplemental Inspector (under the direct supervision of Inspection Supervisor);

(a) Bachelor's Degree in Architecture or Engineering and either 1 year relevant experience; or ICC Certification as a Spray-Applied Fireproofing Special Inspector, or;

(b) Technician with ICC Certification as a Spray-Applied Fireproofing Special Inspector and 3 years relevant experience;

ii) For projects governed by the New York City Building Code, fireproofing field inspectors shall minimally meet the requirements of 1 RCNY 101-06, Appendix A under the following Special Inspection Category:

(1) "Sprayed Fire-Resistant Materials"

b) Functions: The inspectors shall perform the following functions under the direct supervision of a Professional Engineer or Primary Inspector (NYCBC), who shall have the ultimate responsibility for all field tests and inspections:

(1) The scope of services for projects under the Building Code of New York State shall include inspection of SFRM applied to structural members and decks in accordance with BC 1704.10 including:

(a) Verification of structural member surface condition per 1704.10.1;

(b) SFRM Application per 1704.10.2;

(c) SFRM Thickness per 1704.10.3;

(d) SFRM Density per 1704.10.4; and

(e) SFRM Bond strength per 1704.10.5.

(2) The scope of services for projects under the New York City Building Code shall include inspection of SFRM applied to structural members and decks in accordance with BC 1704.11, including:

(a) Verification of structural member surface condition per 1704.11.1;

(b) SFRM Application per 1704.11.2;

(c) SFRM Thickness per 1704.11.3;

(d) SFRM Density per 1704.11.4; and

(e) SFRM Bond strength per 1704.11.5.

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- (f) Inspection of existing SFRM during alterations per 1704.11.6.
- (3) Special inspection of mastic and intumescent fire-resistant coatings in accordance with the Association of Wall and Ceiling Industries (AWCI) Technical Manual 12-B.

**16) MASONRY CONSTRUCTION: Inspector**

a) Certifications/Qualifications Required:

- i) For projects governed by the New York State Building Code, masonry field inspectors shall meet the following qualification requirements, with the following clarifications:

- (1) Primary Inspector or Inspection Supervisor:

- (a) PE or RA and 1 year relevant experience; or

- (2) Supplemental Inspector (under the direct supervision of Inspection Supervisor):

- (a) Bachelor's Degree in Architecture or Engineering and either 1 year relevant experience; or ICC Certification as a Structural Masonry Special Inspector and 1 year relevant experience; or;

- (b) Technician with ICC Certification as a Structural Masonry Special Inspector and 2 years relevant experience;

- ii) For projects governed by the New York City Building Code, masonry field inspectors shall minimally meet the requirements of 1 RCNY 101-06, Appendix A under the following Special Inspection Category:

- (1) "Masonry"

- b) Functions: The inspectors shall perform the following functions under the direct supervision of a Professional Engineer or Primary Inspector (NYCBC), who shall have the ultimate responsibility for all field tests and inspection personnel:

- (1) The scope of services for projects under the Building Code of New York State and New York City Building Code shall be in accordance with the following, depending upon the structure and design:

- (a) Projects requiring Level 1 Special Inspection in accordance with BC 1704.5.1 and 1704.5.2 shall be inspected in accordance with the BC Table 1704.5.1.

- (b) Projects requiring Level 2 Special Inspection in accordance with BC 1704.5.3 shall be inspected in accordance with the BC Table 1704.5.3.

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**17)WOOD CONSTRUCTION: Inspector**

a) Certifications/Qualifications Required:

- i) For projects governed by the New York State Building Code, inspection of wood structural elements shall be provided by inspectors meeting the following qualification requirements:
  - (1) NYS Licensed Professional Engineer with one year relevant experience; or
  - (2) Graduate Engineer with EIT with two years relevant experience.
- ii) For projects governed by the New York City Building Code, inspection of wood structural elements shall be provided by inspectors meeting the qualification requirements of 1 RCNY 101-06, Appendix A under the following Special Inspection Category:
  - (1) "Wood construction – Prefabricated wood I-joists and metal-plate-connected wood trusses"

b) Functions: The inspectors shall perform the following functions under the direct supervision of a Professional Engineer or Primary Inspector (NYCBC), who shall have the ultimate responsibility for all field tests and inspection personnel:

- (1) The scope of services for projects under the Building Code of New York State shall include inspection of wood structural elements in accordance with BC 1704.6, including:
  - (a) High-load diaphragms per BC 1704.6.1.
- (2) The scope of services for projects under the New York City Building Code shall include inspection of wood structural elements in accordance with BC 1704.6, including:
  - (a) Fabrication of high-load diaphragms per 1704.6.1;
  - (b) Other structural wood construction per 1704.6.2;
  - (c) Metal-plate-connected wood trusses per 1704.6.3; and
  - (d) Prefabricated wood I-joists per 1704.6.4.

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**18) EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS): Inspector**

a) Certifications/Qualifications Required:

- i) For projects governed by the New York State Building Code, inspection of EIFS applications shall be provided by inspectors qualified in accordance with the following requirements:

(1) Primary Inspector or Inspection Supervisor;

(a) PE or RA and 1 year relevant experience; or

(2) Supplemental Inspector (under the direct supervision of Inspection Supervisor);

(a) EIT with 2 years' relevant experience; or;

(b) Technician with 2 years' relevant experience;

- ii) For projects governed by the New York City Building Code, inspection of EIFS elements shall be provided by inspectors meeting the qualification requirements of 1 RCNY 101-06, Appendix A under the following Special Inspection Category:

(1) "Exterior Insulation Finish Systems (EIFS)"

- b) Functions: The inspectors shall perform the following functions under the direct supervision of a Professional Engineer or Primary Inspector (NYCBC), who shall have the ultimate responsibility for all field tests and inspection personnel:

- i) The scope of services for projects under the Building Code of New York State shall include inspection of all EIFS applications in accordance with BC 1704.12.

- ii) The scope of services for projects under the New York City Building Code shall include inspection of EIFS applications installed more than 15-feet above adjacent finished grades in accordance with BC 1704.12 and 1704.12.1.

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**19) SMOKE CONTROL**

- a) Certifications/Qualifications Required:
  - i) For projects governed by the Building Code of New York State, inspection of smoke control systems shall be provided by inspectors qualified as follows:
    - (1) Primary Inspector or Inspection Supervisor:
      - (a) PE or RA and 1 year relevant experience (mechanical and/or fire protection); or
    - (2) Supplemental Inspector (under the direct supervision of Inspection Supervisor):
      - (a) Technician with NEBB Air Balancer Certification and 3 years' relevant experience;
  - ii) For projects governed by the New York City Building Code, inspection of smoke control systems shall be provided by inspectors meeting the qualification requirements of 1 RCNY 101-06, Appendix A under the following Special Inspection Category:
    - (1) "Smoke Control Systems"
- b) Functions: The inspectors shall perform the following functions under the direct supervision of a Professional Engineer or Primary Inspector (NYCBC), who shall have the ultimate responsibility for all field tests and inspection personnel:
  - i) The scope of services for projects under the Building Code of New York State and New York City Building Code shall be in accordance with BC 1704.14.

**20) SPECIAL CASES**

- a) Certifications/Qualifications Required:
  - i) Applicability to be determined by the code enforcement official based on the specific requirements of the work determined to be "unusual in nature" as defined by the Code.
- b) Requirements: Work requiring special inspection under this item includes:
  - i) Construction materials and systems that are alternatives to materials and systems prescribed by the Code;
  - ii) Unusual design applications of materials described in the Code; or

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- iii) Materials and systems required to be installed in accordance with additional manufacturer's instructions that prescribe requirements not contained in the Code or referenced standards.

**21) SPECIAL INSPECTION REQUIREMENTS SEISMIC RESISTANCE**

- a) Certifications/Qualifications Required:
  - i) Inspection for seismic resistance shall be provided by inspectors qualified to the applicable category for the work being performed, as follows:
    - (1) For projects performed under the Building Code of New York State, inspectors shall be qualified in accordance with BC Table 1704.1.
    - (2) For projects governed by the New York City Building Code, inspectors shall be qualified in accordance with 1 RCNY 101-06, Appendix A.
- b) Functions: Special inspection for seismic resistance shall be provided when specified by the registered design professional in responsible charge as described in BC 1707 of the applicable building code.

**22) SPECIAL INSPECTION REQUIREMENTS OF NEW YORK CITY BUILDING CODE**

**a) WALL PANELS, CURTAIN WALLS AND VENEERS**

- i) Certifications/Qualifications Required:
  - (1) Inspectors shall meet the qualification requirements of 1 RCNY 101-06, Appendix A under the following Special Inspection Category:
    - (a) "Wall Panels, Curtain Walls and Veneers"
    - (b) "Masonry", as applicable
- ii) Functions: The inspectors shall perform the following functions under the direct supervision of a Professional Engineer or Primary Inspector, who shall have the ultimate responsibility for all field tests and inspection personnel:
  - (1) Services shall be provided in accordance with BC 1704.10.
  - (2) Masonry Veneer shall be in accordance with BC 1704.5.

**b) MECHANICAL AND HEATING SYSTEMS**

- i) Certifications/Qualifications Required:

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- (1) Inspectors shall meet the qualification requirements of 1 RCNY 101-06, Appendix A under the following Special Inspection Categories, as applicable to the system being inspected:
  - (a) "Mechanical Systems"
  - (b) "Heating Systems"
- ii) Functions: Special inspection and testing of mechanical systems regulated by Chapters 10, 11 and 12 of the New York City Mechanical Code. The inspectors shall perform the following functions under the direct supervision of a Professional Engineer or Primary Inspector, who shall have the ultimate responsibility for all field tests and inspection personnel:
  - (1) Mechanical Systems:
    - (a) Tests shall be performed in accordance with BC 1704.15.1.
    - (b) Inspections shall be provided in accordance with BC 1704.15.2.
  - (2) Heating Systems:
    - (a) Tests shall be performed in accordance with MC 1011.
    - (b) Inspections shall be provided to verify compliance with the approved construction documents (BC 1704.23).
- c) **HIGH PRESSURE STEAM PIPING**
  - i) Certifications/Qualifications Required:
    - (1) Inspectors shall meet the qualification requirements of 1 RCNY 101-06, Appendix A under the following Special Inspection Category:
      - (a) "Mechanical Systems" for testing of high-pressure-steam; and/or
      - (b) "Welding" for inspection of welding and welding operations.
    - (2) Radiographic / Non-Destructive Testing (NDT):
      - (a) Current American Society for Non-Destructive Testing (ASNT) Level II Certified by current employer to 'SNT-TC-1A' or by ASNT Control Certified Program (ACCP) in the relevant NDT method, OR
      - (b) ASNT Level II or III certified to ACCP in the relevant NDT Method.
  - ii) Functions: The inspectors shall perform the following functions under the direct supervision of a Professional Engineer or Primary Inspector, who shall have the ultimate responsibility for all field tests and inspection personnel:
    - (1) Inspection of welding and welding operations in accordance with BC 1704.17.1 and 2;
    - (2) Testing of high pressure steam piping in accordance with BC 1704.17.3 and Section 1210.4.10 of the New York City Mechanical Code; and

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- (3) Radiographic Testing in accordance with the New York City Mechanical Code, MC 1210.4.9.

**d) HIGH PRESSURE GAS PIPING**

i) Certifications/Qualifications Required:

- (1) Inspectors shall meet the qualification requirements of 1 RCNY 101-06, Appendix A under the following Special Inspection Category:
  - (a) "Mechanical Systems" for testing of high-pressure-gas piping; and/or
  - (b) "Welding" for inspection of welding and welding operations.
- (2) Radiographic / Non-Destructive Testing (NDT):
  - (a) Current American Society for Non-Destructive Testing (ASNT) Level II Certified by current employer to 'SNT-TC-1A' or by ASNT Control Certified Program (ACCP) in the relevant NDT method, OR
  - (b) ASNT Level II or III certified to ACCP in the relevant NDT Method.

ii) Functions: The inspectors shall perform the following functions under the direct supervision of a Professional Engineer or Primary Inspector, who shall have the ultimate responsibility for all field tests and inspection personnel:

- (1) Inspection of welding and welding operations in accordance with BC 1704.17.1 and 2;
- (2) Testing of high pressure steam piping in accordance with BC 1704.17.3 and the New York City Fuel Gas Code Section 406.4; and
- (3) Radiographic Testing in accordance with the New York City Fuel Gas Code, Section 406.4.

**e) STRUCTURAL SAFETY DURING CONSTRUCTION OPERATIONS**

i) Certifications/Qualifications Required:

- (1) Inspectors shall meet the qualification requirements of 1 RCNY 101-06, Appendix A under the following Special Inspection Categories, as applicable:
  - (a) "Structural Safety – Stability, and Mechanical Demolition"
  - (b) "Excavation – Sheet piling, Shoring and Bracing"

ii) Functions: The inspectors shall perform the following functions under the direct supervision of a Professional Engineer or Primary Inspector, who shall have the ultimate responsibility for all field tests and inspection personnel:

- (1) Structural Safety – Structural Stability in accordance with BC 1704.19.

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- (2) Mechanical Demolition in accordance with BC 1704.19 and BC 3306.6
- (3) Excavation–Sheeting, Shoring and Bracing in accordance with BC 1704.19 and BC 3304.4.1

**f) SPRINKLER/STANDPIPE SYSTEMS**

i) Certifications/Qualifications Required:

- (1) Inspectors shall meet the qualification requirements of 1 RCNY 101-06, Appendix A under the following Special Inspection Categories, as applicable:
  - (a) “Standpipe Systems and Sprinkler Systems”

- ii) Functions: The inspectors shall perform the following functions under the direct supervision of a Professional Engineer or Primary Inspector, who shall have the ultimate responsibility for all field tests and inspection personnel:
  - (1) New and altered sprinkler systems shall be inspected and tested in accordance with BC 1704.21 and BC 903; and
  - (2) New and altered standpipe systems shall be inspected and tested in accordance with BC 1704.22 and BC 905.

**g) FIRESTOP, DRAFTSTOP, AND FIREBLOCK SYSTEMS**

i) Certifications/Qualifications Required:

- (1) Inspectors shall meet the qualification requirements of 1 RCNY 101-06, Appendix A under the following Special Inspection Categories, as applicable:
  - (a) “Firestop, Draftstop and Fireblock Systems”

- ii) Functions: The inspectors shall perform the following functions under the direct supervision of a Registered Design Professional or Primary Inspector, who shall have the ultimate responsibility for all field tests and inspection personnel:
  - (1) Verify compliance of installations with the approved construction documents and/or their listing (for listed systems); or
  - (2) Inspect in accordance with ASTM E2174-04 when authorized by the registered design professional of record.

**h) ADDITIONAL REQUIREMENTS**

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- i) The following special inspection items are unique to projects performed under the New York City Building Code and shall be performed when required following the requirements outlined in the referenced Code section and related Rules, Laws, Bulletins, etc. issued by the Department of Buildings:
  - (1) Fuel storage and fuel piping systems in accordance with BC 1704.16
  - (2) Site storm drainage disposal and detention facilities in accordance with BC 1704.20, including:
    - (a) Soil percolation tests in accordance with BC 1704.20.1
  - (3) Chimneys in accordance with BC 1704.24
  - (4) Aluminum construction in accordance with BC 1704.26
- ii) Qualifications of inspectors and technicians providing special inspection of the above listed items shall be in accordance with applicable categories listed in the table provided in 1 RCNY 101-06, Appendix A.

**23) PROGRESS INSPECTION REQUIREMENTS OF THE NEW YORK CITY BUILDING CODE**

- a) The following progress inspection items are unique to projects performed under the New York City Building Code and shall be performed when required following the requirements outlined in the referenced code section, the approved agency rule 101-07 and other rules, laws and bulletins issued by the Department of Buildings:
  - i) Footing and foundation in accordance with BC 109.3.1
  - ii) Frame inspection in accordance with BC 109.3.3
  - iii) Fire-resistance rated construction inspection in accordance with BC 109.3.4
  - iv) Public assembly emergency lighting in accordance with 28-116.2.2
  - v) Final in accordance with 28-116.2.4.2 and 1 RCNY 101.10
    - (1) Applicable for cases where the permitted work does not require the issuance of a certificate of occupancy.
  - vi) Energy Code Compliance inspections in accordance with BC 109.3.5 and the following:
    - (1) 1 RCNY 101-07
    - (2) 1 RCNY 5000-01
    - (3) TR8
- b) Qualifications of approved agency personnel providing the progress inspections listed above shall be qualified in accordance with applicable categories listed in the table provided in 1RCNY 101-07 (c)(3)(iv).

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**24) OTHER INSPECTIONS AND TESTS**

- a) The project contract documents may define additional inspection and testing work as the Owner's responsibility that is not a requirement of the Code.
- b) Window/Curtain Wall Testing
  - i) Certifications/Qualifications Required:
    - (1) Windows shall be field tested by an AAMA-accredited testing laboratory, in accordance with the following:
    - (2) ASTM E783, Field Measurement of Air Leakage Through Installed Exterior Windows and Doors.
    - (3) ASTM E1105, Field Determination of Water Penetration of Installed Exterior Windows, Curtain Walls and Doors by Uniform or Cyclic Static Air Pressure Difference.
  - ii) Typical Scope of Testing:
    - (1) Retain the service of a sub-consultant to perform field testing of windows, where specified and requested, in accordance with the following:
      - (a) AAMA 502-02 – Voluntary Specification for Field Testing of Windows and Sliding Glass Doors
      - (b) AAMA 503-03 – Voluntary Specification for Field Testing of Storefronts, Curtain Walls and Sloped Glazing Systems
      - (c) AAMA 501.2-03 – Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls and Sloped Glazing Systems.
    - (2) Chamber for testing shall be erected on the exterior face of the building, as applicable, unless otherwise required by the contract drawings and specifications.
    - (3) Additional details concerning testing shall be as specified in the drawings and specifications for a specific project.
    - (4) If the window fails any part of a test, immediately notify the Contractor and Owner's Representative verbally and follow up in writing for unresolved issues.

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- (5) Payment for initial testing for all windows selected for testing will be by the Owner. The expense of all remediation and re-testing shall be borne by the Contractor. Contractor shall provide access and accommodations for the testing laboratory.
- (6) Test reports shall include all tests, test results, including failures and remedial work performed on the specimen, reported in a single test report.
- (7) Scope of testing may be modified from the above based on specific project requirements, and may also include testing of mock ups at the Professional's shop. Detailed requirements will be outlined in each project-specific work authorization.

c) Asphalt Testing

- i) Service shall be provided by qualified inspectors and technicians where specified as the Owners responsibility in the project contract documents. Detailed scope and qualification requirements will be outlined in the project-specific work authorization.

d) Roofing Testing

- i) Service shall be provided by qualified inspectors and technicians where specified as the Owners responsibility in the project contract documents. Detailed scope and qualification requirements will be outlined in the project-specific work authorization.