

**New York State Department of Civil Service**  
DIVISION OF CLASSIFICATION & COMPENSATION

Classification Standard

**Occ. Code 4773100**

<b>Materials Testing Specialist 1, Grade 19</b>	<b>4773100</b>
<b>Materials Testing Specialist 2, Grade 23</b>	<b>4773200</b>
<b>Materials Testing Specialist 3, Grade 27</b>	<b>4773300</b>

Brief Description of Class Series

Materials Testing Specialists direct and perform a variety of non-destructive tests (NDT) on metal used for structural purposes, and on welding components of such structures.

Positions in this series are usually classified at the Thruway Authority and at the Department of Transportation.

Distinguishing Characteristics

*Materials Testing Specialist 1:* full performance level; under the general direction of a Materials Testing Specialist 2 or a Professional Engineer, performs the full range of duties associated with the title; may monitor or supervise field and laboratory crews of lower-level technicians assisting in materials testing for quality assurance.

*Materials Testing Specialist 2:* supervisory level; supervises Materials Testing Specialists 1 and other lower-level technicians; trains and mentors subordinates to successfully obtain mandatory federal and State certifications.

*Materials Testing Specialist 3:* managerial level; provides statewide fabrication and testing leadership; responsible for the directions and development of a materials fabrication and testing program and for its coordination with local, State, and/or federal officials as well as consultants, contractors, and/or industry representatives; serves as the supervisor of multiple work sections overseen by Material Testing Specialists 2 and Professional Engineers 1.

Related Classes

Engineering Materials Analysts determine the suitability of engineering materials for use in construction, such as concrete aggregates, cement, sand, gravel, steel, and other construction materials.

## Illustrative Tasks

### *Materials Testing Specialist 1*

Performs structural metals fabrication quality control (QC) and quality assurance activities.

Performs NDT metals testing, including radiography, magnetic particle, and dye penetrant testing.

Evaluates a contractor's proposed methods of fabrication and erection of structural steel and other metal items to ensure conformance with structural and material requirements of the contract documents.

Approves welding procedures.

Reviews and approves proposed methods of repair.

Approves working drawings necessary to control welding, heat curving, erection, and transportation.

Advises engineers and consultants on the use of structural metals and appropriate testing methods.

Recommends details and procedures that lead to economical fabrication and erection.

Conducts prefabrication inspections and start-up meetings at structural steel fabrication plants.

Determines if fabrication facilities meet the minimum requirements to manufacture structural steel according to specifications.

Assists in the development of policies, directives, and specifications for the design, fabrication, erection, and testing of structural steel bridge member and other metal structures.

May monitor the work of lower-level technicians for quality assurance.

### *Materials Testing Specialist 2*

May perform all of the duties listed for Materials Testing Specialists 1.

Supervise lower-level staff and review procedure qualification reports (PQRs) and welding procedure specifications (WPSs).

Maintain and update New York State's Steel Construction Manual (SCM).

Assist in the development of metals-related specifications.

Advise designers and other engineers on welding-related issues.

Communicate with fabricators and contractors when problems arise.

Perform ultrasonic testing (UT) on weldments and plates to properly locate and document flaws related to welding and manufacturing errors.

Examine and interpret radiographs and UT reports submitted by fabricators and testing agencies.

Advise engineering supervisors on how to respond to contractor Requests for Information (RFIs) related to welding.

Evaluate the performance/competency of fabrication shops that are proposing to work on projects.

Train subordinate personnel to perform magnetic particle and dye penetrant inspections.

Develop repair procedures for steel bridges damaged by vehicle impact.

Evaluate contractor and fabricator remedies to address damage caused by fabrication errors or construction accidents.

Update the SCM in response to industry developments/changes and, if needed, develop new specifications for welding procedures and NDT methodology.

Manage consultant inspectors working under contract in fabrication shops, including field visits to evaluate inspector and fabricator performance.

Administer the agency's UT program, including the facilitation of certification tests and subsequent grading.

### *Materials Testing Specialist 3*

Supervise multiple units consisting of Materials Testing Specialists and other professional technical positions.

Provide statewide fabrication and testing oversight.

Direct and assist with the maintenance and development of New York State's SCM.

Direct the maintenance and development of metals related specifications.

Direct emergency bridge repairs on steel structures statewide.

Provide technical leadership in addressing complex fabrication and testing issues with high-cost implications.

Oversee the administration of the agency's UT program.

Direct quality assurance functions related to steel fabrication.

Direct the evaluation of the performance, competency, and inspection of the fabrication shops that are proposing to work on projects.

Direct the review of steel fabrication shop drawings and steel erection procedures.

Direct the review of PQRs and WPSs.

Represent the agency in meetings and communications with consultants, contractors, industry representatives, and/or public agencies related to fabrication and testing of steel bridge projects and policies.

### Minimum Qualifications

#### *Materials Testing Specialist 1*

Open Competitive: six years of experience in structural steel fabrication and structural metal inspection during fabrication and construction that included radiograph review of welds and the performance and interpretation of magnetic particle, dye penetrant, and hardness tests; or, a bachelor's degree in applied science, engineering, architecture, or construction technology and two years of the required experience; or, an associate's degree applied science, engineering, architecture, or construction technology and four years of the required experience.

Special Occupational Requirement: upon beginning service with the State, employees in this title must obtain New York State Department of Transportation Certification as an Ultrasonic Testing Technician within one year of permanent appointment. Failure to obtain or maintain this certification will result in termination of employment.

#### *Materials Testing Specialist 2*

Promotion: one year of service as Materials Testing Specialist 1.

Open Competitive: ultrasonic testing technician certification and seven years of experience in welding inspection, fabrication QC, and/or NDT of steel structures (preferably bridges), two years of which must include practical UT experience; and one year of supervisory experience; or, a bachelor's degree in Applied Engineering Science, Mechanical Engineering, Civil Engineering, Material Science (including Metallurgy), Metallurgical Engineering, Welding Engineering, or Welding Technology, and three years of the required experience, including UT certification and supervision; or, an associate's degree in Applied Engineering Science, Mechanical Engineering, Civil Engineering, Material Science (including Metallurgy), Metallurgical Engineering, Welding Engineering, or Welding Technology, and five years of the required experience, including UT certification and supervision.

*Materials Testing Specialist 3*

Promotion: one year of service as Materials Testing Specialist 2.

**Note:** Classification Standards illustrate the nature, extent, and scope of duties and responsibilities of the classes they describe. Standards cannot and do not include all the work that might be appropriately performed by a class. The minimum qualifications above are those required for appointment at the time the Classification Standard was written. Please contact the Division of Staffing Services for current information on minimum requirements for appointment or examination.

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