

**CALIFORNIA DEPARTMENT OF TRANSPORTATION  
DUTY STATEMENT**

<b>CLASSIFICATION TITLE</b> Transportation Engineering (Civil)	<b>DISTRICT/DIVISION/OFFICE</b> DES/METS GS/Office of Structural Materials	
<b>WORKING TITLE</b> Structural Materials Engineer	<b>POSITION NUMBER</b> 559-318-3135-xxx	<b>EFFECTIVE</b>

**As a valued member of the Caltrans team, you make it possible for the Department to provide a safe, sustainable, integrated, and efficient transportation system to enhance California’s economy and livability. Caltrans is a performance driven, transparent, and accountable organization that values its people, resources and partners, and meets new challenges through leadership, innovation and teamwork.**

**GENERAL STATEMENT:** Under the direction of the Senior Engineer, the Transportation Engineer will perform the duties of a Structural Materials Engineer (SME) within the Office of Structural Materials (OSM), Quality Assessment and Management Branch (QAM). The primary function of the OSM is to ensure the materials and products used in California Department of Transportation (Department) construction projects comply with contract requirements. A valid California driver's license is desirable. Travel is required in California, other states, and possibly outside of the USA.

**TYPICAL DUTIES:**

Percentage	Job Description
Essential (E)/Marginal (M) <sup>1</sup>	

- |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 30% (E) | Researches and evaluates Quality Assurance (QA) practices for source inspection and sampling of structural materials. Evaluate, develop, document, test, and assist in implementation of QA procedures such as pre-qualification, systematic sampling and testing, and tracking of vendor conformance and nonconformance. Evaluation of existing procedures requires review of contract documents, contract standards, source inspection and sampling, assisting in pre-qualification audits, assisting in review of quality control plans by working closely with inspectors and Structural Materials Representatives. |
| 30% (E) | Develops specification change requests for OSM. Updates OSM Quality Management System Manual to assure it reflects current office practice.                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

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<sup>1</sup> ESSENTIAL FUNCTIONS are the core duties of the position that cannot be reassigned  
MARGINAL FUNCTIONS are the minor tasks of the position that can be assigned to others

- 30% (E) Coordinates, acts as liaison with industry and serves as audit or programmatic assessment team lead/member to verify material fabrication/production quality control processes. Anticipates and resolves issues associated with source inspection and quality assurance activities for a given procedure and recommends changes for future work.
- 10% (M) Develops and maintains databases on programmatic assessments, pre-qualifications, audits and vendor performance. Includes making updates to Internet and Intranet pages.

### ***SUPERVISION EXERCISED OVER OTHERS***

Receives supervision and guidance from the Senior Engineer. When required by the Branch Chief, may act as the lead person of the Branch. This responsibility is job-oriented and does not include complete personnel supervision such as discipline and time sheet approval.

### ***KNOWLEDGE, ABILITIES AND ANALYTICAL REQUIREMENTS***

Must have a working knowledge of fabrication procedures and practices related to structural materials. Thorough knowledge of highway and bridge construction materials and inspect on and testing practices and procedures, as defined by the Department's specifications, ASTM, AASHTO, AWS, ASTM, PCI, and other nationally recognized guidelines. Must be familiar with the Department's Standard Plans and Specifications, ASTM, AISC, AASHTO and other related specifications. The position requires the ability to analyze situations, materials, and test data to perform structural engineering calculations. Must be able to prepare comprehensive reports, prepare correspondence, effectively communicate verbally, and develop and maintain a cooperative working relationship with other employees and private industry. Must be able to perform engineering calculations related to testing and manufacturing processes of materials. Must be able to analyze test methods and rep contract documents, quality assurance programs and to develop and write new test methods as the need develops. Must be able to make an economic analysis and risk assessment for different quality assurance procedures under consideration.

### ***CONSEQUENCE OF ERROR/RESPONSIBILITY FOR DECISIONS***

The incumbent must maintain confidentiality regarding manufacturing processes and procedures of area industries relative to manufacturing processes and new materials. The consequences of not exercising the above responsibilities could lead to delay of construction contract schedules, cost overruns, and inefficient use of staff. Poor decisions can result in the acceptance of inferior materials or products having a decreased service life and/or decreased effectiveness. This can result in a loss of substantial amounts of government funds, contract claims, and delays to contract completion. In addition, release of confidential material could result in legal actions and loss of the

integrity of the Office. Such damage to our public relations will reduce effectiveness through a loss of mutual confidence with private industry.

### ***PUBLIC AND INTERNAL CONTACTS***

Maintains close communications with supervisor, other inspection offices, private testing laboratories, and the Districts and Headquarters offices. Maintains fair, impartial, effective relationship with materials suppliers, fabricators, and manufacturing plants that supply various products for highway and bridge construction. Confers with other state or public representatives, representatives of Federal Highway Administration (FHWA), and the general public to transmit or obtain relevant engineering information. Follows the Department's established chain of command when communicating internally and follows Department procedure when corresponding with private industry. Represents and makes oral presentations within the Department, as well as at public affairs, all within the Department's guidelines. Discusses materials problems with resident engineers and attends reconstruction and prefabrication conferences as necessary. This position may require contact with District Design and Structure Design. This position also requires contact with other Department offices such as Budgets, Maintenance, Construction, Administration and Civil Rights. On occasion, the incumbent receives calls from contractors and the general public.

### ***PHYSICAL, MENTAL AND EMOTIONAL REQUIREMENTS***

Incumbent may be required to sit and/or stand for long periods of time depending on whether in the office or in the field. Will use a telephone, keyboard and video display terminal. Must sustain physical and mental alertness while working in and about heavy equipment and the motoring public. Will be required to develop and maintain cooperative working relationship and respond appropriately to difficult situations. Employee will be required to drive a motor vehicle and travel statewide. Employee may occasionally be required to move materials weighing up to 30 pounds.

### ***WORK ENVIRONMENT***

While at their base of operation, incumbent will work in a climate-controlled office under artificial lighting. Incumbent will be required to travel and perform fieldwork and will be exposed to dirt, uneven surfaces, extreme temperatures, noise, vibration, and odor associated with fieldwork. May work around bulky/heavy materials and equipment used in the vicinity of inspection areas. May also be exposed to the motoring public

I have read, and understand the duties listed above and can perform them either with or without reasonable accommodation. (If you believe you may require reasonable accommodation, please discuss this with your hiring supervisor. If you are unsure whether you require reasonable accommodation, inform the hiring supervisor who will discuss your concerns with the Reasonable Accommodation Coordinator.)

\_\_\_\_\_  
Employee's Name

\_\_\_\_\_  
Signature Date

I have discussed the duties with and provided a copy of this duty statement to the employee named above.

\_\_\_\_\_  
Supervisor's Name

\_\_\_\_\_  
Signature Date