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Bracketed section numbers refer to the 2006 *Standard Specifications*.

## Section 6 Control of Materials

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### 3-601 General

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Section 6, “Control of Materials,” of the *Standard Specifications*, describes the contractor’s responsibilities regarding materials used on the project.

The service life of a properly designed highway depends on the construction methods and quality of materials used in the highway’s construction. The resident engineer must ensure that materials used in the work comply with contract specifications. This section presents general guidelines for ensuring that specifications are met.

Caltrans’ Office of Materials Engineering and Testing Services (METS) will assign inspectors for materials that require inspection during manufacture or at the source of supply. Obtain a properly completed Form CEM-3101, “Notice of Materials to Be Used,” which lists the contractor’s sources of materials and the location at which those materials can be inspected. Review this form to ensure that all expected materials are included, then forward the completed form to METS. METS will ensure the proper assignment of inspectors and notify the suppliers of the required inspections.

For a list of products inspected by METS, see Table 6-2.1, “Inspection of Fabricated and Manufactured Materials,” of this manual.

Not all products will be inspected by METS. METS has assigned to the resident engineer the inspection and release at the job site of those products listed in Table 6-2.2, “Materials Acceptance Based on Authorized Material List,” and Table 6-2.3, “Materials Accepted by Certificate of Compliance,” of this manual.

Do not allow any material to be incorporated into the work until the required evidence or certificate of inspection has been received and until the field inspection has been completed at the job site.

### 3-602 Department-Furnished Materials

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Section 6-2.03 [6-1.02] “Department-Furnished Materials,” of the *Standard Specifications* describes the conditions under which the contractor receives department-furnished materials. The resident engineer’s duties related to these materials include the following:

- Review the special provisions for materials to be furnished. For materials manufactured specifically for the project, such as signs, check with the district unit responsible for ordering them to ensure they will be available when the contractor requests them.
- Obtain the contractor’s written request for all department-furnished materials. Retain a copy of the request in the project file under Category 52, “Charges to Total Contract Allotment.”
- Ensure the contractor signs a receipt for the materials when they are delivered. Retain a copy of the receipt in the project file.

- If department-furnished materials are damaged or lost, deduct a sufficient amount from the contractor's monthly estimate to cover the estimated cost of repair or replacement, pending such repair or replacement.
- Ensure the return or disposal of department-furnished material that has not been used in the work.

### 3-603 Local Materials

Section 6-2.04 [6-2], "Local Materials," of the *Standard Specifications*, covers the requirements for the use of local materials and the resident engineer's responsibility for testing the material. This section also requires the contractor to furnish material from any source the contractor may elect, except that when mandatory local sources of certain materials are designated in the special provisions or on the plans, the contractor must furnish material from those designated mandatory sources.

If the contractor elects to obtain material from a non-mandatory local source, the contractor is responsible for making all arrangements necessary to obtain materials from that source. The contractor must furnish the resident engineer with a copy of the contractor's agreement with the property owner and provide copies of all necessary permits, licenses, and environmental clearances prior to removing any material. Refer to Section 3-510, "Coordination With Other Entities," of this manual and Section 5-1.20 [6-2.01], "Coordination With Other Entities," of the *Standard Specifications* for additional information.

Where Caltrans has entered into agreements with property owners in the vicinity of a project for obtaining material from an owner's property, the arrangements are made solely for the purpose of providing all bidders an equal opportunity to obtain material from that property. Provide the contractor a copy of the agreement between Caltrans and the property owner. Refer to Section 3-510, "Coordination with Other Entities," of this manual for more information.

The special provisions may require the contractor to obtain materials from a specified source. It may be necessary for the contractor to process the material as indicated in the special provisions to produce acceptable materials from this source.

If the resident engineer determines that the specified local material source can no longer be used for any reason, designate an alternative local material source for the balance of the material. Pay for the costs associated with the change in material source as extra work.

Occasionally, it becomes necessary to obtain additional embankment material from outside the local area when the contract does not allow the contractor to import non-local material because there is no item for "imported borrow." Under these circumstances, it is normal practice for Caltrans to locate an alternative source for this material. Consult with the district materials engineer for help locating an alternative material source.

In accordance with the State Contract Act, material sources must comply with the Surface Mining and Reclamation Act of 1975 (SMARA). Refer to Chapter 7, "Environmental Stewardship," of this manual and the Department of Conservation's website at the link provided later in this section for further information regarding SMARA requirements.

If a change order directs the contractor to obtain material from Caltrans' chosen source, the Federal Highway Administration (FHWA) considers the source mandatory. The

FHWA then requires written approval of a public interest determination before approval of the change order.

At a minimum, the public interest determination, written by the resident engineer, must include the following:

- The reason the chosen source is the most economical. If the determination is not based on economy, other reasons such as public safety or convenience must be included.
- The alternatives considered.
- The effect on the value of the material site.

All such sites are subject to compliance with SMARA. Mining operations determined to be in compliance are listed on the AB 3098 SMARA Eligible List. This list can be obtained from the Division of Construction or at the Department of Conservation's website:

[http://www.consrv.ca.gov/OMR/ab\\_3098\\_list/index.htm](http://www.consrv.ca.gov/OMR/ab_3098_list/index.htm)

The above requirements do not apply to "local borrow," as defined in Section 19-7 [19-7.01], "Borrow Material," of the *Standard Specifications* and the special provisions. Refer to Chapter 7, "Environmental Stewardship," of this manual for a list of mining operations which are and which are not subject to SMARA requirements.

### **3-604 Quality**

Section 6-3.04, "Quality Control," of the *Standard Specifications* informs the contractor of general quality control requirements regarding the materials incorporated into the work. Ensure the contractor maintains thorough quality control records.

Section 6-3.05, "Quality Assurance," of the *Standard Specifications* allows the resident engineer access to the material sources for quality assurance. Refer to Section 3-501, "General," of this manual for information regarding safe access.

The resident engineer and their authorized representatives have a primary duty to sample and test the materials incorporated into the work to ensure compliance with the *Standard Specifications*, special provisions, and plans within the tolerances specified. When tolerances are not specified, the resident engineer and their authorized representatives use judgment in determining the allowable deviation consistent with the trades and materials involved.

Deduct retesting costs. Contact the district materials engineer who oversees the district materials lab for guidance on determining the costs. For hot mix asphalt verification retesting, refer to Section 39-1.03E, "Job Mix Formula Verification," of the *Standard Specifications*.

### **3-605 Brand or Trade Names and Substitutions**

When specific brand or trade names are used to designate required products, the contractor may furnish other products that are of equal or better quality.

A product is not necessarily equivalent merely because it is on an approved products list published by Caltrans. These lists indicate that the products meet the general qualifications. However, some of the listed products may not meet the specific needs of the project or may not be appropriate for a particular location due to factors such as climate conditions or maintenance difficulties. Consult with the responsible unit (the

### **3-604 Quality**

### **3-605 Brand or Trade Names and Substitutions**

design unit, traffic unit, maintenance unit, or METS, among others) before making decisions about the acceptability of substitutes.

**3-606  
Certificates of  
Compliance**

**3-606 Certificates of Compliance**

For a discussion about certificates of compliance, refer to Section 6-203C, “Materials Accepted on the Basis of a Certificate of Compliance,” of this manual.

3-606A Buy America Requirements

Section 6-2.05 “Buy America” of the *Standard Specifications* includes Buy America provisions for crumb rubber, steel, and iron materials.

A discussion of the Buy America requirements should be included in preconstruction conferences for federal-aid projects.

To be considered a domestic material, all manufacturing processes must take place domestically. Manufacturing begins with the initial melting and mixing and continues through the bending and coating stages. If a domestic product is taken out of the United States for any process, it becomes a foreign source of material.

The manufacturing process for steel and iron products is considered complete when the product is ready for use in items such as fencing, posts, and girders. It could also be considered complete if the material could be incorporated as components of a more complex product through a further manufacturing process, as is the case for a traffic signal head. The final assembly process does not need to be accomplished domestically as long as the steel or iron component is only installed and no manufacturing process is performed on the steel or iron component.

A certificate of compliance from the manufacturer (not the contractor) showing compliance with Buy America requirements must accompany all steel and iron products incorporated into a federal-aid project. The resident engineer must ensure receipt of the required certificates of compliance and mill test reports.

*3-606A (1) Resident Engineer Approval of Minimum Use Requirements*

Buy America requirements do not apply to a minimal use of steel and iron materials incorporated in the work as specified in Section 6-2.05C, “Steel and Iron Materials,” of the *Standard Specifications*.

Before incorporating any foreign steel and iron materials into the work, the contractor must submit documentation of the quantity and value of any foreign steel and iron to the resident engineer. Review the documentation to determine if it supports the minimum use rule before allowing the material to be incorporated into the project. If the minimum use rule applies, approve the exception in writing. This applies as a one-time total exemption for each contract, not for each purchase. File the documentation, exceptions, and a running total of the value of foreign steel and iron allowed under the minimal use allowance under Category 41, “Report of Inspection of Materials.”

*3-606A (2) Federal Highway Administration Approval of Waivers*

Caltrans does not have the authority to allow the use of foreign steel and iron in federal-aid projects without FHWA approval. The California FHWA Division administrator may grant waivers only upon receiving concurrence from FHWA headquarters in Washington, D.C. Approval or denial may take several months.

Approval by FHWA of the waiver is required prior to allowing foreign steel or iron that exceeds the minimum use rule into the project. Lack of an FHWA-approved waiver can result in the loss of all federal funds for the project.

The contractor must submit the following information to the resident engineer when requesting a waiver to Buy America requirements:

- A detailed description of the waiver item.
- Item cost—obtained from the manufacturer or supplier.
- The country of origin for the product.
- The reason for the waiver.

The resident engineer must provide the following information when preparing a waiver request for the FHWA engineer:

- The contractor's waiver submission.
- Federal-aid project number, description, and location.
- Analysis of proposed redesigns using available domestic products

### **3-607 Out-of-State Fabrication**

Section 6-3.05B, "Source Inspection Expense Deductions," of the *Standard Specifications* includes deductions in payment for fabrication at some distance from Sacramento and Los Angeles. In addition, some special provisions may modify the amount to be deducted. Deduct the appropriate amount, applying it as an administrative deduction on estimates that include payment for the item. Use a standard description of "Out of State Inspect" on Form CEM-6101, "Project Record—Estimate Request." This deduction should be made in whole, when appropriate. However, if the deduction is large, the resident engineer has the option to deduct incremental amounts until the full deduction is made.

### **3-608 Testing**

In addition to the California Tests, the *Standard Specifications* contain references to the standards and tests of the American Association of State Highway and Transportation Officials (AASHTO) and the American Society for Testing and Materials (ASTM). These standards and tests may or may not be readily available to the resident engineer. Note any references to these tests well in advance of need, and obtain any necessary copies of them from the district materials engineer. It is not practical to supply each resident engineer with complete AASHTO and ASTM standard test procedures.

Whenever samples are taken from materials sites, the resident engineer must ensure the samples are representative of material being used. Degradation and segregation may occur in aggregates between the processing operation and their incorporation in the work. The resident engineer cannot assume that material satisfactorily tested at the source or at the processing plant is still satisfactory at the job site. To ensure specification compliance, confirm the contractor tests at the frequencies shown in the specifications as the material is being incorporated into the work. Also, perform and record acceptance tests as required by Section 6-1, "Sample Types and Frequencies," of this manual.

### **3-607 Out-of-State Fabrications**

### **3-608 Testing**

### 3-608A Operating Range and Contract Compliance

Section 25, “Aggregate Subbases”; Section 26, “Aggregate Bases”; Section 27, “Cement Treated Bases”; Section 28, “Concrete Base”; Section 39, “Hot Mix Asphalt”; and Section 90, “Concrete,” of the *Standard Specifications*, all contain provisions for an acceptable range of test results. If a test result fails to meet the requirements of the operating range but meets contract compliance, the contractor usually needs to make some change in operations to ensure subsequent test results meet the “operating range” requirements. The resident engineer should document the contractor’s actions and any off-site testing done before the next day’s work.

If a test result fails to meet the specified value for contract compliance, the result should be treated just like any other failing test result. However, if the contractor writes a request, the resident engineer may consider leaving the material in place and applying the specified deduction, if the specifications allow. The contractor’s written request, along with documentation of reasons for leaving the material in place and the contractor’s actions, is sufficient for the contract records. A change order accepting out-of-specification material is not required in this case because the specifications provide the procedure for acceptance.

The resident engineer must inform the contractor promptly of test results that indicate unacceptable or borderline work. The contractor must be advised that all test results are available for the contractor’s inspection. Accordingly, test results must remain in the project files for ready accessibility.

### **3-609 3-609 Testing by Contractor**

#### **Testing by Contractor**

The contractor must be satisfied at all times that the quality of materials entering the work and the work performed, regardless of who supplies the materials or performs the work, will meet the contract requirements. For acceptance of materials or work, resident engineers must not use as documentation any tests the contractor performs to control the work.

### **3-610 3-610 Suspected Fraudulent Test and Inspection Reports**

#### **Suspected Fraudulent Test and Inspection Reports**

When fraudulent tests or inspection reports are suspected, discuss the situation with the Division of Construction field coordinator. Contact METS for assistance in evaluating the reports. Retest the material represented by suspect tests, as appropriate. If after investigating, fraud is still suspected, the deputy district director provides the facts in writing to the Division of Construction field coordinator.

### **3-611 3-611 Guarantee**

#### **Guarantee**

#### 3-611A General

The contractor must perform corrective work due to a substantial defect as part of the guarantee if all of the following can be demonstrated:

1. The substantial defect existed in the contractor’s work based on the specifications.
2. The substantial defect existed when the contract work was accepted.
3. A reasonable inspection by the resident engineer during construction would not have revealed the defect.

If the resident engineer cannot demonstrate the substantial defect is the responsibility of the contractor, the corrective work cannot be completed as part of the contract.

If a substantial defect is identified, the resident engineer will discuss the substantial defect with district management and the Division of Construction field coordinator. Send a letter to the contractor describing the substantial defect to be remedied. Any correspondence with the contractor regarding corrective work and the substantial defect must include the following language:

“Your refusal may result in a review of your responsibility to perform future work with Caltrans.”

The contractor can perform corrective work without obtaining an encroachment permit.

The contractor may dispute the need for the corrective work but is nevertheless contractually bound to perform the necessary repairs. If the proposed final estimate (PFE) has not been issued, the contractor can file an exception in response to the PFE. Otherwise, the contractor must file for arbitration pursuant to Section 10240.1 of the Public Contract Code. The contractor has 90 days from the completion of the corrective work or the end of the guarantee period, whichever is later, to file for arbitration.

The end of the guarantee period is 1 year from contract acceptance and will not be suspended or extended based on any corrective work being required or performed.

#### 3-611B Work Not Completed by Contractor

If the contractor refuses to perform the corrective work or if the corrective work requires an immediate response, Caltrans will perform the corrective work. The district may complete the corrective work with its own forces, day labor, by informal contract or by director’s order. Discuss this process with district management and the Division of Construction field coordinator.

The contractor is liable to the state for the costs to Caltrans resulting from the contractor’s failure to complete the corrective work. The resident engineer will need to maintain records on corrective work expenditures to expedite billing.

The resident engineer will send the detailed billing to the Division of Accounting, abatements section, with instructions to prepare the accounts receivable bill and to mail it to the contractor. If the contractor is not available, the bill should be mailed to the surety.