CITY OF CHICO

Chico California

QUALITY ASSURANCE PROGRAM MANUAL

In conjunction with the Caltrans 2025 Standard Specifications

October 2026

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CITY OF CHICO
CHICO, CALIFORNIA

QUALITY ASSURANCE
PROGRAM MANUAL

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City of Chico

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I. INTRODUCTION

1. PURPOSE

The purpose of this Quality Assurance Program (QAP) manual is to provide Departmental guidelines for quality assurance on construction projects to ensure City of Chico wide uniformity with respect to calibrating testing equipment, certifying personnel, sampling and testing materials, preparing material records and to provide assurance that the materials and workmanship incorporated into the construction projects are in conformance with the contract specifications and requirements.

The City of Chico, Department of Public Works is responsible for managing Quality Assurance (QA) on all City of Chico Public Works projects, which includes the City's capital improvement projects, subdivision projects and encroachment permit related work. Quality assurance includes both acceptance sampling and testing and independent assurance sampling and testing.

This QAP supports Section 16.11, "Quality Assurance Program," of the Caltrans Local Assistance Procedures Manual (LAPM) and follows the Caltrans sample QAP template (May 2026). It provides assurance that the materials incorporated into each state and federally funded construction project conform to the contract specifications and to 23 CFR 637. In case of conflicts, the contract documents and the agency-state agreements prevail.

Applicability. This QAP applies in full to state and federally funded projects off the State Highway System (SHS). For projects on the SHS, the City adopts the Caltrans QAP as described in LAPM Section 16.11. The same program applies to the City's locally funded capital improvement, subdivision, and encroachment permit work, except that requirements tied to state or federal funding, such as Buy America and the Final Materials Certification, apply only to state and federally funded projects.

Standard Specifications edition. Caltrans now publishes a new edition of the Standard Specifications each year, with Revised Standard Specifications issued between editions. This QAP was prepared using the Caltrans 2025 Standard Specifications. References in this QAP to the "Standard Specifications" mean the edition named in the project contract, as amended by that contract's revised standard specifications and special provisions. Section numbers, test methods, and certificate of compliance requirements may change between editions. Where they differ from this QAP, the edition named in the contract governs for that project.

The City's QAP will be updated at least every five years. It will be updated sooner if a new edition of the Standard Specifications, or another change, alters the test methods or the sampling and testing frequencies in Appendix C. A new edition that only renumbers sections or changes other requirements does not by itself require a QAP update.

Acronyms and definitions associated with this Quality Assurance Program (QAP) are presented in Appendix A.

2. WHAT IS QUALITY CONTROL

Quality Control (QC) is a plan of action by the Contractor to ensure that materials and products incorporated into the construction meet specific standards. QC is the responsibility of the contractor. The City of Chico does not test or inspect materials for QC or assist in controlling the Contractor's production operations.

Guidelines for performing QC on City of Chico construction projects are described in Section 6-2.02, “Quality Control,” of the Caltrans Standard Specifications.

3. WHAT IS QUALITY ASSURANCE

Quality Assurance (QA) is a series of planned or systematic actions required by the Department to verify that the products or materials entering the work comply with the contract special provisions or standard specifications. QA is a combination of acceptance sampling and testing and independent assurance sampling and testing. Quality Assurance is further described in Section 6-2, “Quality Assurance,” of the Caltrans Standard Specifications.

The main elements of this QAP are the Materials Acceptance Program (Sections II, IV and V) and the Independent Assurance Program (Section III).

4. INDEPENDENT ASSURANCE PROGRAM

Independent assurance verifies that acceptance sampling and testing are performed correctly by certified testers using accredited laboratories and properly calibrated equipment. The City adopts the Caltrans Independent Assurance Program for acceptance testing performed with California Test methods. The Independent Assurance Program is described in Section III. Consultants will not be allowed to perform QC tests for the contractor and independent assurance tests for the City of Chico on the same project.

5. QUALITY ASSURANCE PROGRAM MANAGER

The City of Chico, Department of Public Works shall appoint a Quality Assurance Program Manager (QAPM). The QAPM is responsible for overseeing acceptance testing on City of Chico construction projects. If a consultant is used for acceptance testing, the QAPM shall perform oversight for the acceptance testing. It is the responsibility of the QAPM to maintain a file consisting of copies of Acceptance Testers certifications, laboratory accreditations, letters of decertification, notes to file, etc.

On state and federally funded projects, the City of Chico shall only use laboratories accredited for the test methods performed and testing personnel holding current

certifications, as described in Sections II and III.

6. PROJECT CERTIFICATION

Upon completion of construction of a state or federally funded project, the Resident Engineer (RE) shall complete LAPM 16-E, "Final Materials Certification," and submit a copy to the Caltrans District Local Assistance Engineer (DLAE). All materials incorporated into the work which did not conform to the project specifications must be explained and justified on LAPM 16-E, including changes by virtue of contract change orders. The signed certification shall be kept in the Agency's construction records. See Appendix D.

7. PROJECT RECORDS

All material records of samples and tests, material releases and certificates of compliance for the construction project shall be incorporated into the Resident Engineer's project file. If a state or federally funded project:

1. The files shall be organized as described in Section 16.3.1, "Organization of Project Records," of the Local Assistance Procedures Manual. Quality assurance records shall include, at a minimum:
    - A copy of this Quality Assurance Program
    - Certificates of proficiency for each tester
    - Certificate of accreditation for each testing laboratory
    - Equipment calibration verifications, including nuclear gauges
    - Notice of Materials to be Used
    - Acceptance testing summary logs and test results
    - Certificates of compliance, including Buy America certifications as applicable
    - Source inspection records and reports
    - Final Materials Certification (LAPM 16-E)

2. The complete project file shall be available at a single location for inspection by Caltrans and Federal Highway Administration (FHWA) personnel at any time during the project.

3. The project files shall be available for at least three years following the date of final project voucher.

4. Acceptance testing summary logs shall be kept as described in Section IV.4. The logs facilitate reviews of material sampling and testing by Caltrans and FHWA, and assist the Resident Engineer in tracking the frequency of testing.

5. When two or more projects are being furnished identical materials simultaneously from the same plant, it is not necessary to take separate samples or perform separate tests for each project; however, copies of the test reports are to be provided for each of the projects to complete the records.

II. ACCEPTANCE TESTING

1. INTRODUCTION

Acceptance testing is the regular testing of materials or products that will be incorporated into a construction project to verify that the materials or products comply with contract special provisions and standard specifications. Acceptance tests will continue as work progresses.

Material incorporated into the work is accepted by one or more of the following methods, as specified in the contract: (1) field sampling and acceptance testing, (2) manufacturer's certificate of compliance, (3) source inspection and testing, and (4) visual inspection of minor quantities. Sections II through IV cover field sampling and acceptance testing. Section V covers the other three methods.

Sampling and testing locations and frequencies shall be as specified in the contract. If not specified, the minimum frequencies in the Sampling and Testing Frequency Table in Appendix C apply. These frequencies will be used as a guide for testing on projects and may be adjusted. Guidance documents for sampling of materials may also be found in the:

1. Caltrans Construction Manual, Chapter 6, "Sampling and Testing"
2. California Test methods
3. Standard specifications
4. Special provisions

A project-specific QAP may also be used when the City determines that a project's materials, testing needs, or funding requirements call for one. A project-specific QAP shall meet the requirements of LAPM Section 16.11 and be approved by the QAPM before construction begins. Where the project-specific QAP addresses a requirement, it governs for that project. Where it is silent, this QAP applies. The project-specific QAP shall be kept in the project records.

2. WHO PERFORMS ACCEPTANCE TESTS?

On City of Chico construction projects, acceptance tests are to be performed by properly trained and certified personnel using accredited materials laboratories and properly calibrated equipment. Certifications and accreditations must be specific to the tests being performed. Acceptance tests shall conform to the test methods specified in the contract, as described in Section IV.

Acceptance testing will be performed by an accredited consultant materials laboratory under contract to the City, or by another accredited laboratory authorized by the City. Consultants that perform acceptance sampling and testing for the City of Chico shall work under the direction of the Department and the QAPM. Under no circumstances shall said consultants be allowed to perform acceptance tests for the City of Chico and perform

quality control duties for the contractor on the same construction project.

3. TRAINING OF ACCEPTANCE TESTERS

A. Acceptance Testers (Consultants Contracted By The City Of Chico)

Consultants may be contracted by the City of Chico to perform acceptance testing on City of Chico projects as needed. Prior to performing acceptance tests for the City of Chico, the consultant shall submit to the Department of Public Works, for its files, (1) the laboratory's current accreditation certificate for the test methods to be performed, such as the Caltrans Accredited Laboratory Inspection Report (Form TL-0113), and (2) current certifications for each tester who will perform acceptance sampling or testing.

Sampling and testing personnel shall be certified, for a maximum of five years, by one or more of the following:

- Caltrans Independent Assurance Program (Form TL-0111, "Certificate of Proficiency"), including the Joint Training and Certification Program (JTCP) for the hot mix asphalt and soils and aggregates test methods it covers
- American Concrete Institute (ACI)
- National Institute for Certification in Engineering Technologies (NICET)
- ASTM International
- Other nationally recognized organizations approved by the City

Under the Caltrans Independent Assurance Manual (April 2024), certifications issued by Caltrans independent assurance staff are valid for one year initially and two years on recertification. JTCP certifications for hot mix asphalt and soils and aggregates test methods are valid for three years, and ACI Concrete Field Testing Technician – Grade I certifications are valid for five years. A copy of each tester's current and applicable certifications shall be kept in the project files.

It is the responsibility of the Acceptance Tester to report all test results to the Resident Engineer. Filing and maintaining of the test results and summaries are the responsibility of the Resident Engineer. Test results from consulting engineers shall be given directly to the Resident Engineer.

4. LABORATORY CERTIFICATION

The City of Chico certifies that each laboratory performing acceptance testing meets the following:

- The laboratory is under the responsible management of a California registered engineer with experience in sampling, inspection, and testing of construction materials.
- The engineer certifies the results of all tests performed by laboratory personnel under the engineer's supervision.
- The laboratory is accredited for the test methods performed. Caltrans accreditation is granted test by test and is documented on Form TL-0113,

"Caltrans Accredited Laboratory Inspection Report," which is valid for one year.

- The laboratory testing personnel are certified as described in Section II.3.
- Testing equipment is calibrated as described in Section II.5.
- The laboratory complies with the Independent Assurance Program in Section III.

A current copy of each laboratory's accreditation certificate shall be kept in the project records.

5. LABORATORY EQUIPMENT

A. Consultant - Owned Testing Equipment (City of Chico Construction Projects)

Prior to materials testing on a City of Chico construction project, consultants must provide written certification to the Department of Public Works that qualified personnel properly calibrated each piece of equipment involved with the project. All testing equipment shall be:

- Capable of performing the tests required, and in good working order
- Calibrated at least once every 12 months, and more frequently if required by the test method or the manufacturer's recommendation
- Calibrated by impartial means using standards traceable to the National Institute of Standards and Technology (NIST)
- Marked with a calibration decal firmly affixed to the equipment, showing the equipment identification number, calibration date, calibration expiration or due date, and the name of the calibrator or calibration company

Equipment with expired calibration shall be clearly labeled "Do Not Use" or "Out of Service" and shall not be used for acceptance testing.

B. Proficiency Testing Program

The consultant Materials Testing Laboratory will participate in one or more of the following correlation testing programs: a) AASHTO re:source (formerly the AASHTO Materials Reference Laboratory, AMRL), b) Cement and Concrete Reference Laboratory (CCRL), or c) Caltrans' Reference Samples Program (RSP). Participation in the RSP is required to maintain Caltrans laboratory accreditation for the test methods it covers. The QAPM will verify participation and keep current results on file.

III. INDEPENDENT ASSURANCE PROGRAM (IAP)

1. PURPOSE

The Independent Assurance Program (IAP) verifies that:

- Sampling and testing procedures are being performed correctly
- All acceptance testing performed on the project uses an accredited laboratory and certified testing personnel
- All testing equipment is in good condition and properly calibrated

Independent assurance samples are taken at random for the purpose of making independent checks on the reliability of the acceptance test results.

2. PROCEDURES

IAP duties, including certification of testers and accreditation of laboratories, are executed as follows:

- **Caltrans.** For acceptance testing performed with California Test methods, the City adopts the Caltrans Independent Assurance Program, administered by Caltrans Materials Engineering and Testing Services (METS).
- **Consultant.** For acceptance testing performed only with ASTM or AASHTO test methods, the City will hire a separate laboratory to perform independent assurance, unless Caltrans independent assurance covers those methods for the project. The independent assurance consultant must be different from the acceptance testing consultant.

IAP personnel shall be certified in all required testing procedures, as part of IAP, and shall not be involved in any aspect of Acceptance Testing.

IAP shall be performed on every type of materials test required for the project. Proficiency tests shall be performed on Sieve Analysis, Sand Equivalent, and Cleanness Value tests. All other types of IAP shall be witness tests.

Poor correlation between acceptance tester's results and other test results may indicate probable deficiencies with the acceptance sampling and testing procedures. In cases of unresolved discrepancies, a complete review of acceptance testing shall be performed by IAP personnel, or an independent materials laboratory chosen by the Agency. IAP samples and tests are not to be used for determining compliance with contract requirements. Compliance with contract requirements is determined only by acceptance testing.

IV. TEST METHODS

1. ACCEPTANCE TEST METHODS

Test methods shall be as specified in the contract documents. If not specified, testing shall be performed with California Test (CT) methods. ASTM International and AASHTO test methods may be used where the contract specifies them. California Test methods are required for work on the State Highway System and wherever the contract specifies them.

For a material specified to comply with a property shown in the following table, testing is performed using the noted test method:

Test Property	Test Method
Relative compaction	CT 231 and CT 216
Sand equivalent	CT 217
Resistance (R-value)	CT 301
Grading (sieve analysis)	CT 202
Durability index	CT 229
Cleanness value	CT 227

These methods apply to soils and aggregates. The Caltrans Standard Specifications (2025 edition) specify AASHTO test methods for many hot mix asphalt properties. Appendix C lists the test method for each material.

California Test methods are published by Caltrans Materials Engineering and Testing Services (METS) and are categorized as follows:

100 - 199	“Calibration and Operation”
200 - 299	“Soils and Aggregate”
300 - 399	“Flexible Pavement”
400 - 499	“Chemical”
500 - 599	“Portland Cement and Concrete”
600 - 699	“Structural Materials”
700 - 799	“Environmental”

The consultant shall refer to, follow, and conform to these methods.

2. TESTING FREQUENCY

Sampling and testing locations and frequencies shall be as specified in the contract. If not specified, the frequencies in Appendix C of this document apply.

When sampling products such as Portland Cement Concrete (PCC), cement-treated

base (CTB), hot mix asphalt (HMA), and other such materials, the time of such sampling shall be varied with respect to the time of the day insofar as possible, in order to avoid a predictable sampling routine.

3. REPORTING ACCEPTANCE TESTING RESULTS

The laboratory reports test results to the Resident Engineer as soon as possible by email or telephone. Copies of the complete material test result reports, including data and calculation sheets, shall be provided to the Resident Engineer within the following time periods:

I. When the aggregate is sampled at material plants, test results for Sieve Analysis, Sand Equivalent and Cleanness Value should be submitted to the Resident Engineer within 24 hours after sampling.
II. When materials are sampled at the job site, test results for compaction and maximum density should be submitted to the Resident Engineer within 24 hours after sampling.
III. When soils and aggregates are sampled at the job site:
    a. Test results for Sieve Analysis, Sand Equivalent and Cleanness Value should be submitted to the Resident Engineer within 72 hours after sampling.
    b. Test results for “R” Value and asphalt concrete extraction should be submitted to the Resident Engineer within 96 hours after sampling.

4. ACCEPTANCE TESTING SUMMARY LOGS AND FAILING TESTS

The Resident Engineer maintains a test result summary log for each test method performed more than once on the project, using the Caltrans Acceptance Testing Results Summary Log or an equivalent form. On larger projects, separate logs may be kept for the same test method by feature, such as roadway compaction and structure backfill compaction. Each log shall include:

- Name and ID number of the test method performed
- Date tested and name of tester
- Location and approximate quantity of material represented by the test
- Required passing result and actual test result
- Resolution of any failing results

The Resident Engineer uses the logs to verify that sampling and acceptance tests are performed at the required frequencies, that tester certifications are current and on file, and that all failing tests have been mitigated and documented.

Whenever a test fails, sufficient additional acceptance tests shall be taken to isolate the affected work. The action taken, such as remove and replace, rework and retest, or a deduction or change order, shall be fully documented and noted in the remarks column of the log. Justification shall be kept in the project files for any failing material allowed to remain in place.

V. TESTING MANUFACTURED MATERIALS

1. CERTIFICATE OF COMPLIANCE

Various manufactured materials may be accepted for incorporation into the work without sampling or testing on the basis of a certificate of compliance, where the contract allows, based on the following:

- Visual examination of the material is performed
- The supplier has furnished similar material with a history of having met specifications
- The manufacturer certifies that the materials comply with the contract specifications
- The products, materials, or assemblies do not involve structural integrity or safety to the public

The Resident Engineer is permitted to accept materials prior to sampling and testing if a certificate of compliance accompanies them. Other personnel approved to accept on this basis shall be the Assistant RE and the QAPM. The Certificate of Compliance does not preclude at any time sampling and testing by the Department as the Department may deem necessary.

A certificate of compliance shall conform to the requirements of the contract specifications, including Section 6-2.03C, “Certificates of Compliance,” of the Standard Specifications. Certificates of compliance must:

- Be submitted by the Contractor before the material is incorporated into the work
- Accompany the material to the job site
- Identify the lot (or heat) number for each lot delivered
- Include the contract number
- Include test data and other documents when required by the contract
- State that the material complies with the contract specifications
- Be signed by the producer of the material

Please see Appendix B for a list of materials that are accepted on the basis of a Certificate of Compliance under the Caltrans 2025 Standard Specifications. This list may be amended by the contract special provisions, and the edition of the Standard Specifications named in the contract governs.

2. MATERIALS REQUIRING A BUY AMERICA CERTIFICATION

This section summarizes the Buy America requirements in effect as of the date of this QAP, per LAPM Chapter 12.8 as revised by Division of Local Assistance Office Bulletin 26-04. Buy America requirements are revised periodically through LAPM updates, Office Bulletins, and Local Programs Procedures. Where a later revision, or the Buy America provisions in the project's contract (LAPM Exhibit 12-G or equivalent), differ from this section, the later revision and the contract govern. This section will be updated at the

next QAP revision.

Applicability. Buy America applies to Federal-aid projects with $500,000 or more in federal funding. It also applies to non-federally funded contracts within the scope of a NEPA document that covers a federally funded contract. It applies regardless of the funding source used for the material and regardless of how the material was procured, including agency-furnished materials and materials added by change order. A local agency cannot circumvent the Buy America requirement by declaring that the material is being paid for with the non-federal portion of the funding. The requirements in effect at the project's construction E-76 authorization apply for the life of the contract.

Classification. Each item permanently incorporated into the work is classified by its status when it is brought to the job site:

1. **Iron or steel products:** items consisting wholly or predominantly of iron or steel, meaning the cost of the iron and steel exceeds 50 percent of the total cost of the product's components
2. **Manufactured products:** items processed into a specific form or shape, or combined with other materials to create a product with different properties
3. **Construction materials:** non-ferrous metals, plastic and polymer-based products, glass, fiber optic cable, optical fiber, lumber, engineered wood, and drywall
4. **Excluded materials:** cement and cementitious materials, aggregates such as stone, sand, or gravel, and aggregate binding agents or additives

Iron or steel products. All melting and manufacturing processes, including the application of a coating, must occur in the United States. These processes include rolling, drilling, extruding, coating, machining, welding, bending, smelting, and grinding. Foreign pig iron and processed, pelletized, and reduced iron ore may be used. Each delivery must include the manufacturer's certificate of compliance and certified mill test reports that reference the heat number and state where the iron or steel was melted and manufactured.

Manufactured products. Final assembly must occur in the United States for projects with construction E-76 authorization on or after October 1, 2025. For projects with construction E-76 authorization on or after October 1, 2026, the cost of the components mined, produced, or manufactured in the United States must also be greater than 55 percent of the total cost of all components. Iron or steel used in precast concrete products, and in enclosures for Intelligent Transportation Systems and other electrical hardware, must meet the iron or steel requirements regardless of the amount used. Each delivery must include the manufacturer's certificate of compliance stating where manufacturing occurred and attesting to compliance with 23 CFR 635.410.

Construction materials. All manufacturing processes defined in 2 CFR 184.6 must

occur in the United States. Each delivery must include the manufacturer's certificate of compliance.

Exceptions. Buy America does not apply to tools and construction equipment, temporary work not incorporated into the finished project (such as falsework, sheet piling, or shoring), or excluded materials.

Minimal use and waivers.

- Iron or steel: foreign material may be used if its total delivered cost to the project site, including transportation, does not exceed $2,500 or 0.1 percent of the total contract amount, whichever is greater. The RE must approve the use in writing.
- Manufactured products and construction materials: a de minimis waiver applies when the total value of non-compliant items does not exceed the lesser of $1,000,000 or 5 percent of total applicable project costs. A small-grant waiver applies when total federal financial assistance for the project is under $500,000.
- The RE tracks the cumulative value of non-compliant material as work proceeds, including change orders. Supporting invoices, including the cost of transportation, must be on file in the project records.
- Any other waiver requires FHWA approval, requested through the DLAE, before advertisement or before the material is incorporated into the work.

Non-compliance. After-the-fact discovery of non-compliant material is not a waiver; the RE must notify the DLAE promptly. A local agency's failure to comply with Buy America provisions will result in the loss of federal funding for the applicable contract items, and may result in the loss of all federal funding authorized for the construction phase of the project.

3. SOURCE INSPECTIONS

Some manufactured or prefabricated structural materials will be inspected or tested before arrival at the job site, generally at the manufacturer's location (source inspection). Structural items categorized as "catastrophic consequences of failure" or "significant safety concern" may be source inspected. Materials that might be source inspected include structural steel, precast prestressed concrete girders and piling, reinforced concrete pipe greater than 60 inches, joint seals, bearing pads, lighting and signal poles, sign structures, and electrical items.

Source inspection and testing will be performed by an accredited consultant materials laboratory under contract to the City, or by the City's own qualified staff. The Resident Engineer may reject source inspected material at the job site if deemed not acceptable, including:

- Material damaged in shipment or installation

- Defective material (source inspection is usually a random sampling and may not have checked 100 percent of the material)

4. VISUAL INSPECTION

Relatively minor quantities of construction materials may be accepted without testing when all of the following conditions are met:

1. Visual examination of the material is performed.
2. The manufacturer or supplier has recently furnished similar materials found to be satisfactory using normal sampling and testing requirements.
3. The manufacturer (or supplier in the case of HMA or concrete) provides certification that the material furnished complies with the contract specifications.

Approximate quantities that may be accepted by visual inspection are:

- Aggregates other than for use in Portland Cement Concrete: not to exceed 100 tons per day, nor 500 tons per project
- Bituminous mixtures (example: HMA): not to exceed 50 tons per day. If the project total is less than 500 tons, sample at the Engineer's discretion.
- Bituminous material (example: liquid asphalt): not to exceed 100 gallons per project

Acronyms

Acronym	Meaning
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AMRL	AASHTO Materials Reference Laboratory (now AASHTO re:source)
ASTM	ASTM International (formerly American Society for Testing and Materials)
BABA	Build America, Buy America Act
Caltrans	California Department of Transportation
CCRL	Cement and Concrete Reference Laboratory
CLAM	Caltrans Laboratory Accreditation Manual
COC	Certificate of Compliance
CT, CTM	California Test, California Test Methods
CTB	Cement-Treated Base
Department	City of Chico Department of Public Works
DLAE	District Local Assistance Engineer (Caltrans)
FHWA	Federal Highway Administration
HMA	Hot Mix Asphalt
IA, IAP	Independent Assurance, Independent Assurance Program
JTCP	Joint Training and Certification Program
LAPM	Local Assistance Procedures Manual (Caltrans)
METS	Materials Engineering and Testing Services (Caltrans)
NHS	National Highway System
NICET	National Institute for Certification in Engineering Technologies
NIST	National Institute of Standards and Technology
NRMCA	National Ready Mixed Concrete Association
PCC	Portland Cement Concrete
QA, QAP	Quality Assurance, Quality Assurance Program
QAPM	Quality Assurance Program Manager
QC	Quality Control
RE	Resident Engineer
RSC	Rapid Strength Concrete
RSP	Reference Samples Program (Caltrans)
SHS	State Highway System

Definitions

Appendix

Acronyms and Definitions *A*

Term	Definition
Acceptance Testing	Testing of project materials to determine compliance with the contract specification criteria.
Certificate of Compliance	A signed document from the material manufacturer committing that the delivered goods meet the contract specifications.
Independent Assurance Program (IAP)	A program that verifies that acceptance testing is being performed correctly by certified testers using accredited laboratories and calibrated equipment.
Materials Acceptance Program	Sampling, testing, inspection, and certification of project materials to determine compliance with the contract specifications.
Quality Assurance Program (QAP)	A program that will ensure materials and workmanship incorporated into the project conform to the contract specifications. The main elements of a QAP are the Materials Acceptance Program and the Independent Assurance Program.
Source Inspection	Sampling, testing, and/or inspection of manufactured or prefabricated structural materials at a location other than the job site, generally at the manufacturing location.

Appendix
Materials Accepted by Certificated of Compliance B

The materials below may be accepted on the basis of a certificate of compliance (COC) under the Caltrans 2025 Standard Specifications. The list is adapted from the Caltrans "Materials Requiring a Certificate of Compliance per Caltrans Standard Specifications" (October 2024) and updated for the 2025 edition. Where the contract names a later edition, that edition's certificate of compliance requirements govern. Contract special provisions may add to or amend this list. Section 6-2.03C of the Standard Specifications governs COC content and timing.

Spec Section	Material	Submit
6-1.04 Buy America		
6-1.04B	Crumb rubber	COC
6-1.04C	Steel and iron materials	COC + certified mill test reports
Contract (Exhibit 12-G)	Manufactured products and construction materials subject to Buy America	Manufacturer's COC with each delivery; see Section V.2
6-1.07B	Telecommunications and video surveillance equipment	COC
11 Welding		
11-2.03D	Welding	COC
12-3 Temporary Traffic Control Devices		
12-3.03A(3)	Plastic traffic drums	COC
12-3.20A(3)	Temporary barrier system	COC
12-3.23A(3)	Impact attenuator	COC
12-3.32A(3)	Portable changeable message sign	COC, if requested
12-3.33A(3)	Portable signal system	COC
13 Water Pollution Control		
13-9.01C	Fabric bags for gravel-filled bags; plastic liner	COC
13-10.01C	Fiber rolls; silt fence fabrics; sediment filter bags; foam barriers; fabric for gravel-filled bags; compost socks	COC
16 Temporary Facilities		
16-2.03A(3)	High-visibility fabric	COC
18 Dust Palliatives		
18-1.01C	Dust suppressant; dust control binders; fibers	COC + test results for dust suppressant
19 Earthwork		
19-12.01C(2)	EPS geofoam blocks	COC sealed by an independent third-party laboratory engineer (California registered civil engineer), with ASTM D6817 QC certification and ASTM D7557 test reports
20 Landscape		
20-2.08A(3)	Polyethylene pipe; plastic pipe supply line	COC
20-3.01A(3)(c)	Sod; soil amendment; plant tubes	COC
20-5.03A(1)(c)	Filter fabric	COC + product data
20-5.03D(1)(c)	Solidifying emulsion	COC + product data and samples
20-5.04A(3)	Wood mulch	COC + sample and authorization
21 Erosion Control		
21-2.01C(1)	Straw; weed-free straw; fiber; RECP; fasteners	COC (weed-free straw: + certificate of quarantine)
21-2.01C(4)	Tackifier; bonded fiber matrix	COC + SDS + reports
24 Stabilized Soils		
24-1.01C(1)	Stabilizing agent	COC + sample

Appendix
Materials Accepted by Certificated of Compliance *B*

Spec Section	Material	Submit
24-3.01C	Cement	COC under 90-1.01C(3) + sample
30 Recycled Pavement		
30-4.01C(2)(b)	Cement (full depth recycling)	COC
30-5.01C(3), 30-5.01C(6)	Recycling agent; cement; other additives; asphaltic emulsion (partial depth recycling)	COC with each delivery + SDS + manufacturer's test results
30-6.01C(3), 30-6.01C(6)	Recycling agent; cement; asphaltic emulsion (cold central plant recycling)	COC with each delivery + manufacturer's test results within 30 days of delivery
36 and 37 Bond Breaker and Seal Coats		
36-2.01C	Base bond breaker	COC for each shipment
37-1.01C	Asphalt binder; asphaltic emulsion	COC + test results
37-2.04A(3)	Asphalt rubber binder ingredients	COC + test results
37-3.01A(3)	Asphaltic emulsion; polymer modified asphaltic emulsion; micro-surfacing emulsion	COC + samples and test results
37-5.01C	Parking area seal material	COC + sample and test results
37-6.01C	Crack treatment materials	COC or sample and test results
39 Asphalt Concrete		
39-2.01A(3)(f)	Liquid antistrip	COC for each shipment + sample and production data
39-2.03A(3)(c), 39-2.03B(3)(c)	Crumb rubber modifier; asphalt modifier	COC + test results with each truckload
39-2.05A(1)(c)	Asphaltic emulsion	COC + test results + sample
40 and 41 Concrete Pavement		
40-1.01C(2)	Tie bars; splice couplers; dowel bars; tie bar and dowel bar baskets; joint filler; epoxy-powder coating	COC
41-1.01C	Fast-setting concrete; polyester resin binder; bonding agent	COC + SDS and instructions
41-5.01C	Liquid joint sealant; backer rods; compression joint seal; lubricant adhesives	COC + SDS and instructions
41-9.01C(2)	Joint filler; dowel bars; dowel bar baskets; epoxy-powder coating (individual slab replacement with RSC)	COC at least 15 days before delivery
41-10.01C	Tie bars; dowel bars; dowel bar lubricant; chemical adhesive; epoxy powder coating	COC
47 to 49 Earth Retaining Systems, Falsework, and Piling		
47-6.01C(3)	Alternative earth retaining system	COC
48-2.01C(1)	Structural composite lumber; timber (falsework)	COC + submittals
48-4.01C	Temporary decking materials	COC
49-2.02A(3)(d)	Steel pipe piles	COC + test and mill reports
49-2.03A(3)	Structural shape steel piling	COC + certified material test report
51 Concrete Structures		
51-1.01C(3)	Bonding materials	COC or sample and authorization
51-1.01C(5)	Chemical adhesive (drill and bond dowels)	COC + SDS + instructions
51-2.01A(3)	Acetal copolymer material for snowplow deflectors	COC
51-2.02B(1)(c)	Joint seals, backer rods, and primer	COC + SDS + instructions
51-2.02C(1)(c)	Elastomeric joint seal; lubricant-adhesive	COC + certified test reports
51-2.02D(1)(c)(i)	Alternative joint seal materials	COC + authorization
51-2.02E(1)(c)(iii)	Joint seal assembly materials	COC for each shipment
51-2.02F(1)(c)(iv)	Joint seal materials	COC + test reports
51-2.04A(3)	Waterstop material	COC + statement
51-3.02A(3)(c)(ii)	Plain elastomeric bearing pads	COC + certified test results
51-3.02A(3)(c)(iii)	Steel-reinforced elastomeric bearing pads	COC + certified test results
51-3.03A(3)(a)	Materials used in PTFE bearings	COC + test reports

Spec Section	Material	Submit
51-4.01C(1)	Precast concrete box culvert	COC for each shipment
52 Reinforcement		
52-1.01C(3)	Reinforcement	COC for each shipment + certified mill test reports
52-2.02A(3)(c), 52-2.03A(3)(c)	Epoxy-coated reinforcement; patching material	COC + submittals
52-5.01C(4)	Headed bar reinforcement	COC + mill test reports and test samples
52-6.01C(5)	Service or ultimate butt splice material	COC + submittals and samples
54 to 60 Waterproofing, Steel and Wood Structures, Masonry, Coatings, and Overlays		
54-3.01C, 54-5.01C	Preformed membrane sheet	COC
55-1.01C(1)	Steel materials	COC + test reports
57-2.01A(3)	Timber and lumber; glued laminated timbers and decking	COC + grading report
57-3.01C(1)	Plastic lumber	COC + laboratory test report and sample
58-2.01C(7)	CMUs; aggregate for grout; grout	COC
59-1.01C	Blast cleaning material	COC + SDS for each shipment
59-5.01C(1)	Wire feedstock	COC for each shipment
60-3.04B(1)(c)	Methacrylate resins; polyester resins; aggregates	COC + samples and test results
60-3.05B(1)(c)	Filler material and bonding agents	COC
61 to 72 Drainage		
61-2.01C	Culvert and drainage pipe joint systems and couplers	COC + test results and reports
62-1.01C, 62-3.01C	Permeable material (stormwater treatment)	COC for gradation
64-1.01C	Plastic pipe	COC + pipe stiffness, resin cell classification, date of manufacture
64-2.01C	Corrugated polyethylene pipe	COC from the AASHTO Product Evaluation and Audit Solutions program (current audit cycle) + manufacturer's final certification
65-2.01C	Reinforced concrete pipe	COC for each pipe shipment
66-1.01C	Corrugated steel and corrugated aluminum materials	COC
67-2.01C	Structural metal plate pipe, arches, and pipe arches	COC + assembly instructions
67-3.01C	Metal liner plate pipe	COC + instructions
68-1.01C	Subsurface drain	COC
68-2.01C	Underdrain pipe, tubing, and fittings	COC
68-7.01C	Geocomposite drain	COC + flow capability
68-8.01C(1)	Prefabricated vertical drain	COC + test samples
69-1.01C	Overside drains: steel, aluminum	COC
70-6.01C	Grated line drains	COC + report
71-3.09A(1)(c)	PVC strip for machine spiral wound PVC pipeliners	COC for each reel
72-16.01C	Gabion baskets; PVC coating	COC for each shipment
74 and 75 Pumping Equipment and Bridge Metal		
74-2.01C(3)	Impeller balancing and drainage pump tests	COC + report
75-3.01C(1)	Anchorage devices	COC
75-3.01C(2)	Fiberglass pipe and fittings (bridge deck drainage)	COC + laboratory test results
80 to 84 Fences, Traffic Control Devices, Signs, Barriers, and Markings		
80-3.01C	Protective coating system; posts and braces	COC
81-2.01C	Delineator metal target plates; enamel coating	COC
81-3.01C	Pavement markers	COC
82-2.01C(2)	Sign panels; aluminum sheeting; conversion coating; retroreflective sheeting; color imaging methods and film; protective-overlay film	COC for each shipment
82-5.01C	Marker metal target plates; enamel coating	COC

Spec Section	Material	Submit
83-2.08A(3)	Tubular railing components	COC + shop drawings
83-3.01C	Type 60K portable concrete barrier (not cast on the job site)	COC or test reports
84-2.01C	Traffic stripe material; primer; glass beads; thermoplastic	COC + SDS and test results
86 and 87 Electrical		
86-1.01C(6)	Signal heads	COC + QC test data
86-1.01C(8)	Visors	COC + QC test data
87-2.01C	High mast lighting luminaires	COC + test data
90 Concrete		
90-1.01C(3)	Cementitious materials; blended cement	COC (blended cement: + SCM content)
90-1.01C(4)	Admixtures	COC + authorization
90-1.01C(5)	Curing compound	COC + test samples
90-1.01C(12)	Cast-in-place structural concrete material	COC signed by QC manager
90-1.01C(13)	Polymer fibers	COC for each shipment
90-2.01C	Minor concrete	COC (new source) + weighmaster certificate
90-3.01C(3)	Rapid strength concrete aggregate, cementitious material, and admixtures	COC + weighmaster certificate
90-4.01C(2)	Precast concrete cementitious material; each precast member	COC signed by manufacturer or QC manager
94 to 96 Asphaltic Emulsions, Epoxy, and Geosynthetics		
94-1.01C	Asphaltic emulsion	COC for each shipment + reports
95-1.01C	Epoxy	COC
96-1.01C(1)	Geosynthetics, including geomembrane and EPS geofoam	COC + test samples

City of Chico Sampling and Testing Frequency Table

For projects off the State Highway System. Test methods are those of the Caltrans 2025 Standard Specifications. Where the contract specifies another edition or other test methods, the contract governs.

Quality Characteristic	Test Method	Minimum Sampling and Testing Frequency	Location/Time of Sampling
HOT MIX ASPHALT (HMA)			
Aggregate gradation	AASHTO T 30	1 per 1,000 tons or part thereof; minimum 1 per day during production/placement of at least 300 tons per day	At plant per CT 125 (a)
Sand equivalent	AASHTO T 176	1 per 1,000 tons or part thereof; minimum 1 per day during production/placement of at least 300 tons per day	At plant per CT 125 (a)
Asphalt binder content	AASHTO T 308 (Modified), Method A	1 per 1,000 tons or part thereof; minimum 1 per day during production/placement of at least 300 tons per day	Loose mix behind paver per CT 125
In-place density and relative compaction (nuclear)	CT 375 (b)(c)	1 per 1,000 tons or part thereof; minimum 1 per day during production/placement of at least 300 tons per day (b)	Random locations per CT 375
Theoretical maximum specific gravity and density (Rice)	AASHTO T 209, Method A (d)	1 per day during production/placement of at least 300 tons per day	Loose mix behind paver per CT 125
HMA moisture content	AASHTO T 329	1 per day during production/placement of at least 300 tons per day	Loose mix behind paver per CT 125
Hamburg wheel track	CT 389	Production start-up and 1 per day during production/placement of at least 1,000 tons per day	At plant per CT 125 (a), or loose mix behind paver per CT 125
Gyratory compaction	AASHTO T 312	Production start-up and 1 per day during production/placement of at least 1,000 tons per day	At plant per CT 125 (a), or loose mix behind paver per CT 125
Asphalt binder	Sample per Section 92	1 minimum per day for production over 300 tons per day; see (e) regarding testing	At plant per CT 125
Smoothness	12-foot straightedge	As necessary to confirm contract compliance	Final pavement surface
SUBGRADE (DISTURBED BASEMENT SOIL) OR EMBANKMENT			
Maximum density and relative compaction	CT 216/CT 231 (f); ASTM D1557 and D6938 (g)	1 minimum test per 5,000 sq ft under vehicle traveled way and shoulder; 1 minimum test per 300 linear feet under sidewalk	Random locations as determined by the Engineer, in place after compaction
AGGREGATE BASES AND SUBBASES, IMPORTED BORROW			
Sieve analysis	CT 202; AASHTO T 27/T 11 or ASTM C136/C117 (g)	1 minimum test per material source	Sample from site stockpile/plant prior to placement
R-value	CT 301 (h); AASHTO T 190 or ASTM D2844 (g)	1 minimum test per material source	Sample from site stockpile/plant prior to placement
Sand equivalent	CT 217; AASHTO T 176 or ASTM D2419 (g)	1 minimum test per material source	Sample from site stockpile/plant prior to placement
Maximum density and relative compaction	CT 216/CT 231 (f); ASTM D1557 and D6938 (g)	1 minimum test per 5,000 sq ft	Random locations as determined by the Engineer, in place after compaction
STRUCTURE BACKFILL, SELECT BACKFILL			
Sieve analysis	CT 202; AASHTO T 27/T 11 or ASTM C136/C117 (g)	1 minimum test per material source	Sample from site stockpile/plant prior to placement
R-value	CT 301 (h); AASHTO T 190 or ASTM D2844 (g)	1 minimum test per material source	Sample from site stockpile/plant prior to placement

Appendix C
Sampling and Testing Frequency Table

Quality Characteristic	Test Method	Minimum Sampling and Testing Frequency	Location/Time of Sampling
Sand equivalent	CT 217; AASHTO T 176 or ASTM D2419 (g)	1 minimum test per material source	Sample from site stockpile/plant prior to placement
Maximum density and relative compaction	CT 216/CT 231 (f); ASTM D1557 and D6938 (g)	1 minimum test per 2 vertical lifts of placement	Random locations as determined by the Engineer, in place after compaction
UTILITY TRENCH BACKFILL (SUBDIVISION AND ENCROACHMENT PERMIT WORK)			
Maximum density and relative compaction	CT 216/CT 231 (f); ASTM D1557 and D6938 (g)	1 test per 2 vertical ft per 300 LF (min. 1 per trench per day); every 5th lateral and all laterals under the traveled way; 1 per 300 LF at top of base in the traveled way.	Random locations as determined by the Engineer, in place after compaction
PORTLAND CEMENT CONCRETE (PCC) – STRUCTURAL AND SIGNAL/LIGHTING FOUNDATIONS: COARSE AGGREGATE			
Sieve analysis	CT 202; AASHTO T 27/T 11 or ASTM C136/C117 (g)	1 minimum test per 500 cu yd and per each material source; 1 minimum test on smaller projects; if bridge, 1 minimum set per separate pour per abutment/pier/deck	Sample from site stockpile/plant prior to placement
Cleanness value	CT 227	Same as sieve analysis	Sample from site stockpile/plant prior to placement
PCC: FINE AGGREGATE			
Sieve analysis	CT 202; AASHTO T 27/T 11 or ASTM C136/C117 (g)	1 minimum test per 500 cu yd and per each material source; 1 minimum test on smaller projects; if bridge, 1 minimum set per separate pour per abutment/pier/deck	Sample from site stockpile/plant prior to placement
Sand equivalent	CT 217; AASHTO T 176 or ASTM D2419 (g)	Same as sieve analysis	Sample from site stockpile/plant prior to placement
PCC: WET MIX			
Slump/penetration	CT 533 or ASTM C143	1 per 150 cu yd or per day	Sample from truck/work site
Unit weight and air content	CT 518 and CT 504; ASTM C138 and C231 (g)	1 per 150 cu yd or per day	Sample from truck/work site
Cylinders	CT 539, CT 540 and CT 521; ASTM C172, C31 and C39 (g)	1 minimum set of 5 (4x8) per day per every 150 cu yd; if bridge, 1 minimum set per separate pour of abutment/pier/deck	Sample from truck/work site
MINOR CONCRETE (CURB, GUTTER, SIDEWALK, DRIVEWAYS)			
Slump/penetration	CT 533 or ASTM C143	Every time cylinders are made	Sample from truck/work site
Cylinders	CT 539, CT 540 and CT 521; ASTM C172, C31 and C39 (g)	Sample and test if concrete quality is questionable; 1 minimum set per project	Sample from truck/work site

(a) Exact tonnage of sample location to be determined by random sampling plans.

(b) Compaction determined by nuclear density device. Core testing required if compaction fails the nuclear test.

(c) Correlation between core densities and nuclear device required only if compaction fails the nuclear test.

(d) Use AASHTO T 209, Method A to determine theoretical maximum density in lieu of a calculated test maximum density.

(e) No testing required unless warranted by concern; sample and store until completion of project.

(f) Relative compaction under ASTM D1557 is not equivalent to CT 216. Where ASTM D1557 is used, the contract must state the required percent compaction.

(g) The first method listed is the one required by the Caltrans 2025 Standard Specifications. The ASTM or AASHTO alternates that follow may be used only where the contract specifies them, and not for work on the State Highway System (see Section IV.1).

(h) R-value under AASHTO T 190 or ASTM D2844 is not equivalent to CT 301. Where either is used, the contract must state the required R-value.

Note: Test methods and/or testing frequencies may be adjusted based on specific project requirements.

Final Materials Certification *D*

Upon completion of construction of a state or federally funded project, the Resident Engineer completes LAPM 16-E, “Final Materials Certification,” and submits a copy to the Caltrans District Local Assistance Engineer (DLAE). LAPM 16-E replaces the Materials Certificate formerly provided as LAPM Exhibit 17-G, and it is no longer submitted as part of the Final Report of Expenditures (Division of Local Assistance Office Bulletin 25-05). The current form is available on the Caltrans Local Assistance Procedures Manual Forms page.

All materials incorporated into the work which do not conform to the project specifications must be explained and justified on LAPM 16-E, including materials accepted by contract change order. Exceptions may be summarized in a table such as the following and attached to the certification. The signed certification and any attachment are kept in the project records.

Type of Test	Description of Work	Total Tests Performed	Number of Failed Tests	Action Taken
Compaction (example)	Subgrade material	12	1	Failed area was watered and reworked. The retest was acceptable.