

# Caltrans EPD Efforts

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# AGENDA

WHAT ARE EPDS?

SPECIFICATION REQUIREMENTS

ROLES AND RESPONSIBILITIES

DATA COLLECTION

SUSTAINABILITY GOALS

FHWA CLIMATE CHALLENGE



# Environmental Product Declarations



## Nutrition Facts

Impact Category	Units	Total (A1-A3)
Global Warming Potential <sup>a</sup>	ton CO <sub>2</sub> eq/ ton <sup>d</sup>	1.0 (100%)
Ozone Depletion Potential <sup>a</sup>	ton CFC-11 eq/ ton <sup>d</sup>	9.6x10 <sup>-8</sup> (100%)
Acidification Potential <sup>a</sup>	ton SO <sub>2</sub> eq/ ton <sup>d</sup>	4.2x10 <sup>-3</sup> (100%)
Eutrophication Potential <sup>a</sup>	ton N eq/ ton <sup>d</sup>	4.9x10 <sup>-3</sup> (100%)
Photochemical Ozone Creation Potential <sup>a</sup>	ton O <sub>3</sub> eq/ ton <sup>d</sup>	7.6x10 <sup>-2</sup> (100%)
Depletion of Abiotic Resources <sup>b,c</sup> (Elements)*	ton Sb eq/ ton <sup>d</sup>	-1.6x10 <sup>-5</sup> (100%)
Depletion of Abiotic Resources (Fossil) <sup>b</sup>	BTU/short ton (MJ/metric ton) <sup>e</sup>	1.0 x10 <sup>7</sup> (1.2x10 <sup>4</sup> ) (100%)

...serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

# Environmental Product Declarations



(Public Contract Code § 3500 et seq.)

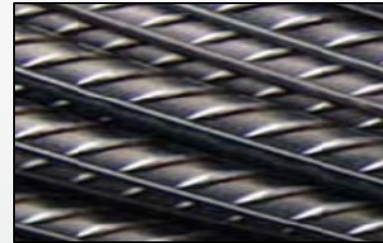
AB 262 approved October 2017; Amended by AB 137 approved July 2021



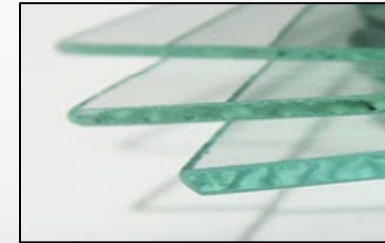
**Structural Steel**



**Carbon Steel Rebar**



**Flat Glass**



**Mineral Wool Board Insulation**



Phase	Timeline (as of Bid Opening)	Requirement
Phase I	Prior to Dec 1, 2019	Request existing EPDs
Phase II	Dec 1, 2019 – May 31, 2021	Require EPDs
BCCA Legislative Report	Jan 1, 2022	DGS establishes GWP limits
Phase III	Added to Standard Specifications 2023 (Section 6-1.06)	Require EPDs with materials within GWP limits prior to installation

**Current Phase**



# Caltrans Specification Requirements

Implementation Thresholds are defined in  
**Standard Specifications 2023 Section 6-1.06**



Item	Implementation Threshold
Total bid	Over \$1 million
Original working days	175 or more
Carbon Steel Rebar (excludes epoxy coated and galvanized rebar)	20,000 lbs. or more
Structural steel	5,000 lbs. or more
Flat glass	2,000 ft <sup>2</sup> or more
Mineral wool board insulation	4,000 ft <sup>2</sup> or more

# Caltrans Specification Requirements

Implementation Thresholds are defined in  
**Standard Specifications 2023 Section 6-1.06**



- EPD Requirements:
  - Facility-specific
  - Independently verified
  - Product Category Rule (PCR)
  - Meet GWP limits
- Rebar
  - Authorized Materials List
  - Verified when material arrives at job site
- Structural Steel
  - Authorized Materials List
  - Verified during orange tag/release
- Quantity Submittals: within 5 business days of material arrival





# Roles and Responsibilities (Contractor)

- Submit accurate and complete CEM-3101
- Ensure carbon steel rebar is on the Authorized Materials List
- For structural steel, flat glass, and mineral wool board insulation:
  - Ensure EPD is product and mill specific
  - Within maximum acceptable Global Warming Potential limits
  - Submit EPD at least 15 days prior to installation
- Submit quantity data on **DIME** within 5 business days of shipment receipt at the project site



STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION  
**NOTICE OF MATERIALS TO BE USED**  
 CEM-3101 (REV 09/2019)

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Resident Engineer Janelle Clanton Date 09/29/2022

Materials required for use under contract number (1) 430434

District 11 County San Diego Route 8 Post Mile 12.9/14.6, 14.9

will be obtained from the following sources:

Contract Bid Item Number (2)	Item Code (3)	Contract Item Description (4)	Item Component (5)	Item Component Quantity (6)	Manufacturer/Provider Name and Address (7)	Manufacturer/Provider Email Address (7)
85	510087	STRUCTURAL CONC. APPR. SLAB (TYPE R)	REBAR	1,267 LBS	Cascade Steel Rolling Mills, Inc. 3200 NE Highway 99W McMinnville OR 97128	mgarcia@integrityrebarfabricators.com adalberto@integrityrebarfabricators.com
90	520102	BAR REINFORCING STEEL (BRIDGE)	REBAR	143,977 LBS	Cascade Steel Rolling Mills, Inc. 3200 NE Highway 99W McMinnville OR 97128	mgarcia@integrityrebarfabricators.com adalberto@integrityrebarfabricators.com
122	839746	CONCRETE BARRIER (TYPE 842)	REBAR	768 LBS	Cascade Steel Rolling Mills, Inc. 3200 NE Highway 99W McMinnville OR 97128	mgarcia@integrityrebarfabricators.com adalberto@integrityrebarfabricators.com

# Roles and Responsibilities

(Resident Engineer/Structures Rep.)

- Discussing BCCA requirements at the preconstruction meeting
- Verify the CEM-3101s provided are accurate and complete
- Confirm structural steel and rebar manufacturers are on the Caltrans Authorized Material List (AML)
- Verify the material quantity is submitted on DIME within five days of arrival at the jobsite





# Data Collection

(DIME)



# Data Collection

## (Data Interchange for Materials Engineering)

- Database for Material Information and Test Data
- Submitting QC data



Site | Onramp x DIME - Dashboard x +  
dime.dot.ca.gov/index.php?r=general/index

**DIME** Search Reports & Summaries Help & Forms Kieran Fung

Dashboard New Sample Submit Results View Unpublished Tests Batch Numbers Submit EPD Calendar Sample Quick Search

DIME » Dashboard

**Welcome to DIME** Tuesday, 9/20/2022  
Data Interchange for Materials Engineering

**Quick Links**

- [My DIME Profile](#)
- [New Sample](#)
- [Search for Tests and Samples](#)

**My DIME Account**

You are currently signed in as a **Data Editor** for **CT HQ - QASI Los Angeles Field Laboratory**  
[View your organization information](#) | [View your DIME Profile](#)

Tests scheduled for today (Tuesday, 9/20/2022): 0  
Tests scheduled for tomorrow (Wednesday, 9/21/2022): 0

**Project Lookup**

Project identifiers

Project Quick Access  Go

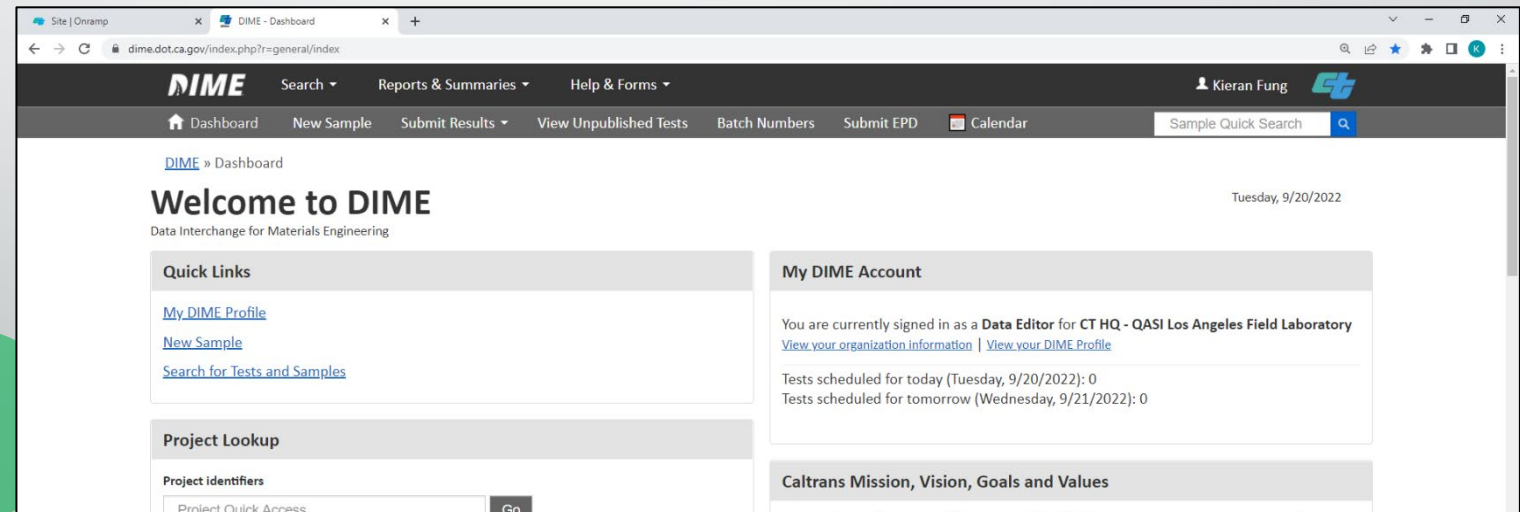
Caltrans Mission, Vision, Goals and Values



# Data Collection

## (Data Interchange for Materials Engineering)


- Database for Material Information and Test Data
- Submitting QC and EPD data
  - Stores approved EPDs
  - Quantity of EPD material used on eligible projects
- Provides data for Department of General Services (DGS) legislative report





# Data Collection

## (Data Interchange for Materials Engineering)



**DIME** Search ▾ Reports & Summaries ▾ Help & Forms ▾ Varun Shyam   
CT HQ - Sacramento Statewide Materials Support Branch Field Office































Dashboard New Sample Submit Results ▾ Publish Tests Manager ▾ Batch Numbers Submit EPD  Calendar  

[DIME](#) » EPD Administration

### EPD Administration

[Add a New Entry](#) | [EPD Submission Report](#)

Displaying 1-10 of 54

Eligible Material	EPD Declaration Number	EPD Issue Date	EPD Expiration Date	Vendor	Active	Actions
Carbon Steel Rebar	SCS-EPD-04335	1/19/2017	5/5/2020	Cascade Steel Rolling Mills, Incorporated	No	 Edit  Status  Duplicate
Carbon Steel Rebar	EPD-191	2/25/2021	2/25/2026	CMC - Mesa	Yes	 Edit  Status  Duplicate
Carbon Steel Rebar	SCS-EPD-07289	8/30/2021	8/29/2026	Gerdau - Midlothian	Yes	 Edit  Status  Duplicate
Carbon Steel Rebar	4787940707.101.1	6/2/2017	5/5/2021	Nucor Steel, Incorporated - Seattle	No	 Edit  Status  Duplicate
Carbon Steel Rebar	SCS-EPD-07287	8/30/2021	8/29/2026	Gerdau - Charlotte	Yes	 Edit  Status  Duplicate
Carbon Steel Rebar	SCS-EPD-07288	8/30/2021	8/29/2026	Gerdau - Jackson	Yes	 Edit  Status  Duplicate
Carbon Steel Rebar	SCS-EPD-06643	1/7/2021	1/6/2026	EVRAZ North America	Yes	 Edit  Status  Duplicate
Carbon Steel Rebar	4789793365.101.1	1/1/2021	1/1/2026	Nucor Steel, Incorporated - Auburn	No	 Edit  Status  Duplicate
Carbon Steel Rebar	4790066131.101.1	1/1/2022	1/1/2027	Cascade Steel Rolling Mills, Incorporated	Yes	 Edit  Status  Duplicate
Carbon Steel Rebar	TEST323	6/7/2022	10/3/2023	Crop Production Services	No	 Edit  Status  Duplicate

Go to page:



# Sustainable Project Delivery Goals

## Mandated Materials (Buy Clean CA Act)

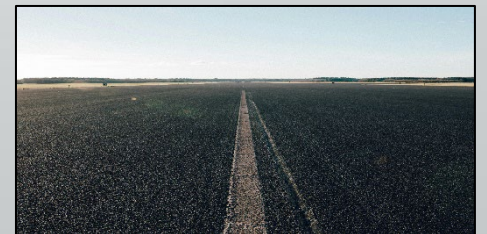
*Structural Steel, Carbon Steel Rebar, Flat Glass & Mineral Wool Board Insulation*

- Working to improve EPD collection process (API)
- Formalize structural steel AML in specifications
- Support DGS in legislative report

## Non-Mandated Materials (Self-Piloted)

*Concrete & Asphalt*

- Develop draft specification language to incentivize GHG reduction
- Encourage use of facility-specific raw material data
- Support small businesses
- Incorporate concrete & asphalt EPD requirements in specifications by Winter 2024
- Participate in FHWA Climate Challenge



# FHWA Climate Challenge

- **FHWA Goal:** Quantify greenhouse gas emissions from materials and practices for the design, construction, and maintenance of pavements.



**NOW**

**Funding:** \$312,000, Obligated  
**Inclusiveness:** Outreach  
**Collaboration:** CalAPA and CalCIMA  
**Requirements:** Established  
**Status:** Execution Phase  
**Launch:** December 1, 2023



**FUTURE**

**External Communication:**

Letters to Vendors  
Industry meetings/conferences  
One-on-one meetings with fabricators  
One-page flyer(s)

**Project Scope:** Provide concrete and asphalt plants access to financial incentives for the preparation of EPDs.





# FHWA Climate Challenge

(Current Status)

## Concrete

No. of vendors signed up : 7

No. of plants : 19

No. of EPDs received : 3(1 vendor)

Payments awarded : 1 vendor

## Asphalt

No. of vendors signed up : 2

No. of plants : 6

No. of EPDs received : 3(1 vendor)

Payments awarded : 0

Total payment awarded : \$4,500

Program expires : January 2026



# Implementation Challenges & Next Steps

## Challenges

- Time to develop EPDs especially when new PCRs are published
- Current EPD cost \$3,000-\$6,000+. Our program offers partial reimbursements of \$1,500/EPD
- Facilities are not willing to participate since its not a specification requirement
- Delays in payment reimbursement

## What's next?

- Continue to receive EPDs and process payments
- Continue to outreach to industry partners
- Implementation of Asphalt & concrete EPD requirements





# Draft Specification Language



Add to section 6-1:

## 6-1.08 ENVIRONMENTAL PRODUCT DECLARATIONS FOR HOT MIX ASPHALT AND CONCRETE

Section 6-1.08 includes specifications for environmental product declarations for hot mix asphalt and concrete materials and products.

See section 6-1.06B for definitions.

For projects with bid opening dates after February 1, 2025, with a total bid over \$1 million and 175 or more original working days, materials or products specified in the following table require facility-specific, product stage, environmental product declarations as informational submittals:

Material or product	Material specifications
Hot mix asphalt <sup>a</sup>	Section 39-2, "Hot Mix Asphalt" Excludes RHMA, OGFC, and BWC materials.
Concrete <sup>b</sup>	Sections 28-2, "Lean Concrete Bases," 28-3, "Rapid Strength Concrete Base," 28-4, "Lean Concrete Base Rapid Setting," 28-5 "Concrete Base," 40, "Concrete Pavement," 47-5, "Type 6 Retaining Walls," 49-3, "Cast-In-Place Concrete Piling," 49-4, "Steel Soldier Piling," 51, "Concrete Structures," 58-2, "Masonry Block," 73, Concrete Curbs and Sidewalks," 83, "Railings and Barriers," _____, and 99, "Building Construction" Excludes volumetric-proportioned rapid strength concrete and section 90-4 PC concrete members.

<sup>a</sup>For each hot mix asphalt plant providing 1,000 tons or more on the project by job mix formula.

<sup>b</sup>For each concrete plant providing 250 cubic yards or more on the project by mix design.

Seasonal plants, operating less than 6 months a year are exempt from section 6-1.08 requirements.



# QUESTIONS?

Email:

[EPD@dot.ca.gov](mailto:EPD@dot.ca.gov)

Visit the Caltrans EPD website:

<https://dot.ca.gov/programs/engineering-services/environmental-product-declarations>