



CALIFORNIA DEPARTMENT OF  
FOOD & AGRICULTURE

# Division of Measurement Standards Electric Vehicle Charging Station Standards and Certification

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SERVING AND PROTECTING CALIFORNIA'S CONSUMERS,  
BUSINESSES, ECONOMY AND ENVIRONMENT



# CA Weights and Measures Requirements

The expansion of electricity as a zero-emission transportation fuel in California requires the development of a reliable network of publicly accessible commercial charging stations capable of safe and accurate fueling of EVs.

Prior to installation and use, all commercial weighing and measuring devices must be type approved to assure that the device is accurate; repeatable; designed to operate in the conditions it will be exposed to; cannot be used to defraud customers, and a fair and accurate accounting of all measurements and charges is communicated to the customer.

# CA Weights and Measures Requirements

For type evaluation to occur, there must be enforceable standards in the form of tolerances and specifications for the device in question.

California adopts by reference the latest edition of the National Institute of Standards and Technology (NIST) Handbook 44, *Specifications, Tolerances and Other Technical Requirements for Weighing and Measuring Devices*.

- Law: California Business and Professions Code, Division 5

<http://leginfo.legislature.ca.gov/faces/codes.xhtml>

- Regulations: California Code of Regulations, Title 4, Division 9

<http://www.oal.ca.gov/ccr.htm>

# CA Weights and Measures Requirements

The Department Secretary has the authority to amend, modify, or reject portions of NIST HB 44 to make our regulations more specific to the California marketplace.

Pursuant to this authority, the Department promulgated regulations via rulemaking in 2019 to adopt NIST Handbook 44 Section 3.40 Electric Vehicle Fueling Systems for commercial EVSE.

The Department incorporated some minor edits and amendments to HB 44 Section 3.40 to align the adopted requirements with the current status of EVSE technology and infrastructure in California.

# National Institute of Standards and Technology

## Handbook 44

- Specifications, Tolerances and Other Technical Requirements for Commercial Devices
- Used by CDFA DMS for Type Evaluation of new makes/models of devices, e.g., EVSE
- Used by counties as a field enforcement manual
- Used by manufacturers when designing new commercial weighing and measuring devices



# CA Weights and Measures Requirements

- Who Oversees? The State and 55 County Offices of Weights and Measures covering all 58 counties
  - State: Maintains standards (mass, length, volume, electric current, etc.), evaluates new types of measuring devices, trains and monitors work performed by counties
  - Counties: Local departments of weights and measures perform the majority of all field inspections and enforce device compliance requirements
  - State and County Officials conduct routine field testing and complaint monitoring to ensure continued compliance with established laws and regulations for all commercial weighing and measuring devices.

# Commercial EVSE Device Requirements

- Type Evaluation performed by a laboratory authorized by the NCWM's National Type Evaluation Program (NTEP) and issuance of a certificate of conformance for device or measuring system. (Provisional Cert for EVSE)
- Alternatively, receipt of a Certificate of Approval through the California Type Evaluation Program (CTEP). (California Specific)
- EVSE system must conform to NIST Handbook 44 Section 3.40 requirements as adopted. This includes but is not limited to: Accuracy; Repeatability; Suitability; Indications; Recorded Representations; and Sealing Provisions.

# Commercial EVSE Device Requirements

- Type evaluation is conducted by testing the *measuring system as whole*, not just the metering element.
- 1.0% Acceptance Tolerance is applied during type evaluation and during initial verification of newly installed AC power EVSE. (2.5% proposed for DC fast chargers)
- 2.0% Maintenance Tolerance is applied during periodic re-inspection of installed commercial AC power EVSE. (5.0% proposed for DC fast chargers)
- Communication protocols, data transmission, and power delivery upstream of the EVSE is not a consideration for type evaluation.
- EVSE must accurately deliver within adopted tolerances the quantity of energy displayed and charged to the customer.

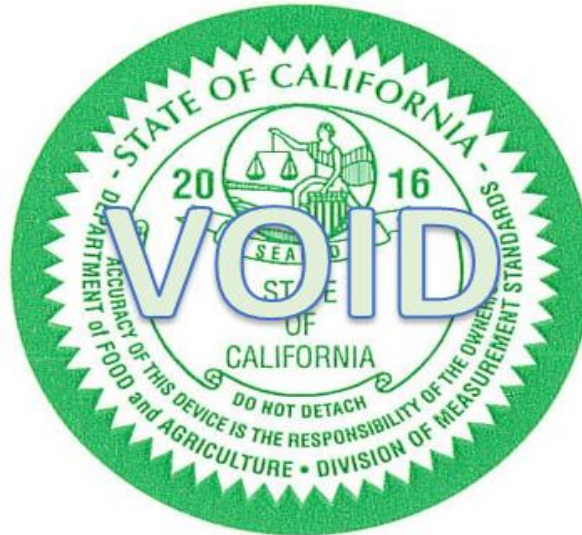


# Next Steps:

- Continue training county weights and measures officials on testing and evaluating installed commercial EVSE.
- Support county jurisdictions with insufficient testing equipment resources by coordinating state equipment and resources (as available) to facilitate testing and sealing of commercial EVSE
- Build and maintain a database of installed and type approved commercial EVSE in the state.
- Maintain engagement with NIST, NCWM, NEMA, and ISO to monitor developments in electrical power measurements and EVSE testing

# ULTIMATE GOAL

Successful Commercialization of EVSE



# Thank You!

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