

2026

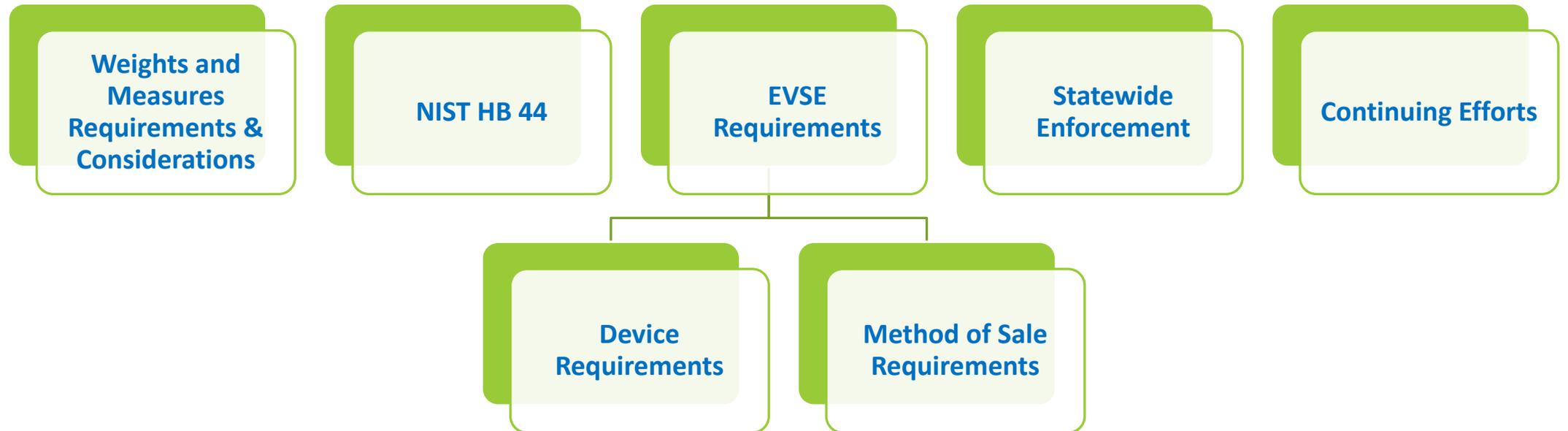
Electric Vehicle Charging Stations Standards and Certification Weights and Measures Requirements



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

Kevin Schnepf – Director CDFA-DMS, Chair NCWM

Topics Covered



Weights and Measures EVSE Considerations

Expansion of Electricity as a Zero-Emission Transportation Fuel Requires:

- A reliable network of commercial charging stations.
- Safe and accurate fueling for battery electric and plug-in hybrid vehicles.

Device Type Evaluation

- All commercial weighing and measuring devices must be type evaluated before installation.

Requirements to successfully undergo type evaluation:

- Accuracy and repeatability.
- Designed for operating conditions.
- Fraud prevention (cannot be easily manipulated).
- Transparent communication of measurements and charges to customers.

Type Evaluation & Standards Applicable to EVSE

For Type Evaluation to occur -

- Enforceable standards must exist, including tolerances and specifications for the device.

Reference Standard

- NIST (NIST) Handbook (HB) 44: *Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices*.
 - Available to be adopted as regulation by reference.

Relevant Sections:

- [1.10.] General Code
- [3.40.] Electric Vehicle Fueling System (EVFS)
- [5.55.] Timing Devices Code (in some applications)

Measurement Traceability & Compliance

Legal Metrology Standards

Traceable measurement standards are required to verify device compliance with adopted tolerances and specifications.

State Metrology Laboratory Accreditation

Accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) and NIST Office of Weights and Measures (OWM).

Quality Assurance

Regular audits ensure ISO/IEC 17025:2017 compliance and measurement traceability for all items within scope.

Weights & Measures Programs

Overall Mission

Preserve and maintain measurement standards, which:

- Enable value comparisons
- Ensure fair consumer value, and;
- Provide for fair industry competition

Core Task

Minimize errors in commercial transactions through uniform application of standards.

- Adoption of Standards
- NIST Handbook 44 is available as a model regulation.
 - California uses the latest edition with amendments.
 - Other states implement other versions of HB 44.

Regulatory Role

After adopting regulations (enforceable standards) and obtaining calibrated test equipment, agencies can then inspect, test, and seal commercial devices.

NIST 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



Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices

as adopted by the 110th
National Council on
Weights and Measures

NIST Handbook **44**
2026



Regulatory Oversight

State:

Maintains standards (mass, length, volume, electric current, etc.), approves new types of measuring devices establishes laws and authorities, some states train and monitor work performed by counties, municipalities, boroughs, or special districts with weights and measures authority.

Counties, Municipalities, Boroughs, and Special Districts:

Local departments of weights and measures who perform most of the field inspections and enforce device compliance requirements in their jurisdictions.

State, County, and Local 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 Type Evaluation

- Type Evaluation performed by a laboratory authorized by the NCWM's National Type Evaluation Program (NTEP) and issuance of a certificate of conformance for a device or measuring system.
- Alternatively, receipt of a Certificate of Approval through the California Type Evaluation Program (CTEP). (California Specific)
- EVSE 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.
 - Acceptance Tolerance is applied during type evaluation and during initial verification of newly installed EVSE.
 - Maintenance Tolerance is applied during periodic re-inspection of installed commercial EVSE.
- Communication protocols, data transmission, and power delivery upstream of the EVSE are not considerations for type evaluation.
- Apps, however, must be approved for use with an EVSE operating with that app.
- EVSE must deliver within tolerances the quantity of energy displayed and charged to the customer.
 - Customer must be informed of applicable charges prior to beginning of charge session and provided an accurate receipt.
- EVSE placed in service by a service agency must meet all applicable specifications and tolerances prior to activation.

Commercial EVSE Method of Sale Requirements

- Most jurisdictions adopt by reference the latest method of sale for motor vehicle fuels published in NIST Handbook 130.
- All electrical energy sold at retail as a vehicle fuel shall be in units in terms of kilowatt-hour (kWh).
- Handbook 130 also includes labeling requirements for retail EVSE.
- Fees assessed for other services such as fixed connection fee and/or time for parking shall be displayed
- EVSE shall be labeled in accordance with 16 CFR, Part 309 (FTC requirement)



NIST OFFICE OF
WEIGHTS AND MEASURES

Uniform Laws and Regulations in the Areas of Legal Metrology and Fuel Quality

as adopted by the 110th
National Council on Weights
and Measures

NIST Handbook **130**
2026

NIST Handbook 130

Uniform Laws and Regulations in the areas of legal metrology and fuel quality

- Used by jurisdictions for regulating method of sale requirements
- Used by inspectors for field enforcement

Statewide Enforcement

- Make sure to identify jurisdiction with authority. May be a county or local municipality depending on state/region.
- State- CA has standards for traceable measurement of AC and DC power for evaluating EVSE.
- CA has developed and formalized the test procedures for type evaluation of EVSE and published the Field Reference Manual (RSA requirement in CA) as well as the examination procedure outline (EPO 52) for county officials.
- Whenever there is a differentiation between NTEP and CTEP requirements, CTEP requirements must be met.
- RSAs whenever placing commercial EVSE into service must use suitable, sufficient, traceable standards with a current calibration certificate by an ISO 17025 accredited laboratory with electrical energy measurement on its scope.*

Ongoing Efforts:

- Education and outreach to weights and measures officials on the specifics of testing and evaluating installed commercial EVSE.
- Education and outreach to Registered Service Agencies and their Agents on the legal requirements for installing, repairing, and placing into service 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.
- Maintain our database of type approved commercial EVSE.
- Maintain engagement with NIST, NCWM, NEMA, and ISO to monitor developments in electrical power measurements and EVSE testing.

ULTIMATE GOAL

Successful Commercialization of EVSE

Accurately and Equitably Supporting EV Drivers and EVSE Owners/Operators



Thank You!

California Department of Food and Agriculture
Division of Measurement Standards
6790 Florin Perkins Road, Suite 100
Sacramento, CA 95828
916-229-3000
dms@cdfa.ca.gov

Kevin Schnepf, Director
Current NCWM Chair
Kevin.schnepf@cdfa.ca.gov