



# CSD LIWP STANDARDS

FOR

## COMBUSTION APPLIANCE SAFETY PROTOCOL - DRAFT

Category	Criteria
<b>1. TESTING DESCRIPTION</b>	<p>1.1. Combustion appliance safety (CAS) testing is conducted to identify unsafe operation of combustion appliances (gas and solid fuel), measure levels of carbon monoxide (CO) in a home, and ensure occupant safety.</p> <p>1.2. Technicians have the option to utilize any of the following testing protocols as long as they have been trained and certified and have demonstrated competency with the chosen protocol:</p> <ul style="list-style-type: none"> <li>a. CSD Combustion Appliance Safety Testing</li> <li>b. PG&amp;E Natural Gas Appliance Testing (NGAT)</li> <li>c. Building Performance Institute (BPI)</li> </ul>
<b>2. CERTIFICATIONS</b>	<p>2.1. CAS testing shall be performed <u>only</u> by technicians and service professionals who:</p> <ul style="list-style-type: none"> <li>a. Are qualified to perform combustion appliance inspection and testing in an IOU-sponsored Energy Upgrade California program, <u>OR</u></li> <li>b. Have successfully completed one or more of the following training courses: <ul style="list-style-type: none"> <li>- CSD Combustion Appliance Safety Testing</li> <li>- PG&amp;E Natural Gas Appliance Testing (NGAT)</li> <li>- Building Performance Institute (BPI) certification that includes evaluation of combustion appliances.</li> </ul> </li> </ul>
<b>3. FEASIBILITY CRITERIA</b>	<p>3.1. CAS testing shall be conducted when:</p> <ul style="list-style-type: none"> <li>a. Combustion appliances are present that “affect” the living space (see Items 4.1(a) and 4.1(b).)</li> <li>b. One or more of the following measures will be or were installed: <ul style="list-style-type: none"> <li>- Infiltration reduction measures (duct repair or replacement and shell sealing activities)</li> <li>- Combustion appliance (heating system hot water heater, or solar water heating) was replaced, altered, and/or repaired.</li> <li>- Insulation (ceiling, walls or floor).</li> <li>- Electronically commutated blower motor</li> <li>- Water heater blanket</li> <li>- Whole house fan</li> <li>- Window replacements</li> </ul> </li> </ul> <p>3.2. Do <u>NOT</u> follow this protocol when:</p> <ul style="list-style-type: none"> <li>a. No combustion appliance is present in the dwelling.</li> </ul>
<b>4. TESTING GUIDELINES</b>	<p>4.1. CAS Applicability</p> <ul style="list-style-type: none"> <li>a. Testing is required for gas appliances that affect the living space—which are inside the home, attached garage/porch, attic, basement, crawlspace, appliance enclosure built into the envelope, or located (appliance or vent terminal) within 4' of an openable window or door into the home.</li> <li>b. Only visual inspections and gas leak checks are required for appliances located outside the living space.</li> </ul> <p>4.2. Contractors performing combustion appliance safety testing must carry personal low-level CO monitors to check ambient CO:</p> <ul style="list-style-type: none"> <li>a. After entering the home—in the main body on the ground floor, and in the main body of each additional story.</li> </ul>

	<p>b. In each separate combustion appliance zone (CAZ) in the living space, attached garage, attic, and basement, as applicable.</p> <p>4.3. Visual examinations, CO measurements, and other test procedures of combustion appliances must <u>pass</u>.</p> <p>a. When an appliance <u>fails</u>:</p> <ul style="list-style-type: none"> <li>- It shall be serviced/adjusted. <ul style="list-style-type: none"> <li>o Combustion appliance adjustments (e.g., to the gas pressure, air-gas mixture, etc.) shall be performed only by appropriately licensed, trained, and authorized personnel.</li> </ul> </li> <li>- When service adjustment does not correct the problem, the appliance shall be repaired or replaced, when allowed by LIWP policy.</li> <li>- When repair or replacement is <u>not</u> available, the appliance shall be referred to the gas utility (who may “red tag” and/or disable the appliance).</li> </ul> <p>b. When correction of CAS issues or appliance replacement is <u>not</u> allowed in the LIWP standards, occupants and building owner/manager shall be notified <u>in writing</u> of nonconforming conditions.</p> <p>c. Infiltration reduction measures are not feasible <u>unless</u> the fail can be corrected <u>first</u> through program leveraging.</p> <p>4.4. When combustion appliance safety testing is required by a program leveraged with LIWP, the testing protocol of the approved leveraged program (see Item 1.2) shall be followed.</p> <p>4.5. Combustion appliance testing documentation (data collection forms and actual protocol used by the contractor) shall be kept in the client file, and provided to the regional administrator and CSD upon request.</p>
<p><b>5. POST-INSTALLATION GUIDELINES</b></p>	<p>5.1. Operational Checks</p> <p>a. When LIWP work is complete:</p> <ul style="list-style-type: none"> <li>- All combustion appliances shall operate as designed, and in accordance with safe operation guidelines.</li> <li>- Installation activities are not complete until combustion appliances operate properly or have been disabled and/or “red-tagged” by the local gas utility, when operating improperly.</li> </ul> <p>b. CAS testing is subject to safety checks by a third-party, as defined by CSD and the program administrator. Identification of issues, or a pattern of issues, with regard to CAS testing may result in additional training requirements for the contractor, or disallowance of work.</p>
<p><b>6. MATERIAL SPECIFICATIONS</b></p>	<p>6.1. Gas leak and combustion appliance test equipment shall be in compliance with ANSI/BPI-1200-S-2015, Section 7.</p> <p>6.2. Personal Safety Equipment</p> <p>a. All field personnel entering a home to assess a dwelling or evaluate combustion appliance safety must carry a personal low-level CO monitor.</p> <p>b. The monitor must be able to measure CO as low as 5 ppm in real time.</p>
<p><b>7. WARRANTY</b></p>	<p>7.1. Not applicable.</p>



# CSD LIWP STANDARDS

FOR

## DUCT TESTING PROTOCOL - DRAFT

Category	Criteria
<b>1. TESTING DESCRIPTION</b>	1.1. Duct leakage testing uses visual inspection in conjunction with pressure testing methods to locate and correct air leaks in a duct system. 1.2. The following requirements are in addition to all applicable requirements found in the General Installation Guidelines.
<b>2. LICENSING</b>	2.1. This measure requires a Class B General Building Contractor or C-20 Warm-Air Heating, Ventilating, and Air-Conditioning Contractor license for purposes of the LIWP program.
<b>3. FEASIBILITY CRITERIA</b>	3.1. Conduct this test when: <ul style="list-style-type: none"> <li>a. Required for Title 24 or for energy audit.</li> </ul> 3.2. Do <u>NOT</u> conduct this test when: <ul style="list-style-type: none"> <li>a. Infiltration reduction measures are <u>not</u> feasible.</li> <li>b. The duct system is inaccessible.</li> <li>c. Duct system is constructed, insulated, or sealed with asbestos.</li> <li>d. Register(s) cannot be blocked due to home furnishings or configuration.</li> <li>e. Ducts are excessively damaged or deteriorated, and costs to correct would cause the SIR to be less than 1.0.</li> <li>f. The entire duct system is inside the thermal envelope (living space).</li> <li>g. A CAS or indoor air quality hazard exists that cannot be corrected and would be exacerbated by pressure testing the ducts.</li> <li>h. Evidence of rodent or pest infestation is present <u>inside</u> the ducts.</li> <li>i. The home's FAU shares ducts with an evaporative cooler, but the FAU is not isolated from the cooler by a functional damper (and damper installation is not feasible).</li> </ul>
<b>4. ADDITIONAL TESTING POLICIES</b>	4.1. Title 24 requirements shall: <ul style="list-style-type: none"> <li>a. Apply to conventional homes in all CEC climate zones when an HVAC system "alteration" occurs (not applicable to mobile homes).</li> <li>b. Require contractors to certify duct leakage to be an acceptable percentage of fan flow, with a sampling of jobs subject to inspection and verification by a HERS Rater.               <ul style="list-style-type: none"> <li>- When impossible to reduce to an acceptable level, all <u>accessible</u> ducts must be sealed. 100% of those jobs are subject to HERS Rater inspection and certification.</li> </ul> </li> </ul> 4.2. Duct sealing work shall be conducted in conformance with the LIWP "Duct Repair and Replacement" standard and in conjunction with Duct Testing. 4.3. File Documentation: When a system has been tested and certified by HERS Rater, the HERS Rater report showing final CFM25 and "pass" must be in client file.
<b>5. HOUSE SET-UP AND TESTING PROCEDURES</b>	5.1. Assessor shall perform a visual check of all system components <u>before</u> performing the duct leakage test and note all disconnections, gaps, and leakage sources. 5.2. Catastrophic Leakage: If system includes catastrophic leaks (i.e., disconnections, crushed, or damaged duct), testing shall be performed to collect total leakage data. 5.3. House Set-Up and testing shall be performed in conformance with manufacturer's instructions and Title 24 2016 Residential Appendix, Sec. RA3.1, "Field Verification

	<p>and Diagnostic Testing of Air Distribution Systems”.</p> <p>5.4. Mobile Home Special Procedure: When the FAU is located in an enclosure accessed from outdoors and the enclosure is the return plenum (the return is not ducted into the FAU), return air reaches the FAU through grille(s) located in the wall between the enclosure and the living space.</p> <ol style="list-style-type: none"> <li>a. Connect the duct tester to the largest return grille in the enclosure wall, rather than directly to the FAU.</li> <li>b. Additional return grille(s) shall be temporarily blocked for the test.</li> <li>c. Duct tester will pressurize the enclosure <u>and</u> FAU, not just the FAU.</li> <li>d. Close the enclosure access door in as-is condition (not weatherstripped before the test), unless the door is excessively damaged/deteriorated. <ul style="list-style-type: none"> <li>- If leakage is catastrophic and out of range for duct testing, the door must be temporarily blocked (e.g., with tape and plastic film).</li> <li>- Sealing of gaps and cracks in the enclosure is part of duct sealing work.</li> </ul> </li> </ol>
<p><b>6. POST-TEST</b></p>	<p>6.1. Operational Checks: Return home to pre-test condition, including:</p> <ol style="list-style-type: none"> <li>a. Remove all temporary seals.</li> <li>b. Check supply registers and return grilles for proper operation.</li> <li>c. Reinstall or replace air filter(s).</li> <li>d. Restore power to the HVAC system and/or the air handler.</li> <li>e. Return all windows, doors, fans, heating and cooling equipment, etc. to original settings.</li> <li>f. Return any furniture/items moved to the original positions.</li> <li>g. Remove all test equipment, tools, supplies, and trash from the home.</li> </ol>
<p><b>7. EQUIPMENT SPECIFICATIONS</b></p>	<p>7.1. Test equipment shall be in conformance with Title 24 2016 Residential Appendix, Sec. RA3.1, “Field Verification and Diagnostic Testing of Air Distribution Systems”.</p> <p>7.2. Calibration of Equipment: Test equipment shall be maintained properly, calibrated regularly in accordance with manufacturer’s recommendations, and calibration records shall be kept on file for quality assurance verification.</p>
<p><b>8. WARRANTY</b></p>	<p>8.1. Not applicable.</p>



# CSD LIWP STANDARDS

FOR

## GENERAL INSTALLATION GUIDELINES - DRAFT

Category	Criteria
<b>1. UNIVERSAL GUIDELINES</b>	1.1. The information contained in this section shall apply to <u>ALL</u> sections of the CSD LIWP Standards. 1.2. These requirements are printed here to prevent repetition of the information in each individual measure section. 1.3. Application and enforcement of these requirements shall have the same force and effect as all other installation requirements included in these LIWP Standards. 1.4. Contractor shall comply with applicable regulations and standards under: a. California State Licensing Board (CSLB) b. California Code of Regulations (CCR) Title 8 (Ca/OSHA) c. California Office of Environmental Health Hazard Assessment (OEHHA) Proposition 65 d. Department of Housing and Community Development (HCD) e. Environmental Protection Agency (EPA) f. California Department of Public Health (CDPH) g. US Department of Housing and Urban Development (HUD) 1.5. All staff members are to conduct themselves in a professional manner when interacting with the client during all stages of the LIWP process.
<b>2. LICENSING AND CERTIFICATIONS</b>	2.1. Licensing a. Contractors are required to maintain in good standing a Class B General Building Contractor and/or all required specialty licenses, when applicable. b. Specialty licensing is required for specific measures and includes: - C-10 Electrical Contractor - C-20 Warm-Air Heating, Ventilating and Air-Conditioning Contractor - C-36 Plumbing Contractor - C-46 Solar Contractor c. Licensing requirements for each individual measure are included in their respective standard and some other licensing classifications may be allowed, dependent upon the measure installed. 2.2. Certifications a. All Contractors are required to maintain in good standing Environmental Protection Agency Repair, Renovation, and Painting (EPA RRP) Certified Firm status and an appropriate number of EPA Certified Renovators to efficiently conduct work to meet EPA requirements for presumed lead-based paint in pre-1978 dwellings. b. All other certifications (e.g., BPI, HERS, etc.) used for qualifying a Contractor for the LIWP program are to be maintained and in good standing.
<b>3. FEASIBILITY CRITERIA</b>	3.1. General Feasibility Criteria for All Work a. No measure shall be installed that: - Violates worker safety or occupant safety requirements. - Is refused by the client (after measure benefits have been explained by the Assessor). b. No measure shall be installed where: - Unsafe attic or crawlspace conditions are present, including but not limited to the presence of:

	<ul style="list-style-type: none"> <li>○ Friable asbestos-containing materials may be present or created;</li> <li>○ Hazardous insect or animal infestation;</li> <li>○ Hazardous electrical condition;</li> <li>○ Unsafe structural members or condition of the attic/floor (as applicable);</li> <li>○ Excessive ground moisture in the crawlspace (standing water, sewage, or mud);</li> <li>○ Cal/OSHA confined space conditions cannot be identified or properly resolved;</li> <li>○ Fire hazards and CVA obstructions: <ul style="list-style-type: none"> <li>▪ If a potential fire hazard is due to insulation that contacts/covers heat-producing devices (or obstructs CVA vents), the client shall be informed of the non-conforming condition.</li> <li>▪ If the client is physically unable to correct the issues, minor fire hazards (and CVA obstructions) shall be removed/corrected by the contractor.</li> </ul> </li> </ul>
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<p><b>4. PRE-INSTALLATION GUIDELINES</b></p>	<p>4.1. LIWP Deferral Policy</p> <ol style="list-style-type: none"> <li>a. Conditions may exist which cannot be mitigated because corrections exceed the scope of LIWP or cannot be achieved in a cost-effective manner.</li> <li>b. In these instances, contractors shall install feasible measures and, as applicable, refer the client to other agencies/programs for additional assistance.</li> <li>c. Presence of any of the conditions below shall require deferral of all weatherization activities: <ul style="list-style-type: none"> <li>- Mechanical, electrical, or plumbing system is in such disrepair that failure is imminent.</li> <li>- An environmental condition exists that endangers the client or contractor workers. (Example: standing water/sewage, mold, friable asbestos, etc.).</li> <li>- Evidence of significant infestation of rodents, insects, and/or other vermin is present.</li> <li>- Moisture conditions within the home are severe and infiltration reduction measures are not feasible.</li> <li>- Home is condemned, is under remodeling or rehabilitation, or has structural issues beyond the program scope.</li> <li>- Home has unsafe air quality. (Examples: sewage, significant animal feces in the home, improperly stored chemicals, combustible materials, or other fire hazards present a danger to the occupants or workers, etc.)</li> <li>- Home is pre-1978 construction and paint is seriously degraded and/or damaged, creating a hazardous condition with paint chips or dust.</li> <li>- Manufactured housing registration is not current or in good standing, and HCD permit will not be granted.</li> <li>- Occupant has a known health conditions that would be made worse by LIWP activities.</li> <li>- Maintenance or housekeeping practices limit access of workers to the dwelling for diagnostics or services.</li> <li>- Unsecured pets prevent workers from safely completing their work.</li> <li>- Client refusal of combustion appliance safety testing, duct leakage testing, or</li> <li>- Client is uncooperative, abusive, or threatening to field personnel.</li> <li>- Illegal activities are taking place in the home.</li> </ul> </li> <li>d. A contractor may need to defer some or all LIWP services when unsafe conditions require repairs or replacements that exceed the scope or funding of LIWP (known as a limited deferral).</li> <li>e. When this occurs, the contractor shall follow the policies described in Item 4.2, document with photographs of the condition, and complete the LIWP Weatherization Deferral Form (CSD 542L).</li> </ol> <p>4.2. Client Notification</p> <ol style="list-style-type: none"> <li>a. Clients shall be informed about identified problems and safety concerns and the reasons why services must be deferred.</li> <li>b. Notification shall also indicate the type of assistance the contractor will provide</li> </ol>
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	<p>and what the property owner can do to facilitate installation of deferred measures.</p> <ul style="list-style-type: none"> <li>c. Notification shall be provided to the homeowner (when the dwelling is occupied), or to the occupant and owner/agent when the dwelling is a rental.</li> <li>d. A copy of the completed LIWP Weatherization Deferral Form (CSD 542L) shall be placed in the client's permanent file.</li> </ul> <p>4.3. Permits</p> <ul style="list-style-type: none"> <li>a. Where required by the local jurisdiction or HCD, the contractor shall obtain a building permit before work commences and follow appropriate procedures to final the permit.</li> </ul>
<p><b>5. GENERAL INSTALLATION GUIDELINES</b></p>	<ul style="list-style-type: none"> <li>5.1. Worksite Conduct <ul style="list-style-type: none"> <li>a. Meeting the CAL/OSHA worker safety regulations is the responsibility of the regional administrator, LIWP contractor, and all field personnel.</li> <li>b. All supervising employees and field workers must be aware of conditions in all work areas that can produce injuries. No worker is required to work at a job he/she knows is not safe or healthful.</li> <li>c. All field workers' cooperation in detecting hazards and controlling them is required in conformance with CAL/OSHA contractors' internal policies, Injury and Illness Prevention Plan (IIPP), and other regulating agencies' requirements.</li> <li>d. No smoking is allowed at the job site for any contractor field personnel or supervisor.</li> </ul> </li> <li>5.2. All LIWP measure installations and diagnostics shall be in compliance with: <ul style="list-style-type: none"> <li>a. Manufacturer's instructions and specifications.</li> <li>b. Local building code and current (2016) Title 20 and Title 24 regulations regarding system/measure installation, precautions, zoning, noise abatement, access, et al, and including, but not limited to: <ul style="list-style-type: none"> <li>- California Residential Code (CRC)</li> <li>- California Building Code (CBC)</li> <li>- California Mechanical Code (CMC)</li> <li>- California Plumbing Code (CPC)</li> <li>- California Electrical Code (CEC)</li> <li>- California Fire Code (CFC)</li> </ul> </li> <li>c. LIWP Combustion Appliance Safety (CAS) Protocol.</li> <li>d. LIWP Duct Testing Protocol.</li> <li>e. Other stated policies as identified in the individual LIWP standards.</li> </ul> </li> <li>5.3. Attic and Crawlspace Accessibility <ul style="list-style-type: none"> <li>a. Accessibility limitations to an attic or crawlspace for installation of LIWP measures shall be in conformance with Cal/OSHA and local code requirements.</li> <li>b. Field personnel are responsible for adhering to these requirements. If LIWP work cannot be performed due to accessibility constraints, this shall be noted on the LIWP 540 form.</li> </ul> </li> <li>5.4. Lead-Safe Weatherization <ul style="list-style-type: none"> <li>a. Lead-safe practices shall be followed in homes of pre-1978 construction in conformance with the DPH, CAL/OSHA, EPA, and HUD lead-safe weatherization requirements.</li> </ul> </li> <li>5.5. Knob-and-Tube (K&amp;T) Wiring <ul style="list-style-type: none"> <li>a. Feasibility: <ul style="list-style-type: none"> <li>- When present, knob-and-tube (K&amp;T) wiring may be energized and potentially dangerous to field personnel. Assessors and installation personnel shall use a tester to determine if a conductor is energized or not in the areas where measure feasibility is being evaluated.</li> <li>- When an electrical K&amp;T hazard may exist, all field personnel are required to confirm the feasibility of installing measure(s) in that area without endangering staff or occupants. If the K&amp;T hazard cannot be avoided, the</li> </ul> </li> </ul> </li> </ul>

measure in that area shall not be feasible.

b. Insulation Installation

- Field personnel shall NOT install insulation in attics or crawlspaces around/near energized knob-and-tube wiring, unless the wiring has been certified safe by an electrical (C-10) contractor through a “Notice of Survey” certification. *Note:* Wall insulation shall not be installed when K&T wiring is present in dwelling walls, even when a C-10 electrical contractor “Notice of Survey” is available.
- To determine the feasibility of insulation where K&T wiring is present, the CSD 543L “Notice of Survey by Electrical Contractor” shall be completed by a licensed C-10 contractor.
- In order for insulation to be feasible, the C-10 contractor must certify the requirements for encapsulation in CEC Article 394 can be met. This may include obtaining a permit and final inspection by the local jurisdiction.
- If the local jurisdiction is more restrictive than CEC Article 394 regarding K&T wiring, the local policy must be followed and documented in the client file.
- “Nuisance Tripping”: The contractor shall explain the possibility of “nuisance tripping” that may be caused by new overcurrent protection as described on the CSD 543L “Notice of Survey by Electrical Contractor”. The client shall sign the CSD 543L in acknowledgement of this possibility.

c. K&T Dwelling Documentation

- Before any measure is installed in the K&T wiring locations (attic or crawlspace), warning placards shall be posted as described in CEC Article 394 and by CSD policy.
- Field personnel shall ensure that a “Warning Placard” is posted at the primary attic/crawlspace entry, and near each entrance (accessed from inside or outside the living space). Warning placards must be printed in both English and Spanish.
- The client-signed “Notice of Survey” also must be posted next to the Warning Placard at the primary entrance to the work site and a copy of the completed “Notice of Survey” shall be given to the client after it is signed.

d. Procedures When Installed Insulation Does Not Encapsulate K&T

- When contractor will not encapsulate K&T wiring, a C-10 contractor survey is not required; however, these procedures must be followed:
  - o When wiring is on attic floor, the cavity containing wiring shall not be insulated with loose fill.
  - o When K&T wiring is secured near the top of a ceiling joist:
    - Insulation underneath the wiring is feasible only if at least 1-1/2” can be installed.
    - Flexible mineral fiber batt insulation may be placed under wiring as long as 1” free air space is maintained around the wire, the top is left open, and insulation does not make contact with the wire.
    - Blocking is required if the joist to which the K&T wire is attached does not exceed height of loose fill insulation in the adjacent cavity by at least 2”.
    - Blocking shall extend at least 14-1/2” away.
    - Free-standing batt blocking shall be wider than tall, or stapled to the joist.
    - Undersized (narrow) batts are allowed when wedged snugly between two joist members.

e. K&T Blocking Materials

- Unfaced mineral fiber batts may be placed over existing loose fill to achieve desired R-value.
- Blocking material and supports shall be non-combustible and shall not contain any electrical conductive material (foil vapor barrier is prohibited).

<p><b>6. POST-INSTALLATION GUIDELINES</b></p>	<p>6.1. Cleanup and Disposal</p> <ol style="list-style-type: none"> <li>a. Furniture and other household items moved for installation work shall be returned to their original positions.</li> <li>b. Replaced or removed materials shall be recycled or disposed of in accordance with applicable federal, state, and local waste management requirements (and shall not be left behind for occupants, unless specifically allowed in the individual measure standard). All packaging materials and debris shall be removed from the premises.</li> </ol>
<p><b>7. CLIENT EDUCATION REQUIREMENTS</b></p>	<p>7.1. All LIWP program clients shall be provided with the following educational materials, as identified:</p> <ol style="list-style-type: none"> <li>a. EPA pamphlet: “A Brief Guide to Mold, Moisture, and Your Home”.</li> <li>b. EPA pamphlet: “A Citizen’s Guide to Radon”.</li> <li>c. EPA pamphlet, for all clients in pre-1978 units: “Renovate Right: Important Lead Hazard Information for Families, Child Care Providers and Schools”.</li> </ol> <p>7.2. Contractor shall provide the client with a description of the benefits that the client can expect to receive as a result of the LIWP measures installed and any diagnostic tests to be performed in the dwelling.</p> <p>7.3. Clients shall be supplied with both verbal and written instructions for proper operation, maintenance requirements, system components, programming of controls (where applicable), warranty information, and safety considerations for each measure installed.</p> <p>7.4. All industry inspection/verification certificates shall be provided to the client. Examples, include, but are not limited to insulation certificates, HERS verifications, etc.</p> <p>7.5. Contractor shall complete the LIWP Client Education Confirmation of Receipt (CSD 321L) to document that client was provided with all required materials and documentation cited above.</p> <p>7.6. Permits</p> <ol style="list-style-type: none"> <li>a. When a permit is required by the local jurisdiction, CSD requires that the client receive an explanation of the permitting and inspection process.</li> <li>b. When the dwelling contains obviously un-permitted work (i.e., questionable construction or installation of additions or appliances, etc.), the assessor shall explain that the building inspector may elect to inspect these additional components and that findings or fines related to this additional examination shall be the responsibility of the property owner.</li> </ol> <p>7.7. Additional, measure-specific client education requirements shall be cited in the individual measure standard.</p> <p>7.8.</p>
<p><b>8. QUALITY ASSURANCE</b></p>	<p>8.1. Each Regional Administrator is required to adhere to their CSD-approved LIWP Quality Assurance Plan to ensure that the installed work is meeting program goals, standards and workmanship requirements.</p> <p>8.2. The following documentation must be available upon request to CSD Quality Assurance Inspectors, CSD field monitoring staff and CSD representatives:</p> <ol style="list-style-type: none"> <li>a. Manufacturers’ instructions and specifications for installed materials</li> <li>b. Current licensing and certifications for all contractors.</li> <li>c. Client file records.</li> </ol>
<p><b>9. MINIMUM WARRANTIES</b></p>	<p>9.1. Manufacturer warranty requirements (primary material/appliance) will be cited in the individual measure standard.</p> <p>9.2. Contractor warranty for ancillary materials and labor shall be 1 year for all measures, with the exception of the following:</p>

	<ul style="list-style-type: none"> <li>a. Refrigerant Charge - 90 days</li> <li>b. Tier 2 Audio-Visual Advanced Power Strips - 90 days</li> </ul>
<p><b>10. DOCUMENTATION REQUIREMENTS</b></p>	<p>10.1. All required forms are to be signed and dated and maintained in the individual client files.</p> <ul style="list-style-type: none"> <li>a. Files may be maintained electronically or in hard copy.</li> </ul> <p>10.2. Required client file documentation, when applicable, shall include but not limited to:</p> <ul style="list-style-type: none"> <li>a. Eligibility documentation</li> <li>b. Permit application and finalized permit</li> <li>c. Applicable field forms</li> <li>d. Catastrophic leak calculations</li> <li>e. Field notes</li> <li>f. Photo documentation</li> <li>g. Energy audit reports</li> <li>h. HERS verification</li> <li>i. Insulation certificate</li> <li>j. Regional Administrator billing</li> </ul> <p>10.3. Photo documentation will be required for all replaced appliances and catastrophic leaks. Forthcoming energy audit protocols may have additional photo requirements.</p> <p>10.4. Job Completion</p> <ul style="list-style-type: none"> <li>c. Jobs cannot be billed to CSD until all assessed work is installed.</li> <li>d. A job is not considered completed until all permits have been finalized.</li> </ul> <p>10.5. Required Certificates</p> <ul style="list-style-type: none"> <li>a. All industry inspection/verification certificates and/or those required by CSD shall be completed and signed by the contractor responsible for installation of the measure. Examples include, but are not limited to insulation certificates, HERS verifications, etc.</li> </ul>
<p><b>11. REQUIRED PROGRAMMATIC FORMS</b></p>	<p>11.1. All forms are standardized for use under the LIWP program and cannot to be altered.</p> <p>11.2. The LIWP Form List is included as Attachment A of the General Installation Guidelines.</p>

**Attachment A**  
**LIWP Forms List - Proposed**

Item #	Form #	Form Title	Purpose
1	43L	LIWP Energy Intake Form	Documents personal and dwelling information of a client in order to determine eligibility of a potential client
2	43BL	Certification of Income & Expenses	Documents households with no proof of income
3	081L	Client/Customer Consent Form and Authorization	Used to authorize the state to collect utility usage data to measure the effectiveness of services provided
4	143L	Working Capital Advance - LIWP	Used to request advances to meet cash flow assistance
5	204	Payee Data Records Form	Required when a Contractor enters into a contract with the State of California
6	251	Public Website Update Form	Used to update CSD's public website
7	321L	Client Education Confirmation of Receipt	Confirms delivery of various educational pamphlets, instructions and warranty materials
8	515AL	Energy Service Agreement for Occupant	Documents acceptance of program terms and grants permission to enter dwelling before services are provided
	515BL	Energy Service Agreement for Rental Property Owner	
9	540L	LIWP Dwelling Assessment Form	Assesses and documents dwelling characteristics to determine need for services
10	542L	Wx Deferral Form	Acknowledges that services are being deferred
11	543	Notice of Survey by Electrical Contractor	Used to define condition of knob and tube wiring
12	544L	Energy Audit Entry Form	Collects and logs data collected for the purpose of performing an energy audit
13	610	Insulation Certificate	Used for posting as well as given to client and put in file when Insulation is done
14	611L	LIWP Weatherization Inspection Report	Used by contractor inspector as assurance that all feasible measures were installed correctly
15	706L	Duct Leakage Data Sheet	Documents dwelling information and instrument readings in the course of performing duct leakage tests
16	708	Lead-Based Paint Regulatory Compliance Report	Completed for all units to meet record keeping requirements of the EPA Lead Safe Wx (LSW) Renovation, Repair & Painting (RRP) Rule.
	708A	LSW—RRP Participants Progress Log	Assists in tracking required training to meet the record keeping requirements of the EPA Lead Safe Wx (LSW) Renovation, Repair & Painting (RRP) Rule.