





CERTIFICATE OF INSTALLATION		NRCI-PLB-01-E
Plumbing		(Page 2 of 4)
Project Name:	Enforcement Agency:	Permit Number:
Project Address:	City:	Zip Code:

<b>C. MANDATORY REQUIREMENTS FOR ALL CENTRAL DOMESTIC HOT WATER RECIRCULATION SYSTEMS</b>	
01	On systems that have a total capacity greater than 167,000 Btu/hr, outlets that require higher than service water temperatures as listed in the ASHRAE Handbook have separate remote heaters, heat exchangers, or boosters to supply the outlet with the higher temperature. (Section 110.3 (c)1)
02	Systems with circulating pumps or with electrical heat trace systems shall be capable of automatically turning off the system. (Section 110.3(c)2).
05	Unfired storage tanks are insulated with an external R-12 or combination of R-16 internal and external Insulation. Alternatively, the heat loss of the tank surface based on an 80°F water-air temperature difference shall be less than 6.5 Btu per hour per square foot. (Section 110.3(c)4).
06	All sections of the recirculation loop, and the first 5 feet of all branches off the loop are insulated, to the thicknesses required by Table 120.3A, except for the following: (RA4.4.1) <ul style="list-style-type: none"> <li>• Piping installed in interior or exterior walls that is surrounded on all sides by at least 1inch of insulation.</li> <li>• Piping installed in attics with a minimum of 4 inches (10 cm) of attic insulation on top.</li> <li>• Piping that penetrates framing members shall not be required to have pipe insulation for the distance of the framing penetration. Metal piping that penetrates metal framing shall use grommets, plugs, wrapping or other insulating material to assure that no contact is made with the metal framing. Insulation shall butt securely against all framing members.</li> <li>• Insulation is not required on the cold water line when it is used as the return.</li> </ul>
07	Hot water pipes that are buried below grade are installed in a water proof and non-crushable casing or sleeve that allows for installation, removal, and replacement of the enclosed pipe and insulation. (RA4.4.1)
08	Insulation outside conditioned space is protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. (RA4.4.1)
09	Pipe insulation fits tightly to the pipe. (RA4.4.1)
10	On insulated sections of pipe, no piping is visible due to insulation voids, and all elbows and tees are fully insulated. (RA4.4.1)
11	The recirculation pump is mounted on a vertical section of the return line, OR an automatic air release valve is installed on a riser at least 12 inches in length, on the inlet side of the recirculation pump, no more than 4 feet from the pump. (Section 110.3(c)5A).
12	A check valve is located between the recirculation pump and the water heater. (Section 110.3(c)5B).
13	A hose bibb is installed between the pump and the water heating equipment with an isolation valve between the hose bibb and the water heating equipment. (Section 110.3(c)5C).
14	Isolation valves are installed on both sides of the pump. One of the isolation valves may be the same isolation valve as in item 12 above. (Section 110.3(c)5D).
15	The cold water supply piping and the recirculation loop piping is not connected to the hot water storage tank drain port. (Section 110.3(c)5E).
16	A check valve is installed on the cold water supply line between the hot water system and the next closest tee on the cold water supply. (Section 110.3(c)5F).
17	The hot water distribution system piping from the water heater(s) to the fixtures and appliances takes the most direct path. (RA 4.4.7.1)
18	Installation and operation instructions that provide details of the operation of the pump and controls are available at the jobsite for inspection. (RA 4.4.7.1)
19	More than one circulation loop may be installed. Each loop shall have its own pump and controls. (RA4.4.8, RA 4.4.9, RA 4.4.10)
<b>The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.</b>	



CERTIFICATE OF INSTALLATION		NRCI-PLB-01-E
Plumbing		(Page 3 of 4)
Project Name:	Enforcement Agency:	Permit Number:
Project Address:	City:	Zip Code:

<b>E. Mandatory Measures for all Domestic Hot Water Distribution Systems</b>	
01	Equipment shall meet the applicable requirements of the Appliance Efficiency Regulations (Section 110.3(b)1).
02	Unfired Storage Tanks are insulated with an external R-12 or combination of R-16 internal and external Insulation. (Section 110.3(c)4).
03	<ul style="list-style-type: none"> <li>• <u>All domestic hot water piping shall be insulated as specified in Section 609.11 of the California Plumbing Code. In addition, the following piping conditions shall have a minimum insulation wall thickness of 1 inch or a minimum insulation R-value of 7.7:</u> <ul style="list-style-type: none"> <li>• The first 5 feet (1.5 meters) of cold water pipes from the storage tank.</li> <li>• All piping with a nominal diameter of 3/4 inch (19 millimeter) and less than 1 inch.</li> <li>• All hot water with a nominal diameter less than 3/4 inch that is: <ul style="list-style-type: none"> <li>○ Associated with a domestic hot water recirculation system.</li> <li>○ From the heating source to the kitchen fixtures.</li> <li>○ From the heating source to storage tank or between tanks.</li> <li>○ Buried below grade.</li> </ul> </li> <li>• Piping that penetrates framing members shall not be required to have pipe insulation for the distance of the framing penetration. Piping that penetrates metal framing shall use grommets, plugs, wrapping or other insulating material to assure that no contact is made with the metal framing. Insulation shall butt securely against all framing members.</li> <li>• Piping installed in interior or exterior walls that is surrounded on all sides by at least 1 inch of insulation.</li> <li>• Piping installed in crawlspace with a minimum of 2 inches (5 cm) of crawlspace insulation above and below.</li> <li>• Piping installed in attics with a minimum of 4 inches (10 cm) of attic insulation on top</li> </ul> </li> </ul>
04	<ul style="list-style-type: none"> <li>• <u>Pipe insulation shall meet the insulation protection requirements of Section 120.3(b)</u> <ul style="list-style-type: none"> <li>○ <b>Insulation exposed to weather shall be shielded from solar radiation.</b></li> <li>○ <b>Insulation on peps buried below grade must be installed in a water proof and non-crushable casing or sleeve.</b></li> </ul> </li> </ul>
05	All elbows and tees shall be fully insulated. (RA4.4.1)
06	Where insulation is required, no piping shall be visible due to insulation voids, and all insulation shall fit tightly to the pipe. (RA4.4.1)
07	<p><b>For Gas or Propane Water Heaters:</b> Ensure the following are installed (Section 150.0(n))</p> <ol style="list-style-type: none"> <li>1. A dedicated 125V, 20A electrical receptacle connected to the electric panel with a 120/240V 3 conductor, 10 AWG copper branch circuit, within 3 feet from the water heater and accessible with no obstructions; <ol style="list-style-type: none"> <li>a. The conductor shall be labeled with the work "Spare" on both ends; and</li> <li>b. A reserved single pole circuit breaker space next to the circuit breaker next to the branch circuit in A labeled "Future" 240V shall be provided.</li> </ol> </li> <li>2. A Category III or IV vent, or a Type B vent with straight pipe between outside and water heater</li> <li>3. A condensate drain no more than 2 inches higher than the base on water heater for natural draining</li> <li>4. A gas supply line with capacity of at least 200,000 Btu/hr</li> </ol>
<b>The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.</b>	



CERTIFICATE OF INSTALLATION		NRCI-PLB-01-E
Plumbing		(Page 4 of 4)
Project Name:	Enforcement Agency:	Permit Number:
Project Address:	City:	Zip Code:

<b>DOCUMENTATION AUTHOR'S DECLARATION STATEMENT</b>		
1. I certify that this Certificate of Installation documentation is accurate and complete.		
Documentation Author Name:	Documentation Author Signature:	
Documentation Author Company Name:	Date Signed:	
Address:	CEA/ HERS Certification Identification (If applicable):	
City/State/Zip:	Phone:	
<b>RESPONSIBLE PERSON'S DECLARATION STATEMENT</b>		
I certify the following under penalty of perjury, under the laws of the State of California:		
<ol style="list-style-type: none"> <li>The information provided on this Certificate of Installation is true and correct.</li> <li>I am eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation and attest to the declarations in this statement (responsible builder/installer), otherwise I am an authorized representative of the responsible builder/installer.</li> <li>The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations, and the installation conforms to the requirements given on the plans and specifications approved by the enforcement agency.</li> <li>I reviewed a copy of the Certificate of Compliance approved by the enforcement agency that identifies the specific requirements for the scope of construction or installation identified on this Certificate of Installation, and I have ensured that the requirements that apply to the construction or installation have been met.</li> <li>I will ensure that a completed signed copy of this Certificate of Installation shall be posted, or made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy.</li> </ol>		
Responsible Builder/Installer Name:	Responsible Builder/Installer Signature:	
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)	Position With Company (Title):	
Address:	CSLB License:	
City/State/Zip:	Phone:	Date Signed: