(g) The hot water distribution system piping from the water heater(s) to the fixtures and appliances must take the most direct path. For example, in a house with more than 1-story and the water heater in the garage, this requirement would exclude running hot water supply piping from the water heater to the attic, and then running the line back down to a first floor point of use.

(h) The ECC-rater shall also verify that the supply portion of each circulation loop, the first five feet of branches off the loop and the dedicated return line are insulated based on the conductivity range in TABLE 120.3-A, the insulation level shall be selected from the fluid temperature range based on the thickness requirements in TABLE 120.3-A and the insulation shall be installed in accordance with RA3.6.2. Other hot water piping shall meet the requirements of §150.0(j) and be installed in accordance with RA3.6.2. Insulation is not required on the cold water line when it is used as the return.

(i) Verify that sensor controls initiate pump operation by activating one of the sensor controls and observing that the pump turns on and then shuts off in accordance with one of the two methods listed.

1. After the pump has been activated, the controls shall allow the pump to operate until the water temperature at the thermo-sensor rises not more than 10ºF (5.6 ºC) above the initial temperature of the water in the pipe, or
2. The controls shall not allow the pump to operate when the temperature in the pipe exceeds 102ºF (38.9 ºC).

(j) Verify that the controls have a feature that limits pump operation to a maximum of 5 minutes following any activation. This is provided in the event that the normal means of shutting off the pump have failed.

(k) The manufacturer(s) of the recirculation pump and the controls shall provide installation and operation instructions that provide details of the operation of the pump and controls, and such instructions shall be available at the jobsite for inspection.

RA3.6.8 Reserved

RA3.6.9 Verified Drain Water Heat Recovery System (DWHR-H)

A ECC-rater is required to obtain this credit. All DWHR unit(s) shall be certified to the Energy Commission according to the following requirements:

(a) Vertical DWHR unit(s) shall be compliant with CSA B55.2 and tested and labeled in accordance with CSA B55.1 or IAPMO IGC 346-2017. Sloped DWHR unit(s) shall be compliant with IAPMO PS 92 and tested and labeled with IAPMO IGC 346-2017.

(b) The DWHR unit(s) shall have a minimum rated effectiveness of 42 percent.

The ECC-rater shall verify that:

(a) The make, model, and CSA B55.1 or IAPMO IGC 346-2017 rated effectiveness of the DWHR unit(s) shall match the compliance documents. The DWHR unit(s) shall also be

verified as a model certified to the Energy Commission as qualified for credit as a DWHR unit(s).

(b) The installation configuration (e.g., equal flow, unequal flow to the water heater, or unequal flow to the showers) and the percent of served shower fixtures shall match the compliance documents.

(c) For water heating system serving a single dwelling, the DWHR system shall, at the minimum, recover heat from the master bathroom shower and must at least transfer that heat either back to all the respective showers or the water heater.

(d) For central water heating system serving multiple dwellings, the DWHR system shall, at the minimum, recover heat from half the showers located above the first floor and must at least transfer that heat either back to all the respective showers or the water heater.

(e) The DWHR unit(s) shall be installed within 1 degrees of the rated slope. Sloped DWHR shall have a minimum lengthwise slope of 1 degree. The lateral level tolerance shall be within plus or minus 1 degree.

(f) The installation shall comply with any applicable California Plumbing Code requirements.

RA3.7 Field Verification and Diagnostic Testing of Mechanical Ventilation Systems

RA3.7.1 Purpose and Scope

RA3.7 contains procedures for verification of heat recovery efficiency and fan efficacy, and for measuring the airflow rate for mechanical ventilation systems.

RA3.7 is applicable to mechanical ventilation systems in residential dwelling units.

RA3.7 provides required procedures for installers, ECC-raters and others who are required to perform field verification of mechanical ventilation systems for compliance with Part 6.

Table RA3.7-1 – Summary of Verification and Diagnostic procedures

Diagnostic	Description	Procedure
Whole-Building Mechanical Ventilation Airflow	Verification of whole-building ventilation system airflow rate. Continuous Operation	RA3.7.4.1
Whole-Building Mechanical Ventilation Airflow	Verification of whole-building ventilation system airflow rate. Intermittent Operation	RA3.7.4.2
Kitchen Local Mechanical Exhaust	Verification of vented range hood airflow rate or capture efficiency	RA3.7.4.3