



INSPECTION GUIDE
SOLAR DOMESTIC WATER HEATING ROOFTOP INSTALLATIONS
30 kWTH OR LESS, ONE- AND TWO-FAMILY DWELLINGS
CITY OF ENCINITAS DEVELOPMENT SERVICES DEPARTMENT
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This document is a field inspection guide for Solar Domestic Water Heating (SDWH) systems. These inspection references detail most of the issues that relate to SDWH systems during the inspection process.

All California Electrical Code (CEC), California Residential Code (CRC), California Building Code (CBC), California Mechanical Code (CMC) and California Plumbing Code (CPC) references are to the 2013 versions unless otherwise noted.

SOLAR DOMESTIC WATER HEATING INSPECTION GUIDE

1. Major components installed match those of certified system.

A. ROOF

2. Roof penetrations/attachments are properly flashed (CBC Chap. 15, CRC Chap. 9)

B. SOLAR LOOP PIPING

3. Piping must be properly supported, hung and anchored per code (CPC 313.1)
4. Solar piping properly insulated
5. Dissimilar materials isolated, as required (CPC 310.6)
6. Penetrations through structural members as per code (CPC 312.2)
7. Penetrations through fire-resistant assemblies installed per code (CPC 1505.2)
8. System has adequate freeze protection (CPC 312.6)
9. System overheat protection (CPC 505.2)
10. Expansion tank sized correctly (indirect system) according to need for operation or overheat protection? (CMC 1005.3, 1005.4)
11. Pressure relief/temperature relief valve(s) installed per design (if applicable) (CPC 608.4 & 608.5)
12. Piping labels show type of fluid and direction of flow (CPC 601.2)
13. Drain and fill valves capped and labeled (CPC 601.2)

C. STORAGE TANK

14. Tank labeled with pressure rating for pressurized storage (CPC 505.4)
15. Relief drain installed properly for pressurized storage (CPC 504.6, CMC 1006.1)
16. Heat exchanger must protect potable water system from being contaminated by the heat transfer medium (CPC 603.5.4)
17. Tank installed in garage meets code requirements (CPC 507.13)
18. Pan installed under tank (as required) (CPC 507.4)
19. Tank installed on level surface (CPC 508.4.3)
20. Tank supported for seismic loads (CPC 507.2)
21. All valves, fittings and solders are rated for potable systems and meeting CA lead law requirements (CPC 604.1)
22. Unions installed within 12" of tank connections for all piping to and from tank and heat exchangers (CPC 609.5)

D. POTABLE PIPING

23. All valves, fittings and solders are rated for potable systems and meeting CA lead law requirements (CPC 604.1)
24. Potable water piping properly labeled (CPC 601.2)
25. Any connection to PEX is more than 18" from tank fittings (CPC 604.13)

- 26. Hot water service piping insulated properly
- 27. Vacuum relief valve properly installed (if required) (CPC 603.5.4, 608.7)

E. CONTROLS

- 28. Control and pump disconnect(s) properly installed (CEC 430 (IX), 690.17)
- 29. Conductors between control and power source properly installed (CEC 430 (II))
- 30. Conductors between control and pump properly installed (CEC 430 (II), 690 (IV))
- 31. Solar collector sensors protected from sun and weather (CEC 310.8 B, D(1), D(2))
- 32. Control relay rated higher than load for each output (CEC 430.83)