

 <p><b>Building Division</b></p>	<p><b>Rainwater Catchment Submittals &amp; Inspection</b></p> <p>City of Palo Alto (CPA)          Building Inspection Division          285 Hamilton Ave.          Inspection Request: 650 329-2496</p>	Revision Date: 01/06/2015
		General Requirements/Checklist for: <b>Residential and Commercial</b>
		Codes Enforced: 2013 CPC Palo Alto Municipal Code (PAMC)
<p>The information provided in this document is general and intended as a guide only. Each project is unique and additional requirements may be enforced as deemed appropriate.</p>		

**RAIN BARREL**

- **Simple rain barrel to landscape system with a discharge capacity of less than 50 gallons per day does not require a permit.**

**SUBMITTALS: Complex System**

**Permits**

The following permits are necessary for the installation of a rainwater catchment system:

- 1) A plumbing permit for rainwater catchment systems.
- 2) An electrical permit for the pump or other electrical controls.
- 3) Building permits for cistern footings, foundations, enclosures and roof structures.
- 4) Site permit or erosion control may be necessary for underground tanks.

**Cisterns**

The following are the minimum requirements for cisterns in the City of Palo Alto:

**General**

- 1) All cisterns shall be listed for use with potable water.
- 2) Cisterns shall be capable of being filled from both the rainwater catchment system and the municipal water system. The municipal system shall be protected from cross contamination by the following:
  - a) A reduced pressure backflow assembly.
  - b) An air gap.

Backflow assemblies shall be maintained and tested yearly.  
 The test results shall be provided to City of Palo Alto WGWS.

**Size** CPAMC

- 1) Any cistern, or total of cisterns used, shall have a minimum capacity of 1,500 gallons.
- 2) For above grade cisterns, the ratio of the cistern size shall not be greater than 1:1 height to width. The ratio for below grade cisterns is not limited.

## **Location** CPC 1702.9.5

- 1) Cisterns may be installed either above or below grade. All cisterns shall be listed for their intended use.
- 2) Below grade cisterns shall be provided with manhole risers a minimum of 8 inches above surrounding grade.
- 3) Above grade cisterns may be located in the following places:
  - a) Basements or crawl spaces
  - b) Garages or Sheds
  - c) Specially constructed sun barriers
- 4) All cisterns shall be installed in accordance with the manufacturer's installation instructions. Where the installation requires a foundation, the foundation shall be flat and shall be capable of supporting the cistern weight when the cistern is full.

## **Protection**

Cisterns shall be protected from direct sunlight. Trees or other vegetation shall not constitute acceptable protection.

## **Inlets, outlets and openings** CPC 1702.9.5.6

- 1) All cistern openings shall be protected from unintentional entry by humans or vermin. Manhole covers shall be secured and locked to prevent tampering.
- 2) Where an opening is provided that could allow the entry of personnel, the opening shall be marked, "DANGER –CONFINED SPACE".
- 3) Cistern outlets shall be located at least 12 inches above the bottom of the cistern.

## **Overflow**

The cistern shall be equipped with an overflow device.

- 1) The overflow device shall consist of a pipe 4 inches in diameter located within 2 inches of the top of the cistern.
- 2) The overflow outlet shall be protected with a screen having openings no greater than .25 inches.
- 3) The CPA and or Public Works shall approve the discharge location of the overflow water.

## **Pump** CPC 1702.9.6

Where a pump is provided in conjunction with the rainwater catchment system the pump shall meet the following provisions:

- a) The pump and all other pump components shall be listed and approved for use with potable water systems.
- b) The pump shall be capable of delivering a minimum of 15psi residual pressure at the highest outlet served. Minimum pump pressure shall allow for friction and other pressure losses. Maximum pressure shall not exceed 80psi.

## **Piping** CPC1617A.2

Piping for rainwater catchment systems shall be separate from any domestic potable piping system. There shall be no direct connection of any rainwater catchment pipe system and any domestic potable water pipe system.

Materials.

- 1) Pipe used to convey rainwater shall be:
  - a) Purple in color and shall conform to ASTM D-2737 (PE3408); or
  - b) Meet the requirements for potable water distribution pipe and be continuously wrapped with purple mylar tape meeting the following requirements:
    - (1) Minimum nominal thickness of .0005 inches,
    - (2) Minimum width of 2 inches,
    - (3) Made of PVC with a synthetic rubber adhesive,
    - (4) Have a clear polypropylene protective coating, and
    - (5) Include the wording, **"CAUTION: RECLAIMED WATER , DO NOT DRINK"**
- 2) Fittings and other system components shall be listed for use in conjunction with specified piping.
- 3) Both piping and fittings shall be installed as required by applicable code and standards.
- 4) All other products entering into the construction of a rainwater catchment system shall be listed as required by code for the purpose intended, and suitable for use in a potable water system.

All rainwater pipe shall be marked **"CAUTION: RECLAIMED WATER, DO NOT DRINK"** every four feet along its length, but in no case less than once per room. The lettering shall be black against a purple background.

Where rainwater pipe and potable water pipe are installed in the same trench, wall cavity or other location, the potable water pipe shall be separated by a minimum distance of twelve inches (12") above and away from the rainwater catchment pipe.

## **Labeling** CPC1702.8

Every water closet or urinal supply, hose bib, trap primer or irrigation outlet shall be permanently identified with an indelibly marked placard stating:

**"CAUTION: RECLAIMED WATER, DO NOT DRINK"**

### **INSPECTION**

- Verify that all requirements for systems have been noted on plans**
- Location of piping and tank corresponds with approved plans.
- Percolation test has been completed and documented by soils engineer.
- Recycled water systems

## **FOR ADDITIONAL REQUIREMENTS**

SEE ATTACHED CODE SECTIONS

- Holding tanks construction per *CPC* 1702.9.5.1
- Valves and piping per *CPC* 604.0 and 606.0
- Color and Information per *CPC* 1617A.2
- Water Reuse Systems, Title 24, Part 11 A 4.305 (Green Building Code)