



## INSPECTION GUIDELINES: JOINT TRENCH

**APPLICABLE CODES:** 2016 CBC, CRC, CPC, CMC, CEC, CALGreen, CEnC, and SMC

*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.*

### IMPORTANT

- Joint trench requirements are for private on-site systems. Sebastopol Public Works has separate requirements for off-site systems; please check with Public Works for those requirements.

### MINIMUM BURIAL DEPTH GENERAL

- Trenches shall be backfilled in thin layers to 12" above the top of the piping with clean earth, which shall not contain stones, boulders, cinder fill, frozen earth, construction debris, or other materials that will damage or break the piping or cause corrosive action. (CPC 314.4, CEC 300.5(F))



**S = SEWER;** Maintain 1/4" per foot

**W = WATER**

**E = ELECTRICAL;** Verify with CEC Table 300.5

and provide a warning ribbon if the conduit is at 18" below grade

**G = GAS**

**C = COMMUNICATION;** No depth requirements

**Figure 063 – Joint Trench**

- Trenches deeper than the footing of a building or structure, and paralleling the same, shall be located not less than 45 degrees from the bottom exterior edge of the footing. (CPC 314.1)

### ELECTRICAL

- See CEC Table 300.5 for electrical wiring/conduit minimum cover requirements
- For underground conductors buried 18" or more below grade, a warning ribbon shall be placed at the trench 12" above the underground installation. (CEC 300.5(D))

## **PLUMBING (SEWER AND WATER)**

- Sanitary sewer and water piping (except as noted below) shall have a minimum burial depth of 12". (CPC 314.4)
- Installation of thermoplastic pipe and fittings shall be made on a trench 1.25 times the outside diameter of the piping plus 12" or the outside diameter of the piping plus 16". (CPC 314.4.1)
- Plastic water piping shall have a blue insulated copper tracer wire or other approved conductor installed adjacent to the piping; the tracer wire shall not be less than 18 AWG and the insulation type shall be suitable for direct burial. (CPC 604.10.1)
- Water pipes shall not be run or laid in the same trench as building sewer or drainage piping constructed of clay or materials that are not approved for use within a building unless the following conditions are met (CPC 609.2):
  - The bottom of the water piping shall not be less than 12" above the top of the sewer or drain line.
  - The water pipe shall be placed on a solid shelf excavated at one side of the common trench with a clear horizontal distance of not less than 12" from the sewer or drain line.

## **PLUMBING (GAS)**

- Underground gas piping shall be installed with a cover of not less than 12". Where external damage to the pipe or tubing is likely to result, the cover shall not be less than 18". (CPC 1210.1.1)
  - For plastic piping, an electrically continuous corrosion-resistant tracer wire (not less than 14 AWG) or tape shall be buried with the plastic pipe to facilitate locating. (CPC 1210.1.7.2)

## **COMMUNICATION**

- No depth requirements

**Table 300.5 Minimum Cover Requirements, 0 to 1000 Volts, Nominal, Burial in Millimeters (Inches)**

Location of Wiring Method or Circuit	Type of Wiring Method or Circuit									
	Column 1 Direct Burial Cables or Conductors		Column 2 Rigid Metal Conduit or Intermediate Metal Conduit		Column 3 Nonmetallic Raceways Listed for Direct Burial Without Concrete Encasement or Other Approved Raceways		Column 4 Residential Branch Circuits Rated 120 Volts or Less with GFCI Protection and Maximum Overcurrent Protection of 20 Amperes		Column 5 Circuits for Control of Irrigation and Landscape Lighting Limited to Not More Than 30 Volts and Installed with Type UF or in Other Identified Cable or Raceway	
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
All locations not specified below	600	24	150	6	450	18	300	12	150	6
In trench below 50 mm (2 in.) thick concrete or equivalent	450	18	150	6	300	12	150	6	150	6
Under a building	0	0	0	0	0	0	0	0	0	0
	(in raceway or Type MC or Type MI cable identified for direct burial)						(in raceway or Type MC or Type MI cable identified for direct burial)		(in raceway or Type MC or Type MI cable identified for direct burial)	
Under minimum of 102 mm (4 in.) thick concrete exterior slab with no vehicular traffic and the slab extending not less than 152 mm (6 in.) beyond the underground installation	450	18	100	4	100	4	150	6	150	6
							(direct burial)		(direct burial)	
							100	4	100	4
							(in raceway)		(in raceway)	
Under streets, highways, roads, alleys, driveways, and parking lots	600	24	600	24	600	24	600	24	600	24
One- and two-family dwelling driveways and outdoor parking areas, and used only for dwelling-related purposes	450	18	450	18	450	18	300	12	450	18
In or under airport runways, including adjacent areas where trespassing prohibited	450	18	450	18	450	18	450	18	450	18

**Notes:**

1. Cover is defined as the shortest distance in millimeters (inches) measured between a point on the top surface of any direct-buried conductor, cable, conduit, or other raceway and the top surface of finished grade, concrete, or similar cover.
2. Raceways approved for burial only where concrete encased shall require concrete envelope not less than 50 mm (2 in.) thick.
3. Lesser depths shall be permitted where cables and conductors rise for terminations or splices or where access is otherwise required.
4. Where one of the wiring method types listed in Columns 1 through 3 is used for one of the circuit types in Columns 4 and 5, the shallowest depth of burial shall be permitted.
5. Where solid rock prevents compliance with the cover depths specified in this table, the wiring shall be installed in metal or nonmetallic raceway permitted for direct burial. The raceways shall be covered by a minimum of 50 mm (2 in.) of concrete extending down to rock.