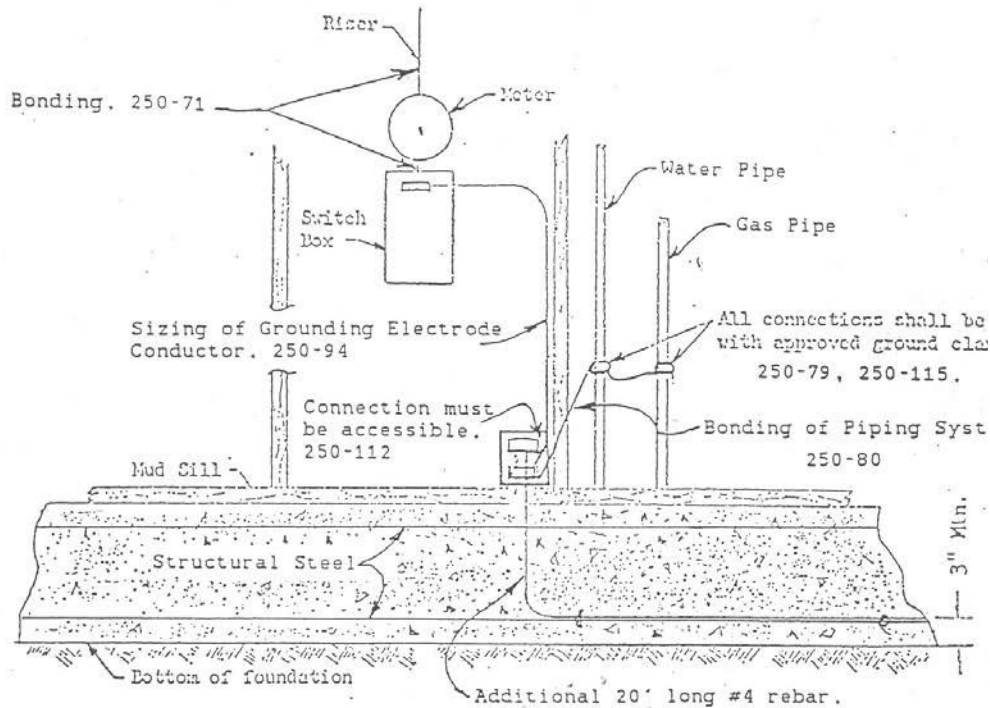




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**Grounding Electrode System-Concrete Encased Electrode
(UFER)
2025 California Electrical Code (CEC)**



SECTION 250.52 (3) Concrete-Encased Electrodes. A concrete-encased electrode shall consist of at least 6.0 (20 feet) of either (1) or (2).

- (1) One or more bare or zinc galvanized or other electrically conductive coated steel reinforced bar or rods of not less than 13 MM (1/2 in) in diameter, installed in one continuous 6.0 M (20 ft.) length, or if in multiple pieces connected together by the usual steel tie wires, exothermic welding, welding, or other effective means to create a 6.0 m (20 ft.) or greater length: or Bare copper conductor not smaller than 4 AWG
- (2) Metallic components shall be encased by at least 50 mm (2 inches) of concrete and shall be located horizontally within that portion of a concrete foundation or footing that is in direct contact with the earth or within vertical foundations or structural components or members

that are in direct contact with the earth. If multiple concrete-encased electrodes are present at a building or structure, it shall be permissible to bond only one into the grounding electrode system.

- (3) Concrete installed with insulation, vapor barriers, films, or similar items separating the concrete from the earth, is not considered to be in “direct contact” with the earth