

Electrical Service Panel Upgrades



An electrical permit and inspection are required to upgrade the main electrical service panel of homes; no plans are required. Requirements for the upgraded electrical service panel are outlined below:

<p>Load calculations and undergrounding conduit are generally not required</p>	<p>Load calculations and undergrounding the main service entrance conduit are generally not required unless:</p> <ul style="list-style-type: none"> ▪ Additional load is being added and the inspector requires the calculations ▪ The existing service entrance is underground or if PG&E or the Building Division determine the need to underground the service entrance
<p>Service panel installation requirements</p>	<ul style="list-style-type: none"> ▪ <i>Required meter height</i> - 36 to 75 inches above ground ▪ <i>Required clear space in front of service panel</i> - 30 inches wide by 36 inches deep with a minimum headroom clearance of 6 feet-6 inches
<p>Circuit breakers</p>	<ul style="list-style-type: none"> ▪ The circuit breaker brand must be listed and approved for use as stated on the panel label. ▪ A multi-wire circuit (3-wire, 120/240 volt circuit) requires a handle-tie on the circuit breakers. This is common where the wiring serves both the garbage disposal and the dishwasher. ▪ Existing breakers must be replaced with GFCI or AFCI only if receptacles are being replaced OR wiring is being added or extended.
<p>Grounding</p> <p><i>Refer to CEC Table 250.66 to size the conductors</i></p>	<ul style="list-style-type: none"> ▪ If the water piping system is the sole grounding source, then a supplemental electrode must be installed. ▪ If using only a single ground rod, a verification document from the contractor stating a resistance to earth of 25 ohms or less at the property is needed prior to final approval. ▪ A minimum 5/8" ground rod must be buried at least 8 feet in the ground. Locate the ground rod as close as practicable to the electric service.
<p>Bonding the water piping system</p> <p><i>Refer to CEC Table 250.122 to size the conductors</i></p>	<p>The water piping system must be bonded as follows:</p> <ul style="list-style-type: none"> ▪ <i>If main water service piping to the house is metallic</i> - Accessible bonding must occur within 5 feet of where the water service enters the house. ▪ <i>If main water service piping is non-metallic</i> - The cold water piping system may be bonded at any accessible location. Piping is commonly bonded at the water heater. ▪ The hot and cold water piping systems are effectively bonded together via the brass plumbing mixing valves at tubs and showers, etc. The City accepts a single bond to the cold water piping only; an independent bonding jumper to the hot water piping is not required.
<p>Bonding the gas piping system</p>	<p>The gas piping system must be bonded as follows:</p> <ul style="list-style-type: none"> ▪ <i>If gas appliances are available</i> - The gas piping is bonded via the grounding conductor in the branch circuit to the gas appliances ▪ <i>If the electrical system does not contain equipment grounds</i> - The gas piping system must be bonded externally with a bonding jumper (same as water pipe). ▪ Gas bonding shall only be connected to the house side of the gas meter.

REFERENCE

California Electrical Code (CEC) Electrical service panel installations must conform to this code.

HOW TO GET AN ELECTRICAL PERMIT

Either the homeowner or a state-licensed contractor may obtain a permit. Visit the Permit Center or save \$40 and obtain an online permit: www.sjpermits.org

GOT QUESTIONS?

For questions for a building inspector regarding permits, codes, inspections or plan review, send an email or voicemail and we'll respond within two business days:

Email
Infoinspector@sanjoseca.gov
Voicemail
408-535-7641

San José Permit Center

San José City Hall
200 E. Santa Clara St.
San José, CA 95113
408-535-3555

www.sanjoseca.gov/building