Is Your Electrical Panel Ready for More Power?

Many homeowners wonder whether their existing electrical panel can handle a new appliance, a home addition, or a growing family's power needs. A panel that is too small for the load it supplies can trip breakers regularly, run hot, and in extreme cases create a fire hazard. The good news is that there are clear signs you can look for, and a handful of simple checks that do not require opening the panel or touching live wires.

What the main breaker tells you

The service size of your home is stamped on the main breaker, the big switch at the top of the panel. Common residential sizes are 100, 125, 150, and 200 amps. If every time you run the air conditioner and the microwave together the main breaker trips, your service capacity is already maxed out. That is a direct signal that an **electrical service upgrade** may be needed before you add anything else.



Even if the main breaker does not trip, a panel that is constantly near its rated capacity leaves no room for future additions. A licensed electrician can perform a load calculation, adding up

the wattage of all lights, outlets, and appliances against the panel's rating, to see how much headroom you actually have. This is a standard part of any electrical panel replacement in Santa Clara assessment, and it gives you a factual answer, not a guess.

Counting slots and seeing double taps

Open the panel door (do not remove the deadfront) and look at the breaker slots. A panel that is completely full, with every slot occupied, is at physical capacity. Some homeowners respond by using tandem breakers or double-tapping a single breaker, putting two wires under one screw. Both practices are dangerous and against code in most jurisdictions. A full panel with no empty slots is a strong hint that an upgrade or a subpanel is the right next step.

A subpanel is a smaller secondary panel fed from the main one. It can add circuits without replacing the main panel, but it does not increase the service size. If your main service is 100 amps and you need 150, a subpanel alone will not fix it. You would need a full service upgrade.



Signs of overheating or age

Feel the panel cover with the back of your hand. If it feels warm to the touch when the house is under a normal load (not during a heat wave or after a party), the panel may be running too hot. Overheating accelerates the degradation of breakers and wiring. Also look for discoloration around any breaker or at the service entrance cable. Rust, corrosion, or a musty smell inside the panel indicate moisture intrusion, which is a separate problem that also demands professional attention.

Panel age matters too. If your home still has an old fuse box or a panel made by a manufacturer that went out of business decades ago, replacement is often the safest choice. Modern panels have better thermal protection, arc-fault breakers, and more room for circuits.

New loads that push the envelope

The most common reason homeowners discover they need more capacity is a major new appliance. An electric vehicle charger can draw 40 to 60 amps by itself. A heat pump or a whole-house heat-pump water heater adds another significant load. If you are planning one of these, or have already bought one, check the nameplate rating and add it to your existing load calculation. If the sum exceeds 80% of your main breaker rating, a standard safety margin, you are looking at an **electrical service upgrade**.

Some upgrades can be handled by installing a dedicated circuit for the new appliance and shifting other loads around. But when the main service itself is undersized, the only fix is to replace the service entrance cable, the meter base, and the panel. That is a job for a licensed electrician and usually requires coordination with the utility company.

How to check before you buy

If you are shopping for an EV charger, a heat pump, or even a large air conditioner, ask the installer for a load calculation before you commit. Many contractors will run the numbers as part of a free estimate. You can also look at your utility bill for your highest monthly kilowatt-hour usage and compare it to your panel's capacity. A very rough rule of thumb: a 100-amp panel at 240 volts can supply about 24,000 watts continuously. If your peak demand is approaching that, you are near the limit.

For a more precise picture, a qualified electrician can clamp a meter on the main service conductors and record actual current draw over a week. That data shows real-world usage, not theoretical maximums, and tells you exactly how much headroom you have.

When replacement is the straightforward answer

If your panel is full, old, warm to the touch, and you are planning a big new load, the math usually points to a full upgrade. An **electrical panel replacement in Santa Clara** often involves upgrading the service from 100 to 200 amps, installing a new meter main combination panel, and bringing all branch circuits up to current code. It is a significant project, but it solves the capacity problem for decades and adds resale value to the home.

Some homeowners try to postpone the expense by plugging loads into different circuits or running extension cords. That is a temporary workaround at best and a safety hazard at worst. A dedicated circuit for a big appliance is always the right approach, and if the panel cannot accept another breaker, the panel itself has to grow.



What you can do safely yourself

- Look at the main breaker rating and count how many breaker slots are empty.
- Feel the panel cover for warmth under normal load.
- Check for rust, discoloration, or a musty smell around the panel.
- Get a load calculation from an electrician before you buy a major new appliance.

None of these checks require removing the deadfront or touching any live parts. If you see any sign of trouble, heat, corrosion, a full panel, or a main breaker that trips frequently, call a licensed electrician to assess the situation. They can confirm whether an upgrade is needed and give you a safe, code-compliant path forward.

Knowing your panel's capacity is not complicated, but it does require paying attention to a few details. The main breaker rating, the number of empty slots, the temperature of the panel, and the size of any new loads you plan to add all factor into the answer. When the numbers say you are out of room, an electrical service upgrade is the durable solution.