



General Electrical Information

CITY OF HEMET BUILDING DIVISION
445 E FLORIDA AVENUE, HEMET, CA 92543
(951) 765-2475

GENERAL

Permits are required before starting work. Permits are available to owners of the property or duly licensed contractors.

Permits become null and void if work authorized is not commenced within 180 days of the issuance or if such work is suspended or abandoned at any time after the work is commenced for a period of 180 days.

All work shall comply with the National Electrical Code and the Electrical Regulations of the Hemet Municipal Code.

No work shall be covered or energized without first having been inspected and approved.

It is recommended that spare electrical capacity be installed initially to allow for the addition of future electrical appliances at minimum costs.

WHO CAN OBTAIN PERMITS

Permits shall be issued to duly licensed contractors. However, a homeowner can obtain a permit to do the construction, alteration or repair of the dwelling and accessory buildings.

Contractors working in the City of Hemet are required to have a City of Hemet business license.

WHEN IS A PERMIT NEEDED?

No new electrical installation shall be made nor any alteration or addition performed to any existing wiring, nor shall any wiring for the placing or installation of any electric light, power or heating device, or any apparatus which generates, transmits, transforms or utilizes electricity operating at a voltage exceeding twenty-five volts between conductors or capable of supplying more than fifty watts, be made without first obtaining an electrical permit.

Exception:

Exception to requirement.

No permit shall be required in the following cases:

1. Electric wiring expressly declared to be exempt from the provisions of this chapter by any other section hereof;

2. Repair or replacement of any fixed motor of the same rating on the same machine or the repair or replacement of any fixed electrical appliance of the same rating in the same location;
3. Repair or replacement of current carrying parts or any switch, contractor or control device;
4. Reinstallation of attachment wall plug receptacles or wall switches but not the outlet therefore;
5. Repair or replacement of any over current device or lamp holder of the same rating and in the same location;
6. Repair or replacement of electrodes or transformers for signs or marquees;
7. Repair or replacement of cords or cables or cord pendants allowed by other sections of this chapter;
8. Taping of joints;
9. Removal of electric wiring;
10. Any similar minor repair or replacement determined by the building official to involve any hazard to life or property;

The foregoing exemptions from permit requirements shall not be deemed to permit or allow any electric wiring to be done in a manner contrary to other provisions of this chapter, nor to permit such work to be done by unauthorized or unlicensed person or persons.

Installation

All electrical materials and equipment shall be new and approved for the intended use and location by a recognized testing laboratory such as Underwriters' Laboratories, Electrical Testing Laboratories, or Factory Mutual. Used construction materials shall not be installed without special permission obtained in advance.

Conduits, cable assemblies, boxes, cabinets, and fittings shall be securely fastened in place. Conduits and cable assemblies shall be continuous from outlet to outlet and from fitting to fitting.

Where cables run through holes in studs, joists or similar wood members, holes shall be bored at the approximate center. Where there is no structural objection, armored cable or non-metallic sheathed cable shall be protected against the penetration of driven nails by covering the notch with a steel plate at least 1/6 inch thick before building finish is applied.

There shall be no splices within the conduits. An approved box shall be installed at each outlet, switch, or junction of conduit, electrical metallic tubing, armored cable, or non-metallic sheathed cable. At least 6 inches of wire, measured from the face of the box shall be left at each outlet and switch point for making up joints for the connection of fixtures or devices. Splices shall be made electrically and mechanically secure and be covered with an approved insulated solderless connector.

Wires shall be of adequate size for supplying their connected load. Wires shall be considered as properly protected when the fuse or circuit breaker is set at a rating that does not exceed the allowable current carrying capacity of the wire.

Interior wiring systems shall be polarized and all wires shall be an approved type having an insulating, flame-retardant covering. Wires used as neutral conductors of circuits shall have white insulation. Green insulation shall be used for grounding conductors only. Wires shall not be smaller than No. 14AWG. Wires used in wet location shall be TW, RW or other approved type.

Metal raceways, cable armor, and fittings shall be grounded. Metallic outlet boxes, lighting fixtures, and appliances with exposed non-current-carrying metal parts shall be grounded. These shall be metallicity joined together into a continuous electrical conductor so as to provide effective electrical continuity to ground.

INSPECTIONS REQUIRED

Inspection and approval of wiring prior to energizing.

1. All electric wiring, as defined in this chapter, for which a permit is required, must be inspected and approved before being energized or used.
2. No person shall use, operate or maintain, or cause or permit to be used, operated or maintained, any such electric wiring until such inspection and approval.
3. No serving agency shall furnish or supply or cause or permit to be furnished or supplied, electric energy to any such electric wiring until such inspection and approval.
4. Nothing contained in this section shall be construed to prohibit the temporary use of electric energy when and as specifically provided in this chapter.
5. Nothing contained in this section shall be construed to prohibit the inspection of any electric wiring even though no permit is required therefore.

If approval is withheld, a written notification showing the date, location of defect in the work, with the signature of the inspector, shall be sent to the permittee or posted on the premises. Failure of the permittee to make such corrections within ten days after notification thereof is sufficient cause for refusal to issue any further permits to the permittee until such corrections have been made.

INSPECTION OF NEW WORK

No person shall conceal, enclose or cover, or cause or permit to be concealed, enclosed or covered, any portion of any electric wiring in any manner which will interfere with or prevent the inspection and approval thereof.

1. Any portion of any floor, ceiling, wall, partition, roof, finish or other obstruction whatsoever which renders impracticable the making of a complete and thorough inspection of electric wiring shall be removed upon notice (either verbal or in writing) to do so, and shall be kept removed until such electric wiring has been inspected and approved.
2. The provisions of this section shall not apply to finished work, nor to conductors inserted in conduit or other wiring enclosures.
3. Before a final inspection of any electric wiring, all plaster, concrete or other foreign material shall be thoroughly removed from every box and wiring enclosure, and not less than six inches of conductors shall extend out of each lighting outlet box for future connection thereto, except when conductors are intended to loop through the lamp holder.
4. In any case where one or more taped joints are found not soldered at the time of inspection, the inspector may require every joint for such electric wiring to be left untaped until the inspection and approval thereof.
5. Fixtures or appliances shall not be connected to electric wiring until the rough wiring has been inspected and approved except as otherwise satisfactory to the building official.
6. All such wiring shall be free from grounds, shorts, or other defects, before approval thereof.
7. Whenever any electric wiring has been inspected and found to comply with the provisions of this chapter, the inspector shall leave a notice at the service switch or other suitable place so stating, and the building official shall issue a certificate of inspection when requested, or service permit authorizing the connection to the electrical service and the energizing of the installation.

WIRING METHODS

Non-metallic sheathed cable may be used where it is totally concealed within wood frame walls or attic spaces. Non-metallic cable shall not be used in cabinets, wet or damp locations, nor as portable cables. In attics, mechanical protection of cables is required within 6 feet of scuttles and mechanical equipment. Non-metallic sheathed cable shall be secured at intervals not to exceed 4 feet 6 inches and within 12 inches of every outlet box or fitting. A change from non-metallic sheathed cable to a metal-protected wiring system shall be made in an accessible metallic junction box. Non-metallic sheathed cable shall be of the type having grounding wire in addition to the energized wires.

Armored cable may be used if properly protected from mechanical injury. Armored cable may be used for both exposed and concealed work in dry locations. At all points where the armor terminates, an approved insulating bushing shall be secured and protected in a manner similar to non-metallic sheathed cable. A change from armored cable to another wiring system shall be made in an accessible metallic junction box.

Flexible metal conduit, not less than 1/2 inch electrical trade size, may be used if properly protected from mechanical injury. Flexible metal conduit shall be secured by an approved means at intervals not exceeding 4 feet 6 inches and within 12 inches of every outlet box or fitting. All ends shall be reamed or burred to remove rough edges. Bends of flexible metal conduit shall be made so that the conduit will not be injured. A run of flexible metal conduit shall not contain more than four quarter bends between outlets or fittings. A grounding conductor (green) shall be provided whenever the length of run exceeds six feet.

Outlet, switch and junction boxes, fittings and cabinets shall be securely fastened in place. Non-metallic boxes may be used only with a non-metallic wiring system. Metallic boxes used with non-metallic wiring systems shall be grounded. Boxes and fittings installed in damp or wet locations shall be weatherproof. Outlet boxes for concealed work shall have a depth of at least 1-1/2 inches. Conduits or cables entering boxes shall be secured with approved clamps or connectors. Where non-metallic outlet boxes are used with non-metallic sheathed cable, the clamping of individual cables to the box is not required if the cable is secured within 8 inches of the box.

Each outlet of the junction box shall be provided with

a cover. Unused openings in boxes and cabinets shall be effectively closed by a metal plug. In walls or ceilings constructed of wood or other combustible material, outlet boxes and fittings shall be flush with the finished surface. In walls of non-combustible materials, boxes and fittings shall be installed so that the front edge of the box or fitting will not set back more than 1/4 inch. Junction boxes shall be installed in an accessible location having a minimum headroom clearance of not less than 2 feet.

BRANCH CIRCUITS

Each single-family dwelling should be provided with one or more lighting branch circuits of 15 or 20 amperes in rating.

In every livable room including kitchen, family, dining, and bedroom, a general use receptacle outlet shall be installed in walls so that no point along the floor line in any wall space is more than 6 feet, measured horizontally, from an outlet in that space, including any wall space 2 feet or more in width and the wall space occupied by sliding panels in exterior walls. A receptacle outlet is required to be located at each kitchen counter 12 inches or more in width and adjacent to each lavatory sink.

Each dwelling unit shall have not less than two small appliance receptacle branch circuits for the supply of receptacle outlets located in the kitchen. Small appliance receptacle outlets are those located in the kitchen, service porch, pantry, laundry room or area, dining room or area, breakfast room or area. Receptacle outlets or branch circuits located in other rooms or areas are considered as convenience receptacle outlets. Small appliance branch circuits shall not supply convenience receptacle outlets, lighting outlets, or fixed appliances. A branch circuit supplying only convenience receptacle outlets may also supply lighting outlets and fixed appliances.

Each dwelling unit shall be provided with an individual 20 ampere branch circuit for a receptacle outlet installed adjacent to a laundry tray or other plumbing suitable for a washing machine.

GROUND FAULT CIRCUIT INTERRUPTERS

Receptacles installed to serve kitchen counter tops shall have ground-fault circuit interrupter protection.

Receptacles installed in bathrooms, garages, basements and those installed outdoors shall have ground-fault circuit interrupter protection.

A ground-fault circuit interrupter is a device intended for the protection of personnel. It functions to de-

energize a circuit, or portion thereof, within an established period of time when a current to ground exceeds some predetermined value that is less than that required to operate the overcurrent protection (circuit breaker) device of the supply circuit. In other words, the ground fault circuit interrupter is a very sensitive device which protects a person from receiving an electrical shock, whereas a circuit breaker is a slower acting device which only protects the electrical circuit from burning up.

RESIDENTIAL GARAGE AND BASEMENTS

At least one receptacle outlet in addition to any provided for laundry equipment shall be installed in each attached garage, basement, and in each detached garage with electrical power.

All receptacles located inside and on the exterior wall of the garage or basement shall have ground-fault circuit interrupter protection, except for the laundry equipment receptacle.

At least one wall switch-controlled lighting outlet shall be installed in the attached garage or basement and its outdoor entrances.

All 125 volt 15-20 ampere receptacle in a basement shall have ground-fault circuit interrupter protection.

MINIMUM REQUIREMENTS FOR INDIVIDUAL APPLIANCE BRANCH CIRCUITS

<u>Type of Appliance</u>	<u>Branch Circuit Rating</u>
Electrical range	50 amperes
Kitchen counter top small appliance branch circuit	20 amperes
Counter-mounted electric cooking unit	30 amperes
Dish Washer	15 amperes
Garbage Disposal	15 amperes
Sub Panels	30 amperes
Wall-mounted electric oven	30 amperes
Electric clothes dryer	30 amperes
Washing machine or laundry area	20 amperes

Appliance branch circuits, including conductors, circuit breakers or fuseholders, switches, and the like shall not supply a load greater than 80 percent of the branch circuit rating.

Minimum Size Service

1. Single Family Dwelling with 6 or more 2 wire branch circuits 100 amp, #4 THW copper or #2 THW aluminum wire.
2. Single Family Dwelling with a computed load of 10KW - 100 amp, #4 THW copper wire.
3. Other loads - 60 amps, #6 THW copper or #4 THW aluminum wire.
4. For exceptions, see 1996 N.E.C., Art. 230-41.

The service head and meter shall be installed where directed by serving agency and shall be so located that the service drop may be installed with only one point of attachment without crossing over adjacent premises. The service drops for dwellings shall be not less than 10 feet above the ground and provide 12 feet clearance for service drops over private driveways.

Service equipment shall be installed at the nearest readily accessible point to the entrance of the service wires. The maximum height of the service switch or circuit breaker handle shall not exceed 6 feet 6 inches above ground and shall have a clear working space of 3 feet deep and 30 inches wide in front.

The service raceway enclosure and interior wiring system shall be bonded in an approved manner and the grounding shall terminate in an approved accessible ground clamp attached to a continuous cold water piping system. Bonding jumpers shall be installed where the double locknut type connection is used. Where cold water system is used as service grounding, a ground rod shall be provided to be driven eight feet vertically into the earth and shall be mechanically bonded to the cold water system in an approved manner.