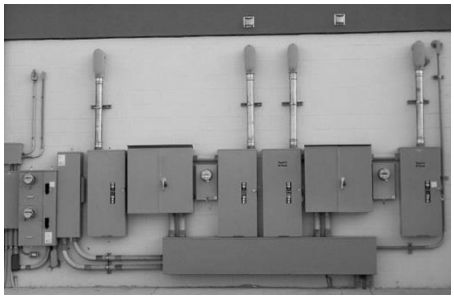
DEPARTMENT OF LABOR AND INDUSTRY

Number of Electrical Services Permitted for Buildings



These requirements apply to residential and non-residential properties, including strip malls, row housing, condominiums, townhomes, and multi-occupancy commercial/industrial office/warehouse buildings. Compliance problems may often be avoided by providing a common readily accessible service to serve the entire building.

National Electrical Code (NEC) Section 230.2 states that a building or other structure served shall be supplied by only one service, with certain limited exceptions. This generally prohibits the installation of more than one set of (service drop or lateral) conductors **-or more than one set of** (overhead or underground service) conductors to a building or structure, including multifamily and other multi-occupancy buildings.

Summary of Electrical Installation Requirements

- Only one service drop, set of overhead service conductors, set of underground service conductors, or service lateral is allowed to serve a building, unless the installation falls under one or more of the conditions mentioned in NEC Section 230.2.

- Occupancies that are cut off from adjoining structures by fire walls as discussed above for IBC buildings may have more than one service drop, set of overhead service conductors, set of underground service conductors, or service lateral.

- Multiple occupancy buildings may have service entrance conductors extended from the service drop, set of overhead service conductors, set of underground service conductors, or service lateral, but to only one location in each occupancy.

- The terms "condominium" and "townhome" describe different occupancies determined by the architect or local building official. Townhouses will be classified as IRC-3. Condominiums (apartments) will be classified as R-2. Townhouses are permitted to have a service to each dwelling unit. Condominiums are built the same as apartments. The only difference is ownership for condominiums, rent for apartments.

- A service is permitted to have no more than six service disconnects grouped in one location.

- For occupancies meeting the IRC requirements as a one-family dwelling or townhouse -Each dwelling unit is considered as a separate building and is required to have its own service -a service drop, set of overhead service conductors, set of underground service conductors, or service lateral, or not more than two sets of service entrance conductors.

- Structures designated as R-2 are buildings comprised of three or more dwelling units. Each occupancy of an R- 2 building is within the same building, and only one set of (service drop or lateral) conductors -or one set of (overhead or underground service), is permitted to serve the entire building unless one or more of conditions mentioned in NEC Section 230.2 apply.

- Unless a multi-occupancy building has management supervisory personnel continuously on-site, each tenant must have ready access to the service equipment serving their space. In all cases, each tenant must have ready access to the circuit breakers or fuses for wiring in their space. The circuit breakers or fuses for one occupant's space are not permitted to be located in another tenant's space.

Additional information

The following definitions, based on NEC Article 100, are relevant to this requirement:

Building A structure that stands alone or that is cut off from adjoining structures by fire walls with all openings therein protected by approved fire doors. It is important to understand the meaning of the term "adjoining structures", *as discussed following this "definitions" section*.

Service The conductors and equipment for delivering energy from the electricity supply system to the wiring system of the premises served.

Service Point The point of connection between the serving utility and the premise wiring.

Service Drop The overhead conductors between the utility electric supply system and the service point.

Service Lateral The underground conductors between the utility electric supply system and the service point.

Service Conductors, Overhead The overhead conductors between the service point and the first point of connection to the service-entrance conductors at the building or other structure.

Service Conductors, Underground The underground conductors between the service point and the first point of connection to the service-entrance conductors in a terminal box, meter, or other enclosure, inside or outside the building wall.

Service Equipment The necessary equipment, usually consisting of a circuit breaker(s) or switch(es) and fuse(s) and their accessories, connected to the load end of service conductors

to a building or other structure, or an otherwise designated area, and intended to constitute the main control and cutoff of the supply.

Service-Entrance Conductors, Overhead System The service conductors between the terminals of the service equipment and a point usually outside the building, clear of building walls, where joined by tap or splice to the service drop or overhead service conductors.

Service-Entrance Conductors, Underground System The service conductors between the terminals of the service equipment and the point of connection to the service lateral or underground service conductors.

Structures built to the International Building Code (IBC)

Adjoining occupancies may be considered to be separate buildings or structures only where the separating walls between the occupancies meet the requirements for separation of adjoining structures, as set forth in the International Building Code (IBC), which is adopted by reference in the State Building Code (SBC).

The IBC sets fire resistance requirements for exterior walls of structures which are dependent on the distance of the structure from the property line, including zero lot line conditions where structures adjoin the lot line.

Where two structures with zero lot lines adjoin each other the structures are required to be separated by two fire-rated exterior wall assemblies, one on each side of the property line. In the case of adjoining occupancies on the same property, a property line may be assumed to exist and those occupancies considered separate structures if the adjoining parts of the structures have the required fire resistance rating.

A separate service drop or lateral or a separate set of overhead or underground service conductors is permitted to serve adjoining structures only where the fire-resistance rating requirements have been met.

The following types of separations may exist between adjoining occupancies:

Fire Walls. Vertical assemblies (walls) only with two, three, and four-hour fire resistive construction used to divide buildings into separate areas based on use and type of construction.

Fire walls are also used to separate different types of constructions and the protection of penetrations and openings in the walls is required. Occupancies separated by fire walls are not separate buildings and are not permitted to have more than one service drop or lateral or one set of overhead or underground service conductors

Occupancy Separations. Vertical or horizontal (ceiling) assemblies of one-hour, two-hour, three-hour, or four-hour fire resistive construction used to separate different uses within a building.

Occupancies separated by occupancy separations are not separate buildings and are not permitted to have more than one service drop or lateral or a separate set of overhead or underground service conductors.

Exterior Wall Protection to Property Line. One-hour or two-hour fire resistive construction or four-hour for Group H is required to protect exterior walls, and openings in the walls, at property lines when the distance from property line is less than that specified by the IBC.

Tenant Separations. Generally used to separate tenants from each other, each tenant space is not on its own lot and property lines are not present between tenant spaces. Example: A one story structure with four-2,000 sq. ft. retail occupancies in a single building which is a Group M occupancy.

The retail occupancies are separated from each other with walls that are not required to be fire-resistive. Protection of wall penetrations is not required.

Occupancies separated by “tenant separations” are not separate buildings and are not permitted to have more than one service drop or lateral or a separate set of overhead or underground service conductors.

Structures built to the International Residential Code (IRC)

Two attached dwelling units are permitted to be constructed as a “two-family dwelling.” The dwelling units can be side-by-side or one over of the other. The dwelling units are required to be separated by a one-hour fire-resistive wall or floor/ceiling assembly.

Penetrations in the separation between dwelling units are required to be protected and openings into a garage are required to be protected. There are exceptions to the wall or floor/ceiling fire rating for fire sprinklers and wall extensions through the attic between units. These buildings are classified as IRC-2 occupancies and are not permitted to have more than one service drop or lateral or a separate set of overhead or underground service conductors.

Two or more single family attached dwelling units, are also permitted to be constructed as "townhouses” and must have two one-hour or one two hour fire resistive wall separating the dwelling units from each other.

The units must be side-by-side. Penetrations in the separation between dwelling units ~~is~~ and openings into a garage are required to be protected. In this case each dwelling is a separate building. Example: A structure with four single family dwellings appears to be a single building but is actually four separate buildings which are attached at the foundation, exterior finish, and roof.

Dwellings separated as described above are separate buildings and are required to have separate a separate service drops or laterals or a separate set of overhead or underground service conductors. Electrical wiring for or from one dwelling unit is not permitted to pass through nor enter another dwelling unit. These buildings are classified as IRC-3 occupancies.

Two or more sets service drops or laterals or a separate set of overhead or underground service conductors are permitted to serve one building or structure only if the installation conforms to one or more of the conditions mentioned in Section 230.2. Where an exception requires special permission, such permission may only be granted by written request to the Construction Codes Division or the electrical inspection authority having jurisdiction. Special permission can only be requested prior to the subject installation and will be granted only where there is a substantial reason to do so.

The general rule in NEC Section 230.40 requires that a service drop or service lateral or a separate set of overhead or underground conductors to supply only one set of service entrance conductors, with two exceptions:

Exception No. 1 allows one set of service entrance conductors to be extended to each occupancy or several occupancies of a multiple occupancy building.

Exception No. 2 allows one set of service entrance conductors to be extended to each of several service equipment enclosures that contain no more than a combined total of six service disconnects.