

# Commercial Trades Permit Document Submission Requirements

## Electrical

- Clear, legible electrical floor plan showing lighting fixtures and schedules, symbol legend, equipment schedules, receptacle locations and all branch circuits. Number the branch circuits and identify each branch circuit's home-run
- Service riser diagrams including:
  - Size of feeder conductors and insulation types, conduits and over-current protection
  - Connections and sizes of emergency or stand-by generators (If the generator neutral will be switched, provide a main grounding at the generator)
  - Fire and jockey pumps
  - Rating of the transformers (kilovolt-amperes), primary and secondary conductor sizes, voltage levels, grounding conductor sizes, (stating "grounding per NEC" is insufficient) and the primary and secondary over-current protection sizes
  - Size of motors, air conditioners and their branch circuit conductors and over-current protection
  - Main grounding at the service to include type of main grounding electrodes, type of supplementary grounding electrodes, size of the electrode grounding conductors and where they terminate at the service location (stating "grounding per NEC" is insufficient)
- Exit, emergency and battery pack lighting locations and branch circuits
- Size, location and identification of all new and existing electrical panels and equipment
- All panel schedules must include the following:
  - Size of panels, phases and voltage levels.
  - Breaker/fuse and conductor sizes of each branch circuit.
  - Size of the panel's main circuit breakers or fuses.
  - Indicate if panels are main circuit breakers (MCB) or main lugs only (MLO). If MLO, provide the size of the main over-current protection that protects the feeders that supply the MLO panels.
  - Load calculations in kilovolt-amperes, kilowatts or amperes. Break the loads into total connected and demand loads, continuous and non-continuous loads. (Indicating only the branch circuit, circuit breaker or fuse sizes does not constitute load calculations)
  - Identify the loads connected to each panel, branch circuit, circuit breaker or fuse.
- Completed Electrical Energy Certification Form; attach one to each set of drawings.

## Plumbing

- Minimum required plumbing facilities.
- Provide floor plans (plan view) and riser diagrams showing the location of all plumbing fixtures, sanitary, water, storm and gas piping. Identify size, slope and type of piping material and location of all required valves.
- Fixture connection schedule including waste, vent, gas, hot and cold water connection sizes. Identify all fixture symbols used on the plans and risers. Include backflow preventers and other water control equipment.
- Water pipe calculations
- Storm-water drainage calculations and riser diagrams

## Mechanical

- Symbol and abbreviation list identifying all components of the proposed mechanical system(s).
- Two copies of calculations and information demonstrating compliance with ASHRAE standard 90.1 (energy standard for all buildings except low-rise residential). The signed and sealed print-out of the above standard's computer program is acceptable.
- Sufficient details of the air distribution system demonstrating compliance with the Underwriters Laboratories design numbers of the required fire-rated floor/ceiling and/or roof/ceiling assemblies.
- Details for boilers showing all required safety devices.
- Fire and smoke dampers and fire/smoke detection devices.
- For smoke removal/control systems, a sequence of operation and a narrative description of the functioning of the smoke purge system, a broad conceptual outline of how the system is designed to function under a variety of possible fire conditions, upper floor involvement, atriums and other areas. Show the interrelationship among fire alarm systems, suppression systems and emergency power.
- For underground tanks indicate capacity and show all supply, fill and vent pipes, valves, etc.
- Fuel oil piping in building
- Duct and/or piping layout for the HVAC system, with the following also shown:
  - Main trunk and branch sizes
  - Size of all registers; indicate the cubic feet per minute (liters per second) at each register
  - Location of all equipment and outside air intake and exhaust air opening locations
- Complete equipment data for the HVAC system to include make and model number, BTU (kilowatt-hour) rating for heating and cooling, cubic feet per minute (liters per second) capacity, minimum and maximum outside air cubic feet per minute (liters per second), and energy efficient ratings (e.g., EER, COP, ATF, Combustion Efficiency, etc.).

- Identify economizer cycle when required by code. Provide sequence of operation.
- Heat loss and heat gain on a room-by-room basis with cubic feet per minute (liters per second), total heat loss, total heat gain and total sensible gain for apartment buildings of three stories or less and townhouses.
- Detailed shop drawings for commercial hoods which shall include the following:
  - Hood dimensions.
  - Construction material
  - Size, number and type of filters
  - Output of exhaust fan in cubic feet per minute (liters per second)
  - Size and number of ducts
  - Method of providing make-up air and amount
  - Evidence of compliance with Chapter 5 of the International Mechanical Code or a report by an approved testing agency indicating compliance with UL 710 for factory-built hoods

## **Fire Protection**

- Information on the following systems, if applicable:
  - Fire sprinkler along with hydraulic calculations
  - Fire pump along with manufacturer's test certification curve
  - Standpipe along with hydraulic calculations
  - Fire alarm (locations and candela ratings must be shown on the electrical drawings along with battery and voltage drop calculations).
  - Emergency generator
  - Elevator recall
  - Stairwell and elevator shaft pressurization
  - Range hood fire protection
  - Other specialized detection and suppression system(s)
  - Medical gas
  - Petroleum and liquefied petroleum gas storage tank and distribution systems
- A list of all hazardous chemicals, liquids or other materials to be used, handled or stored in the space. Specify the quantity of the materials to be used, handled or stored. Specify the storage method, e.g., metal drums, glass bottles, plastic jugs or cardboard boxes.
- Fixture details, e.g., shelving, racks, stock/storage