



## Mechanical Review Requirements Village of Gurnee Building & Safety Division

Mechanical plan reviews are based on the specified edition of the International Mechanical Code (IMC) and International Fuel Gas Code (IFGC) or the International Residential Code. In order to perform a thorough mechanical plan review, the following specifications, drawings, and details should be submitted:

### **Commercial:**

1. Complete signed and sealed plans, specifications, and calculations of all heating, ventilating, and air conditioning work.
2. Complete information on all the mechanical equipment and materials, including: listing, labeling, installation, and compliance with referenced material standards.
3. Details on the HVAC equipment, including: equipment capacity (BTU/h input), controls, equipment location, access, and clearances.
4. A ventilation scheduling indicating the outdoor air rates, the estimated occupant load/1,000 ft.<sup>2</sup>, the floor area of the space and the amount of outdoor air supplied to each space. Complete calculations clearly denoting equations and factors must be provided.
5. The location of all outdoor air intakes with respect to sources of contaminants.
6. Duct construction and installation methods, flame spread/smoke development ratings of materials, flexible air duct and connector listing, sealing of duct joints, seams and connections and duct support spacing.
7. Condensate disposal, routing of piping and auxiliary and secondary drainage systems.
8. Required exhaust systems, routing of ducts and termination to the exterior.
9. Complete details of all Type I and Type II kitchen hoods, grease duct construction and velocity, clearance to combustibles, and fire suppression system.
10. Details of all duct penetrations through fire-resistance rated assemblies, including locations for all fire dampers, smoke dampers, ceiling radiation dampers, and combination dampers along with applicable fire protection ratings and labeling requirements indicated on the plans. Provide the manufacturer's model and specifications for each damper.
11. Indicate the method of supplying combustion air to all fuel fired appliances, the location and size of openings, and criteria used to size the openings.

12. Details on the vents used to vent the products of combustion from all fuel-burning appliances, including: the type of venting system, the sizing criteria required for the type of vent, and the routing of the vent.
13. Boiler and water heater equipment and piping details including: safety controls, gauges, valves, and distribution piping layout.
14. Details on the type and quantity of refrigerant, calculations indicating the quantity of refrigerant and refrigerant piping materials, and the type of connections.
15. Complete details on the gas piping system, including: materials, installation, valve locations, sizing criteria and calculations (i.e. the longest run of piping, the pressure, the pressure drop, and applicable gas pipe sizing table(s) in the IFGC).

### **One and Two family dwellings:**

1. Provide a complete mechanical plan as part of the technical submission that is sealed by the licensed design professional. This mechanical plan shall include but not be limited to an equipment schedule, mechanical duct layout including an exhaust plan with duct sizes clearly labeled, whole house ventilation plan and calculations in accordance with the State of Illinois Energy Code, and the ACCA residential plans examiner review form or approved equivalent. Provide the required manual J, S, and D supporting documents. Verify consistency between all documents.
2. Interior design temperatures used for load calculations shall be a maximum of 72 degrees F for heating and a minimum 75 degrees F for cooling. Outdoor design temperature shall be based on Waukegan Illinois in table 1A of ACCA Manual J eighth edition or approved equal.
3. Provide the duct construction and installations methods including all flexible duct connectors. Provide the listing for all flexible duct connectors.
4. Indicate the method of supplying combustion air to all fuel fired appliances, the location and size of openings, and criteria used to size the openings.
5. Details on the vents used to vent the products of combustion from all fuel-burning appliances, including: the type of venting system, the sizing criteria required for the type of vent, and the routing of the vent.
6. Boiler and water heater equipment and piping details including: safety controls, gauges, valves, and distribution piping layout.
7. Complete details on the gas piping system, including: materials, installation, valve locations, sizing criteria and calculations (i.e. the longest run of piping, the pressure, the pressure drop, and applicable gas pipe sizing table(s) in the IRC).