



## COMMUNITY DEVELOPMENT DEPARTMENT CHARTER TOWNSHIP OF WEST BLOOMFIELD

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### COMMERCIAL ALTERNATIVE FIRE SUPPRESSION SYSTEM APPLICATION CHECKLIST

- Completed and signed Fire Alarm Permit Application with estimated cost of construction
- Application Fee - \$100.00
- Minimum Plan Review Fee - \$150.00
- Fire Suppression Plan Review Documents shall be designed according to applicable Standards Section 901.6.1 International Fire Code 2003**  
Alternative Fire Suppression System applicable codes include:
  - Foam Fire Extinguishing Systems – NFPA 11,11A, 16
  - Carbon Dioxide Fire Extinguishing Systems – NFPA12,
  - Halon 1301 Fire Extinguishing Systems –NFPA 12A,
  - Dry Chemical Fire Extinguishing Systems – NFPA 17,
  - Wet Chemical Fire Extinguishing Systems – NFPA 17A,
  - Water Based Fire Protection Systems – NFPA25,
  - Water Mist Systems, NFPA 750,
  - Clean Agent Extinguishing Systems – NFPA 2001
- Sealed & Signed Deferred Submittal/Plans (106.1):** All drawings must have the original hand written signature (no stamped signature), seal and date of the State of Michigan Registered Design Professional in responsible charge of the design. Section 106 of MBC- 2006
- Business Description (IFC 2003 Section 904):** Provide a cover sheet indicating the owner and/or tenant describing the business, location, including address and date.
- Floor Plan Drawings (IFC 2003 Section 904):** Provide three sets of plans of uniform size (preferred scale 1/8") including the following information:
  - 1. Basic Information required:**
    - \_\_\_ Name of owner and occupant
    - \_\_\_ Name, address and phone number of contractor and sprinkler designer
    - \_\_\_ Location, including street address
    - \_\_\_ Point of compass and symbol legend
    - \_\_\_ Enclosure cross section, full height or schematic diagram, including location and construction of building floor/ceiling assemblies above and below, raised access floor and suspended ceiling.
    - \_\_\_ Location of fire walls
    - \_\_\_ Location and construction of protected enclosure walls and partitions
    - \_\_\_ Description of occupancies and hazards being protected, designating whether or not the enclosure is normally occupied
    - \_\_\_ Physical details of the hazard, including the location, arrangement, and hazardous materials involved
    - \_\_\_ For protected enclosure, an estimate of the maximum positive and maximum

- negative pressure, relative to ambient pressure, expected to be developed upon the discharge of agent
- \_\_\_ Description of exposures surrounding the enclosure
- **2. System design info**
  - \_\_\_ Type of agent being used
  - \_\_\_ Design extinguishing or inerting concentration
  - \_\_\_ Description of the agent storage containers used including internal volume, storage pressure, and nominal capacity expressed in units of agent mass or volume at standard conditions of temperature and pressure
  - \_\_\_ Description of nozzles used including size, orifice port configuration, and equivalent orifice area
  - \_\_\_ Description of pipe and fittings used including material specifications, grade, and pressure rating.
  - \_\_\_ Description of wire or cable used including classification, gauge (AWG), shielding, number of strands in conductor, conductor material, and color coding schedule. Segregation requirements of various system conductors shall be clearly indicated. The required method of making wire terminations shall be detailed.
  - \_\_\_ Description of the method of detector mounting
  - \_\_\_ Plan view of protected area showing enclosure partitions (full and partial height); agent distribution system including agent storage containers, piping and nozzles; type of pipe hangers and rigid pipe supports; detection, alarm, and control system including all devices and schematic of wiring interconnection between them; end of line device locations; location of controlled devices such as dampers and shutters; and location of instructional signage.
  - \_\_\_ Isometric view of agent distribution system showing the length and diameter of each pipe segment; node reference numbers relating to the flow calculations; fittings including reducers and strainers; and orientation of tees, nozzles including size, orifice port configuration, flow rate, and equivalent orifice area.
  - \_\_\_ Scale drawing showing the layout of the annunciator panel graphics if required by the AHJ
  - \_\_\_ Details of each unique rigid pipe support configuration showing method of securement to the pipe and to the building structure
  - \_\_\_ Details of the method of container securement to the building structure.
  - \_\_\_ Complete step-by-step description of the system sequence of operations, including functioning of abort and maintenance switches, delay timers, and emergency power shutdown.
  - \_\_\_ Point-to-point wiring schematic diagrams showing all circuit connections to external system control panel and graphic annunciator panel.
  - \_\_\_ Point-to-point wiring schematic diagrams showing all circuit connections to external or add on relays.
  - \_\_\_ Complete calculations to determine enclosure volume, quantity of suppression agent, and size of back up batteries and method used to determine number and location of audible and visual indicating devices, and number and location of detectors.
  - \_\_\_ Pressure relief vent area, or equivalent leakage area, for the protected enclosure to prevent development, during system discharge, of a pressure difference across the enclosure boundaries that exceeds a specified enclosure pressure limit
  - \_\_\_ Details of any special feature

□ **Bill of Materials (IFC 2003 Section 904):**

- 1. Equipment schedule or bill of materials for each piece of equipment or device showing device name, manufacturer, model or part number, quantity, description.

- Manufacturer's product brochures (IFC 2003 Section 904):** Information to include description, models numbers, listing information for all devices, fittings, valves and materials.
- Hydraulic Calculations** when applicable **(IFC 2003 Section 904):**
  - System design requirements include:**
    - \_\_\_ Type and concentrate percentage of suppression agent
    - \_\_\_ Required solution application rate
    - \_\_\_ Submergence volume calculations
    - \_\_\_ Total water requirements, as calculated, including allowance for hose demand water supply information
    - \_\_\_ Calculations specifying required amount of concentrate
    - \_\_\_ Hydraulic calculations
    - \_\_\_ Calculation specifying required amount of air
    - \_\_\_ CAFS flow calculation report