

WAYNE COUNTY AIRPORT AUTHORITY



DETROIT METRO | WILLOW RUN

SP-911 FIRE STANDARDS

Table of Contents

1. General Requirements
2. Required Inspections & Acceptance Testing
3. Construction & Temporary Conditions
4. Means of Egress & Life Safety
5. Fire Protection Systems
6. Fire Alarm Systems
7. Sprinkler Systems
8. Commercial Kitchens
9. Temporary Trailers
10. Hydrants & Fire Department Connections
11. Hazardous Materials, Fueling & Storage Tanks
12. Painting, Cleaning & Spill Control
13. Mechanical, Electrical & Building Systems
14. Miscellaneous Requirements

1. General Requirements

- A. The review of this report does not relieve the contractor or building owner from designing and constructing the building per all code and standard requirements. Building and Life Safety code and standard requirements not necessarily noted in the report, in the plan review letter, or noted during inspections are still required to be provided for in order for full compliance with the required codes and standards.
- B. All work shall be in strict compliance with the most current editions of NFPA, IFC, MBC, WCAA Ordinance, ADA, and any other referenced codes and standards as directed by the AHJ.
- C. Life Safety, Fire Alarm, and Sprinkler plans are required to be submitted for all projects, if no changes, As-Builts are acceptable.
- D. Occupant load shall be posted.
- E. Rubbish and trash shall not be allowed to accumulate on the site. The entire premises and area adjoining and around the operation shall be kept in a safe and sanitary condition.
- F. For all construction materials, contractors shall submit at the request of the Fire Marshals Office, prior to installation, substantiation of the Fire Resistance Rating and Flame Spread/Smoke Development data.
- G. Extreme care shall be taken to avoid soiling adjacent buildings or equipment.

2. Required Inspections & Acceptance Testing

- A. Required inspections:
 - i. Ceiling Grid
 - ii. Suppression Flush
 - iii. Suppression Hydro Test
 - iv. Fire Alarm Acceptance Test
 - v. Sprinkler Hydro Test, Emergency Lighting
 - vi. 911 Reporting
 - vii. Hood Test
 - viii. Emergency Gate Release Test
 - ix. Final Space Inspection.
- B. These inspections can be scheduled by calling The Fire Marshals Office (734-247-7347) forty-eight hours in advanced.

3. Construction & Temporary Conditions

- A. Fire Safety during construction, alteration and demolition shall be ensured through strict compliance with International Fire Prevention Code, chapter 14. This section will also ensure site access.
- B. Temporary wall(s):
 - i. Shall be constructed using metal studs and 5/8-inch drywall Type X or equivalent;
 - ii. All joints shall be taped and sealed.
 - iii. If constructed of wood, they shall be with a material that has been treated with fire retardant.

- C. Any operation that may be classified as a “Source of Ignition” factor, i.e. burning, cutting, welding, etc., shall require a Site Inspection. If the operation conforms to code, and Airport Rules and Regulation requirements, the Airport Fire Department will issue a Hot Work Permit.
 - i. The Hot Work Permit process can be found here:
<https://apps.metroairport.com/hotworkpermit/Apply>
 - ii. In an emergency, Contractor may call (734) 942-3603, Station #100. Normal hours for site inspection and Hot Work Permit issuance are 7am-10pm/ 7 days a week.
- D. A smoke evacuation system shall be used during all hot work.
- E. Confined Space Entry through WCAA CSM app.
 - i. <https://apps.metroairport.com/CSMEntry>
- F. Smoke detectors shall be protected from dust during construction.
- G. WCAA representative shall be present for backfilling near utilities and underground fuel lines.
- H. Show existing and proposed elevations of ground, pavement, sewers, utilities, fire hydrants, etc.

4. Means of Egress & Life Safety

- A. A person shall not, at any time, place an encumbrance of any kind before or upon any fire escape, balcony, or ladder intended as a means of escape from fire. All existing means of egress from each part of the building, including stairways, egress doors and any panic hardware installed thereon, aisles, corridors, passageways, and similar elements of the egress, shall at all times be maintained in a safe condition and shall be available for immediate use and free of all obstructions.
- B. Emergency lighting and exit signage shall be installed as required by the most current edition of IFC, MBC, and NFPA and are required to have external test buttons.
- C. All new exit signs shall be LED battery back-up type.
- D. The overhead gate shall have a push-button emergency release. The emergency release shall be tested on all gates and shall be changed to the push-button electrical type.
- E. Delayed egress testing for crash bar hardware on doors required where applicable.
- F. Cypher codes to all doors temporary or permanent shall be provided in case of emergency.

5. Fire Protection Systems

- A. All fire protection systems, devices, units, and service equipment, which was installed compliant with any law, ordinance, or order, shall be maintained in an operating condition at all times. It shall be unlawful for any owner or occupant to reduce the effectiveness of the protection so required; except this shall not prohibit the owner or occupant from temporarily reducing or discontinuing the protection where necessary to make tests, repairs, alterations, or additions.
- B. All fire protection systems or components, (i.e. sprinkler systems, smoke detection, heat detectors, manual pull stations, exit/emergency lighting, etc.), shall be fully

operational prior to occupancy and/or use of said area and this shall be documented by a pre-occupancy inspection by the Fire Marshal's Office.

- C. The Contractor shall ensure that any architectural feature, light, duct, steel, or other object shall not obstruct any sprinkler discharge patterns. There shall be at least 18 inches of clearance from the deflector of the sprinkler head to the object.
- D. All passenger terminal spaces shall be protected to an Ordinary Group II hazard for suppression all areas at a minimum.
- E. If the space, building, or trailer has a storage room or walk-in cooler, the following shall apply:
 - a. The smoke detector shall be reprogrammed with the proper tenant and location.
 - b. A red line shall be painted 8 Feet from the floor if it is an open ceiling, or 18 inches from the enclosed ceiling, whichever is less when applicable.
 - c. A sign on the storage room/ walk-in cooler door shall be placed and state the following:
 - i. Who is occupying the space.
 - ii. Contact number.
 - iii. The name and Space number of store that the storage room is assigned.

6. Fire Alarm Systems

- A. All fire alarm and life safety systems, and their components, shall comply with the most current edition of NFPA 72. In addition, any duct detector installation shall have a remote test switch, report as a supervisory signal, and comply with the most current edition of the Michigan Mechanical Code
- B. Fire alarm system shall be tied directly into the base building system (no remote panels).
- C. All fire alarm and suppression system panels shall report point of contact to the Airport Response Center (ARC).
- D. All duct detectors shall report as Supervisory alarms.
- E. Sound system must mute upon activation of the buildings Fire alarm system.
- F. Any new or relocated detection device must be reprogrammed to reflect the new space name and/ or location on the fire alarm and CAD system.
- G. The Fire Marshals Office shall be notified before disconnection and interruption of service, tests or repairs to any life safety system. The restoration of the protection shall be diligently pursued. All systems and equipment shall be maintained as per applicable codes & standards.
- H. The CAD System and the Fireworks Program shall be updated with all construction additions and alterations.
- I. Due to the nature of areas of the airport, certain doors are required to have bypasses built-in for the fire alarm for testing purposes. This is required where applicable.

7. Sprinkler Systems

- A. An automatic water sprinkler system shall be installed. The system shall be installed in accordance with the most current edition of NFPA 13.

- B. Only with prior written approval of the Fire Marshal will any exceptions, modifications, variances, or waiver(s) be granted. Plans and specifications, including hydraulic calculations, shall be supplied to the Project Director's Office and reviewed by the Airport Fire Marshal's Office prior to fabrication.
- C. No installation shall start prior to plan approval.
- D. All FDC's shall consist of one (1) 5" Stortz Connection with a Hydrant Snap Cap, appropriate signage, and comply with all requirements of NFPA 13.
- E. All automatic sprinkler system designs shall be based on current (within the past 6 months) water flow information and shall be provided by the contractor.
- F. The Contractor shall provide auxiliary drains where a change in direction prevents drainage of any system piping through the main drain valve. All sprinkler piping shall be labeled with directional flow indicators on each section of pipe.
- G. Provide a minimum of one (1) 4A-40BC rated portable fire extinguisher within thirty- five (35) feet of each pump dispenser location, but NO closer than ten (10) feet.
- H. In ALL unattended locations, an accessible telephone or other approved (by the AHJ) method SHALL be provided for notifying the Fire Department.
- I. U.L. Listed and approved fueling area suppression system is required, or if approved by the AHJ the use of an early fire detection system such as flame or heat detectors with fire alarm.
- J. Freezer and cooler shall have sprinkler heads.
- K. Sprinkler heads shall not be painted.

8. Kitchen Equipment

- A. All cooking equipment shall have an electronic pilot light.
- B. Submit plans for Hood and FM300 systems.
- C. The Commercial kitchen hood shall comply with Michigan Mechanical Code Section 507 and NFPA 96. The activation of the exhaust fan shall occur through an interlock with the cooking appliances, by means of heat sensors or by means of other approved methods.
- D. There shall be a manual gas shutoff valve located on the gas manifold for the cooking appliances. The valve is to be located within 2 feet of the appliances. The main gas valve for the concession space must be located below the ceiling grid. These valves must be labeled.
- E. All appliances shall meet their manufacturers clearance requirements.
- F. There shall be a second set of hood filters with a soak tank.

9. Temporary Trailers

- A. Temporary Trailers shall comply with NFPA 241 & Listed References.
- B. Trailers of any type shall not be placed under any concourse, moving walkway, or area under construction.
- C. All temporary trailers shall be equipped with smoke detectors and at least one 2A10BC fire extinguisher at every exit.

- D. The minimum spacing for any temporary trailer shall be six (6) feet on all sides from another trailer or fence.
- E. The space under the temporary trailer shall not be used for the storage or placement therein of flammable gases, liquids, or gas and liquid fuel powered equipment. This area shall be kept free of accumulations of any rubbish or trash, or other combustibles.
- F. Temporary trailer shall be approved for use as office occupancy only. Use of trailer for storage purposes of any kind is prohibited.
- G. Any temporary trailer 30 feet or longer in length shall have two (2) exits, each marked with an approved exit sign. Only one exit is required for trailers less than 30 feet and shall have an approved exit sign.
- H. In temporary trailers, all exit doors shall be open for egress whenever the unit is occupied. Draw bolts, hooks, and other similar locking devices shall be prohibited on all egress doors.
- I. In temporary trailers, the installation of any heating system shall have prior approval of the Airport Fire Marshal.

10. Hydrants & Fire Department Connections

- A. All fire hydrant installations and relocations will have prior approval. Contact Fire Marshals Office at (734) 247-7347
- B. Fire Hydrants may not be used by a contractor without prior written approval from the Airport Fire Marshals Office.
- C. Above Ground Hydrant Standard
 - a. New above ground fire hydrant installations will conform to the following:
 - i. Shall be East Jordan Model 5BR350 (traffic)
 - ii. Each new hydrant shall be equipped with two (2) pumper nozzles
 - iii. The operating nut shall be a 1-1/16" pentagon nut
 - iv. Inlet connection shall be a 6" mechanical joint hub
 - v. Operating nut shall open left. (Counterclockwise)
 - vi. Depths of bury 6.5' from bottom of inlet to finish grade
 - vii. Nozzle threading:
 - 1. One outlet shall be Detroit Pumper Standard 4.566" at 6 threads per inch O.D. (3 3/4" I.D.)
 - 2. One outlet shall be 4" NPT, which will be retrofitted with a 5" Storz Outlet and a Hydra Snap Cap after hydrant installation (This will be the contractor's responsibility)
- D. Below Ground Hydrant Standard
 - a. Shall be standard configuration:
 - i. 2 - 2 1/2" National Standard Thread, and one (1) 4" NPT.
 - ii. The 4" pumper nozzle shall be retrofitted with a 5" Storz outlet, with Hydra Snap Cap after hydrant installation.
 - b. NOTE: Mueller Fire Protection Products makes this hydrant and will provide hydrant as specified above.
- E. Wall Hydrants

- a. Any new wall hydrant installation shall consist of one (1) 5" Storz Outlet with Hydra Snap Cap. Operating valve shall be wheel type (PIV). All wall hydrants shall have drain, (between valve and outlet), and shall be properly identified, etc., and shall be installed with a 45 degree Elbow.
- F. Dispensers Shall:
 - a. Only operate when nozzle is removed from dispenser.
 - b. Be protected from damage and secured in place to a concrete island.
 - c. Have a maximum hose length of eighteen (18) feet.
 - d. Have a listed automatic self-closing nozzle. (Hold open devices prohibited)
 - e. Have a splashguard for dispensing.
 - f. Have a breakaway device installed in the hose.
 - g. Have an emergency shut-off not less than twenty (20) feet and not more than one hundred (100) feet from the dispenser.
 - h. Signage SHALL be installed to read:
 - i. No smoking.
 - ii. Stop Motor.
 - iii. No dispensing into unapproved containers.
 - iv. In case of FIRE or SPILL:
 - v. Use EMERGENCY STOP
 - vi. Report Emergency by calling 911 from Fixed Phone System
 - vii. Product Identification and EMERGENCY STOP switches SHALL be identified.
- G. A Knox Box will be installed next to the main door if building is located at Willow Run Airport (YIP), no Knox Boxes are permitted at Detroit Metro Airport (DTW) buildings, keys, etc. will be provided to the Fire Dept. for access. Contact the Fire Marshals office for ordering information.

11. Hazardous Materials, Fueling & Storage Tanks

- A. All tank vent pipes SHALL be a MINIMUM of twelve (12) feet above grade and no closer than five (5) feet to any building opening.
- B. Spill protection shall be required at fill pipes
- C. Fuel dispenser requirements.
- D. Fire extinguisher shall be located per NFPA 10.
- E. All above ground storage tanks shall be placarded in accordance with the requirements of NFPA 704.
- F. Labeling and placarding shall be provided on all sides accessible to pedestrian or vehicular traffic.
 - a. The label shall identify the product within the above ground storage tank, for example:
 - i. Red lettering on a white background
 - ii. Three (3) inches in height
 - iii. Width of lettering in proportion to height
- G. All signage shall be weather-resistant and of the permanent type.
- H. All above ground storage tanks shall be posted with no smoking signs.

- I. Bollard protection shall be placed around AST fuel tanks, generators, propane cages, etc. These locations will also require one fire extinguisher with a 10B rating.
- J. CO2 leak detection required wherever connections between tanks and lines are made, and/ or in dispensing areas.
 - a. Local alarms are allowed.

12. Painting, Cleaning & Spill Control

- A. A one-day supply of paint is allowed on site while work is in progress.
- B. The tenant is to have sufficient inert absorbent material on hand, (such as vermiculite, etc.), during the entire washing and painting operation. This material is to be used in the event of a spill or leak of either the concentrated detergent or paint.
 - a. Sand is not permitted for this use at DTW/YIP.
- C. Should a spill or leak occur, the absorbents are to be used to preclude the liquid from entering the storm sewer system and to clean up the loss.
- D. No partially filled or empty containers of detergent or paint are to be left on Airport Property when the project is completed.
- E. No leftover detergent or paint is to be "disposed of" in either the storm or sanitary sewer systems.
- F. Permittee agrees to take adequate precautions to ensure that no paint, resulting from their activities under this permit, gets on any vehicle, building or structure not intended to be painted.
- G. Permittee agrees to take adequate precautions to ensure that no solvent or substance used for cleaning the jet bridges gets on any vehicle, building, or structure.

13. Mechanical, Electrical & Building Systems

- A. When any electrical or mechanical equipment penetrate a fire wall/barrier the penetration shall be sealed (fire stopped) with a material or device that maintains D
- B. No open grid ceiling; all ceiling must be laid in tile or hard deck.
- C. All gates and doors to the space and storage room shall be keyed to the WCAA B core.
- D. Any new electrical equipment shall require the relabeling of breaker panels.
- E. Any power strips being utilized shall be UL1363 certified.

14. Miscellaneous Requirements

- A. Contractor must place a new Identification Placard for the Riser whenever a terminal space undergoes a name change.
- B. Lumber used in rough carpentry or framing shall be treated with a fire retardant chemical and shall carry appropriate U.L. or equivalent marking.
- C. Plywood or particleboard used in construction shall be treated with a fire retardant chemical and shall carry appropriate U.L. or equivalent marking.
- D. A telephone is required and must have the capability of dialing 911 directly to the Airport Response Center (ARC). Display information shall indicated the Name of the Space and the nearest gate, and/ or the building number, not the mailing address.

- E. Labeling and placarding shall be clearly legible and of contrasting colors. In accordance with NFPA 704, Lettering shall be a Minimum of three (3) inches in height in order to be readable at one hundred (100) feet.
- F. Smoke detector reprogramming.