



Maintenance Strategy – Life / Fire Safety Guidelines

This category covers a broad range of a buildings life safety systems and sub systems. The information contained in this document are general recommendations and guidelines designed to bring attention to the importance and benefits of preventive maintenance strategies supporting quality educational environments. It is important for facility managers and maintenance staff to be aware of the specific systems asset types and maintenance required to effectively maintain the systems functionality and reliability through preventive maintenance requirements. Qualified in-house maintenance combined with certified vendor staff may be necessary to manage systems safely and effectively. Consult manufacturer recommendations on buildings life safety system maintenance requirements.

There is one constant in school business maintenance programs: change comes in multiple dimensions. Your facilities maintenance needs are no exception. Fire safety is a major concern to all businesses, industries and owners. Schools are no exception. The high levels of student traffic within the school is constant and relentless. Educational facilities are prone to high levels of unintentional wear and tear damage. A fire incident in an educational facility, apart from the damage to property can have a devastating long-term effects on students, staff and the community. Fires can destroy property, inventory, documents, and endanger occupant lives. It is your responsibility as a district owner and employer to provide a safe working environment for all occupants protecting the capital investments. It is critical that a proactive approach be developed to minimize damage and maximize response times. Fire system components from fire extinguishers and emergency lighting to code compliant fire alarms and sprinkler systems all require scheduled preventive maintenance to ensure equipment reliability and proper operation. Many times these systems require a qualified outside service vendor to provide routine scheduled maintenance tasks to meet or exceed regulated and logistical requirements.

MAINTENANCE AND REPAIR. As a part of a regularly scheduled maintenance program systems should be:

- Tested in accordance with NFPA Life Safety Code Standards.
- Broken or damaged equipment or systems should be replaced and/or repaired when required
- A record of all work performed should be documented in in your facilities CMMS

All fire systems require routine cleaning and maintenance. From general cleaning to minor repair, they need this attention because high use and stresses producing minor defects are constantly at work. These stresses may be caused by heavy constant system use, vandalism and many other factors. Regardless of the cause, the result is the same -- without routine scheduled maintenance the systems can ultimately deteriorates before it is time. Preventive maintenance means the early detection and repair of minor defects, before major and costly reactive action is necessary; it is a proper way to care for a life / fire safety system assets. Fire system assets should be routinely reviewed for proper operations to include cleaning to remove routine trash and debris affecting accessibility and proper operations, conducting minor repairs to sub components and proper upkeep supporting a safe and functional asset providing for a safe environment.

Why service fire systems regularly? Government regulations require fire equipment and systems to comply to a standard of performance and to be regularly tested, serviced and maintained to provide for occupant safety and equipment reliability. The benefits include:

- increased equipment and systems life expectancy
- reduced operating costs
- reduced insurance premiums
- extended equipment warranties
- peace of mind that equipment and systems are in proper working order, ready to operate should an emergency occur

ACCUMULATION OF DEBRIS: Debris (trash, rubbish, wood pallets, large amounts of paper products etc.) shall not be allowed to accumulate in an unsafe or inappropriate manner. Storage closets shall be maintained in an organized fashion that allows clear, safe and unobstructed access to stored supplies.

COMBUSTIBLE DECORATIONS: Combustible decorations shall be maintained at no more than 20% of the wall area in any department and *UL Listed*. Combustible decorations in egress corridors are prohibited. Combustible decorations should be kept away from heat producing devices and exit ways. All approved exit doors shall be maintained free of all debris and combustible materials.

COMBUSTIBLE MATERIALS: Rubbish or waste material in buildings shall be stored in containers or in rooms/vaults constructed of non-combustible materials. Metal containers with tight fitting covers shall be used for oily rags and similar materials. Combustible rubbish or waste material shall be removed from the building at least once each working day.

EGRESS / EXITS: All exits and means of access to those exits shall be maintained clear, operable from the inside, without the use of a key or special knowledge or effort and unobstructed at all times.

- Exit doors shall not be locked, padlocked, chained, bolted, barred, latched, or otherwise rendered unusable. All locking devices shall be of an approved type.
- Manually operated, edge or surface mounted flush bolts and sliding bolts are prohibited. Required exit door(s) must be kept unlocked from the inside at all times while the building is occupied. Any bars, chains or other devices restricting the use of the exit must be removed during business hours so the exit can be used properly.
- All exit doors must swing in the direction of exit travel when serving any hazardous area or when serving an occupant load of 50 or more.
- Aisles leading to required exits shall be provided from all portions of buildings. Aisles shall be clear and clear of obstructions.
- No storage is allowed, at any time, in any exit, corridor, hallway, stairway, or other exit way leading to an exit.
- Storage under stairways is prohibited, unless one hour rated construction has been provided for this purpose and sprinklered.
- Storage in all buildings shall be orderly. Boiler rooms, mechanical rooms, and electrical panel rooms shall not be used for storage of combustible material.

ELECTRICAL PANELS: A clear and unobstructed means of access with a minimum width of 36 inches and a minimum height of 78 inches shall be maintained from the operating face of electrical breaker boxes, switchboards, and panel boards. A minimum 36" unobstructed clearance shall be maintained and includes fire panels, electrical panels, transformers and interior and exterior electrical utility boxes. Panels should have schedules available.

EXIT AND EMERGENCY LIGHTS: Exit lights shall be monitored weekly, maintained monthly by maintenance staff to ensure proper and reliable working conditions. A minimum of 36” clearance shall be maintained on all fire exit and emergency lighting systems.

EXTENSION CORDS: Extension cords shall not be used as a substitute for permanent wiring. Extension cords shall not be used for fixed or stationary appliances, such as vending machines, refrigerators, etc. Extension cords shall be plugged directly into an approved receptacle, power tap, or multi-plug adapter and shall, except for approved multi-plug extension cords, serve only one portable appliance. The condition of the extension cords shall be maintained in good condition without splices, deterioration, or damage.

Extension cords and flexible cords shall not be affixed to structures, extend through walls, ceilings, floor, under doors, or floor coverings. The use of multi-plug adapters/surge suppression devices is prohibited unless UL approved. If additional permanent outlets are required, maintenance shall be contacted and a maintenance work request/order shall be submitted for consideration. Unapproved multi-plug adaptors such as multi-plug extension cords, cube adaptors and strip plugs are prohibited. **EXCEPTION:** Power strips with circuit breaker or fuse overload protection.

EMERGENCY LIGHTING: Installed emergency lighting in all buildings, suites or areas with exits or exit path ways is designed to illuminate the path of travel for the exit served. Recommended a proper inventory with monthly preventive maintenance efforts managed through a computerized maintenance management system.

FIRE EXTINGUISHERS: Fire extinguishers shall be maintained clean and clear of debris and trash with a 36” inch clearance. All extinguishers should be labeled, monitored daily and physically checked on a monthly basis.

Types of Fire Extinguishers:

Class of Fire	Types of Extinguishers to Use
Class A: Ordinary combustible materials, such as wood, cloth, paper etc.	“A-B-C” - Pressurized Water
Class B: Flammable liquids, such as oil, gasoline, kerosene, etc.	“A-B-C”, “B-C” dry chemical, Carbon dioxide
Class C: Presence of energized electrical circuits (e.g., electronic motors, electrical wiring and devices etc.)	“A-B-C”, “B-C” dry chemical, Carbon dioxide
Class D: Reactive Metals	“D” extinguishers only
Class K: Oils and Fats	“K” (for kitchens)

FIRE PROTECTION EQUIPMENT: Fire Protection equipment, such as, fire panels, fire pull stations, fire extinguishers, fire exits, fire sprinklers, fire blankets etc. shall remain easily accessible and free from all obstructions to 36”.

FLAMMABLE LIQUIDS: Flammable liquids shall be stored in an approved metal storage cabinet (gasoline, acetone, thinners, alcohol based hand sanitizers etc.). SDS will be made available on all chemicals in use within the confines of the district facilities. A master list of chemicals (in-use) will be maintained at the district office.

HAZARDOUS CHEMICAL STORAGE: Hazardous Chemicals shall be stored in accordance with local, state and federal regulatory guidelines and standards and/or as instructed by the facility M & O Director, safety officer, superintendent or designee.

OVERCROWDING OF CLASSROOMS: General occupancy standards, established by local fire code, will be followed to maintain a safe environment & prevent injuries. Overcrowding of rooms with physical occupants or storage is strictly prohibited. Clean aisles shall be provided for unobstructed & safe access to all exits and exit devices. Equipment/debris should not be placed in such a manner to obstruct a means of exit or other fire safety device.

PORTABLE SPACE HEATERS: Portable space heating devices are permitted only under emergency situations of non-operating or failed heating systems and should not be used as a permanent source of heating. They pose an increased

risk to all occupants and increase the risk of fires and injuries. They are allowable in student areas and classrooms, offices, conference rooms etc. as long as they are monitored by someone at all times. The heating elements of such devices are limited to not more than 212 F. All applicable fire codes and the manufacturer's instructions and/or user guidelines should be followed to ensure maximum protection against loss incurred by the use of an electrical device. The use of portable propane, kerosene, or other fossil fuel heaters is prohibited within any school building.

STORAGE: All storage is to be kept a minimum 18" below sprinkler heads at all times and 12" below ceiling level if the area is non-sprinklered. Storage areas should be maintained in a clean and well organized manner to prevent items from falling and aisles maintained clear of debris or stored items. Floors should be maintained clean and clear of stored items. Organized and unobstructed access to stored items should be developed.

UPHOLSTERY, DRAPES AND CARPETING: All upholstered furniture, drapes and carpeting in general locations must be flame retardant as verified by the manufacturer and facility safety officer or designee. Upholstered furniture is not allowed in corridors as permanent furniture.

Mechanical / Equipment Room Guidelines:

Mechanical/Electrical/Boiler Room Usage: This guideline covers all Mechanical Rooms, Electrical Rooms, and Boiler Rooms. The inherent dangers and potential hazards associated with various types of complex equipment inside such spaces dictate that only authorized construction and maintenance personnel, and/or authorized contractors hired by the district, shall have access to, or shall enter, these rooms. The potential for serious injury or death mandates that this policy be strictly enforced. The International Fire Code states that "Combustible material shall not be stored in boiler rooms, mechanical rooms, or electrical equipment rooms." Storage of any kind, except that which pertains to the maintenance of the equipment in that facility, is prohibited. The usage of any Mechanical Room, Electrical Room, or Boiler Room within the district, for purposes other than its designed usage, is without exception prohibited.

Mechanical rooms are designed to house mechanical equipment, and storage should not obstruct access to the mechanical equipment. According to the 2000 edition of the LSC, storage in mechanical rooms is not prohibited, however there are some requirements that are necessary to maintain a safe environment and include:

- The mechanical room must not contain any open flame or fossil-fuel fired heating equipment.
- The items stored in the mechanical room must be organized in an orderly and safe manner.
- Storage cannot obstruct access to electrical panels, fire extinguishers, fire alarm pull stations, and must be clear of all sprinklers located on a horizontal plane 18 inches below the sprinkler deflector.
- If the items stored in the mechanical room are combustible (cardboard boxes, paper or plastic wrapping, linens, etc.) then the mechanical room must meet normal hazardous room requirements:
 - If the room is new (meaning if the room has been designated for storage on or after March 11, 2003), then it must be protected with automatic sprinklers and the walls constructed from the floor to the deck above with 1-hour fire rating, with a ¾ hour fire rated, self-closing, positive latching door.
 - If the room is considered existing (meaning the room was designated as storage before March 11, 2003 and there have not been any major renovations since), then it must be protected with automatic sprinklers with walls that are smoke resistant and extend from the floor to the ceiling, and protected with a 1¾ inch solid bonded wood core door that is smoke resistant and self-closing and positive latching, or if not sprinklered, then the room is required to be protected with 1-hour fire rated barriers.

Please check with your state and local authorities as well as your district policies as they may have other codes or standards that may prohibit storage in a mechanical, electrical and or boiler rooms. Other considerations in mechanical rooms:

- **Ventilation:** Boiler room ventilation (combustion air) should be unobstructed to ensure an adequate supply of oxygen. Proper ventilation is necessary to discharge the buildup of carbon dioxide.

- **Signage:** All mechanical rooms should bear the name of the room at its entrance way. Doorways and interior sections of the mechanical rooms must be free from obstruction and clean. No storage of any type is permitted in any mechanical room. A valid fire extinguisher should be present and in reliable working order and the areas secured from unauthorized access.

These guidelines are designed to assist facilities in developing/enhancing a reliable and fire safe organization. All staff are encouraged to develop and communicate a general understanding of life safety guidelines aligned with the districts mission and vision. Please refer questions or comments to your district maintenance and operations staff.

FIRE EXTINGUISHER INSPECTION and MAINTENANCE GUIDELINES



Check these details during monthly fire extinguisher inspections.

- ☐ **Note:** If you use an extinguisher, even one time, it **MUST** be removed and serviced.
- ☐ Know the locations of all fire extinguishers through your inventory and develop a floor plan of all locations.
- ☐ Confirm extinguishers are visible, unobstructed, & properly installed/mounted in its designated location.
- ☐ Verify the locking pin is intact and the tamper seal is unbroken. Examine the extinguisher for obvious physical damage, corrosion, defects, leakage or obstructed/clogged nozzle.
- ☐ Confirm the pressure gauge or indicator is in the operable range or position, and lift the extinguisher to ensure that it is full.
- ☐ Check the last professional service date on the tag. (A licensed fire extinguisher maintenance contractor/vendor must have inspected the device within the last 12 months).
- ☐ Wipe down dust and debris from the device and/or clean out trash inside the storage container.
- ☐ Initial and date the back/front of the tag.
- ☐ Report expired service tags and missing, damaged or used extinguishers immediately through your facilities work order system.

Situations which would require help or cannot be easily remedied should be reported as soon as possible to the maintenance department so assistance can be provided to include a replacement device.



New Mexico Fire/Life Safety Code Requirements: Reference Codes related to Life Safety for Public Schools and maintenance requirements (NFPA and OSHA reference):

- **Fire Extinguishers:** OSHA 1910.157 / NFPA 10 (annual/monthly)
- **Fire Alarm Systems:** NFPA 72 (annual)
- **Fire Sprinklers Systems:** NFPA 25 (quarterly)
- **Hood Systems:** Type I Kitchen Hood Requirements (semi-annual).
- **Doors:** NFPA 80.
- **Back Flow Preventer Assemblies (BPA's)** (annual):
- **Means of Egress:** OSHA 1910.33-39 (annual)
- **Exit Signs/Emergency Lights:** LSC 101 5-9-3 (30 days)
- **Emergency Generator:** NFPA (weekly/monthly)