

2. Fire Prevention Plan (FPP)

Required by: OSHA 29 CFR 1910.39

This plan describes the actions taken at HRE's warehouse facility in Marble Canyon, AZ to prevent fire and to keep employees, guests, and others at the facility safe in the event that a fire does occur.

This plan includes information about:

- Basic fire science
- Storage, handling, and housekeeping of materials that could contribute to a fire or impede evacuation routes if not handled properly
- Flammable and combustible materials stored and used on site
- Potential ignition sources on site
- Fire protection equipment on site and its specific locations
- Inspections and maintenance of potential ignition sources and fire protection equipment

IMPORTANT: IN THE EVENT OF A FIRE, FOLLOW THE EVACUATION PROCEDURES DETAILED IN THE EMERGENCY ACTION PLAN.

Elements of Fire

Fire can be represented by a simple equation: Fire = Ignition Source + Fuel + Oxygen. Without any one of these three elements, a fire cannot start. Likewise, during a fire, if you take away any one of these three elements, you can successfully extinguish a fire. The procedures detailed in this plan are designed to prevent these three elements from interacting, thus preventing fire from starting.

Classes of Fires

Class A "Ordinary" - solid materials such as wood, paper, fabric, some plastic

Management: Put out quickly before it spreads using ABC extinguisher or water.

Class B "Liquids & Gases" - liquids or gas such as alcohol, gasoline, or oil-based paints

Management: Shut off fuel source; then, smother or remove from oxygen using ABC extinguisher.

Class C "Electrical" - electrical failure from appliances, electronic equipment, and wiring

Management: Turn off breaker; then, extinguish using non-conductive materials such as ABC extinguisher (not water).

Class D "Metallic" - metallic substances such as sodium, titanium, zirconium, or magnesium

Management: Not likely to occur at HRE. Cannot be addressed with water. Use a dry powder such as sand to smother flames.

Class K "Grease or Cooking" - grease or oil fires specifically from cooking

Management: Not likely to occur at HRE. Cannot be addressed with water. Smother flames.

Material Storage, Handling, and Housekeeping

Proper storage and handling of potentially hazardous, flammable, or combustible materials is essential to preventing the conditions that could lead to the ignition or spread of a fire in an HRE facility. Good housekeeping habits also help ensure that should a fire or other emergency requiring evacuation occur, everyone is able to safely navigate through and out of the building.

The following storage, handling, and housekeeping procedures should be followed throughout HRE facilities:

- Keep frequently used items within reach and return extra stock material to storage.
- Stack objects in an orderly and stable manner. Do not overload floors or shelves.
- Do not place objects so that they hang over the edges of shelves, causing a falling object hazard.
- Store breakable and heavy items on low shelves.
- Do not block fire extinguishers, electrical boxes, vents, or exits.

- Properly ground all electrical equipment.
- Separate flammables and combustibles by their properties.
- Keep corrosives away from flammables.
- Store flammables in approved NFPA containers in a cabinet away from ignition sources. (This includes cloth rags and other items used for cleaning up combustible or flammable materials.)
- Report leaks of flammables or combustibles.
- DO NOT smoke or eat around flammables and combustibles.
- Use positive ventilation while working with chemicals.
- Properly dispose of unneeded flammables and combustibles.

Flammable and Combustible Materials

The following materials are likely to be stored or used on HRE property:

- Paints and painting thinning or stripping chemicals
Stored in: warehouse paint cabinet, a certified flammable cabinet
Used in: warehouse, yard
- Cleaning chemicals
Stored in: food pack and tool room on open shelving
Used in: throughout facility
- Automotive products (oil, gasoline, diesel fuel)
Oil Stored in: shop
Gasoline/diesel fuel stored in: vehicles
Used in: vehicles, motor room
- Liquid Propane Gas (LPG)
Stored in: LP Tanks in outdoor storage shed
Used in: carried on boats, used in campsites on river
- Acetylene
Stored in: pressurized cylinders in welding station
Used in: welding station

Potential Ignition Sources

The following are known potential sources of ignition at the HRE facility:

Welding Station in the Warehouse:

- Welder
- Cutting torch
- Drill press
- Bench grinder
- Other electrical equipment and tools

Kitchen:

- Gas stove
- Electrical appliances (toaster, coffee maker)

Shop floor or yard:

- Vehicles

Fire Protection Equipment

The following fire protection equipment is available at the HRE facility in case an ignition occurs and needs to be extinguished:

- Fire Hose
Location: NE corner of shop, accessible through bay doors or entrance door (150ft hose, 2” diameter)

- ABC Extinguishers
Locations:
 - Kitchen
 - Tool Room
 - Warehouse Flammables Cabinet
 - Motor Room
 - Welding Area
 - Propane Fill Cylinder
 - Food Pack

- B1 Extinguishers
Locations:
 - All Vehicles

Inspections and Maintenance

Potential Ignition Sources

The Warehouse Manager is responsible for conducting inspections of HRE equipment that could be a potential source of ignition. For more information regarding facility inspections, please review the Inspections and Corrective Action section of the Risk Management Plan. The Warehouse Manager is also responsible for ensuring that when equipment is found to be in need of maintenance or repair, appropriate action is taken in a timely manner.

Fire Protection Equipment

Management conducts a visual inspection once per month to ensure that all fire extinguishers are in the designated locations, are not blocked, and appear to be undamaged. Once per year, HRE hires a 3rd party company, Fire Masters, to certify all extinguishers.