

BURNET COUNTY

SAFETY POLICIES

MANUAL

ADOPTED MAY 21, 1993

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BURNET COUNTY SAFETY ACKNOWLEDGMENT POLICY

It is the intent of this county to provide a safe work environment for its employees. In order for these conditions to be met, the county has developed a number of safety policies it believes will promote a reasonably safe work place for its employees. Improvement is always possible and additional recommendations are welcomed and encouraged.

It is also the intent of this county for its employees to perform the work assigned in a safe manner; therefore, each employee has a responsibility to the county. These responsibilities include but are not limited to: the requirement to advise the supervisor when the employee does not know how to perform the work assigned; never to endanger other employees; report all unsafe conditions and injuries to the supervisor; and follow all safety policies established by the county. The employee should notify his or her supervisor of any injury that would prevent them from performing his or her job related duties. Supervisors have the responsibility to: assign work to employees who are qualified through training or work experience; train the employee to perform the work correctly and safely; never require employee to perform their duties in an unsafe manner or environment; and follow county safety policies.

Each employee is required to follow all safety policies of this county. Failure to adhere to the county safety policies may subject the employee to disciplinary action up to and including termination. Each employee is required to acknowledge that he/she has read and understands the county safety policies and acknowledge the same by signing below.

EMPLOYEE NAME: _____

DATE: _____

POSITION: _____

EMPLOYEE SIGNATURE: _____

A copy of the Burnet County Safety Policy is located on the county website www.burnetcountytexas.org. Click on Departments & choose Human Resources. Click on Safety Policy.

BURNET COUNTY DRUG AND ALCOHOL POLICY

PURPOSE

The purpose of this policy shall be to establish a drug and alcohol-free workplace to help ensure a safe and productive work setting for all employees.

APPLICABILITY

This policy shall apply to all employees of Burnet County regardless of rank or position and shall include temporary and part-time employees.

The only exception to this policy shall be the possession of controlled substances by law enforcement personnel as part of their law enforcement duties.

POLICY

The following shall be a violation of this policy:

- A. The manufacture, distribution, dispensing, possession, sale, purchase, or use of a controlled substance or drug paraphernalia on County property.
- B. Being under the influence of alcohol or illegal drugs while on County property or while on duty for the County. The use of any kind of alcohol or illegal drugs while on duty is forbidden and will subject the offender to disciplinary action up to and including dismissal at the discretion of Department Head.
- C. The use of prescription or over-the-counter drugs, while on County property or while on duty for the County, in a manner other than that intended by the manufacturer or prescribed by a physician. An employee shall notify his supervisor while taking any prescription medication that has the potential to affect performance of duties.
- D. Employees are not covered under Workers' Compensation if it is established they were under the influence of alcohol or illegal drugs at the time of the injury.

DEFINITIONS

- A. A controlled substance shall include any substance listed in Schedules I-V of Section 202 of the Controlled Substance Act (21 U.S.C. S 812), as amended.
- B. County property shall include all County owned, rented, or leased real property such as buildings, land, parking lots etc. and property used by employees such as vehicles, lockers, desks, closets, storage areas, etc.
- C. Drugs shall include any chemical substance that produces physical, mental, emotional, or behavioral change in the user.
- D. Drug paraphernalia shall include equipment, a product, or material that

is used or intended for use in concealing an illegal drug or for use in injecting, ingesting, inhaling, or otherwise inducing into the human body an illegal drug or controlled substance.

- E. Illegal drug shall include any drug or derivative thereof which the use, possession, sale, transfer, attempted sale or transfer, manufacture, or storage of is illegal or regulated under any federal, state, or local law or regulation and any other drug, including (but not limited to) a prescription drug, used for any other than a legitimate medical reason, and inhalants used illegally. Included is marijuana or cannabis in all forms.
- F. Under the influence shall be defined as a state of having a blood alcohol concentration of 0.02 or more or the state of not having the normal use of mental or physical faculties resulting from the voluntary introduction into the body of an alcoholic beverage or a controlled substance.

TYPES OF DRUG AND ALCHOL TESTING

- A. Reasonable Suspicion Testing: If an employee is having a work performance problem or displaying behavior that may be alcohol or drug related, or is otherwise demonstrating conduct that may be in violation of this Drug and Alcohol Policy where immediate management action is necessary, a supervisor, will require that employee to submit to a breath test, urinalysis and/or blood test (see Appendix B). The following conditions may be signs of possible alcohol or drug use (this list is not all-inclusive):
 - Abnormally dilated or constricted pupils
 - Glazed stare – redness of eyes (sclera)
 - Flushed face
 - Change of speech (i.e. faster, slower, slurred)
 - Constant sniffing
 - Increased or unexplained absences
 - Redness under the nose
 - Sudden weight loss
 - Needle marks
 - Change in personality (i.e. paranoia, anger)
 - Increased appetite for sweets
 - Forgetfulness – performance altering – poor concentration
 - Borrowing money from co-workers or seeking an advance of pay or other unusual display of need for more money
 - Constant fatigue
 - Hyperactivity
 - Smell of alcohol
 - Difficulty walking or standing
 - Dulled mental processes
- A. Slowed reaction rate
- B. Post-Accident Testing: All employees directly involved in an on-the-job accident that results in property damage, lost time or bodily injury will be

required to be drug and alcohol tested within 3 hours of the accident. Any accident involving damage to county property at any time shall also require a drug and alcohol test within 3 hours of the accident.

REFUSAL TO BE TESTED

Each employee is expected to fully cooperate and consent to a drug or alcohol test when requested under the terms of this policy. Refusal to consent to a drug test when requested may result in immediate termination.

POLICY VIOLATIONS

Any employee who violates this policy shall be subject to disciplinary measures up to and including termination.

PRESCRIPTION DRUGS

Employees taking prescription medications shall be required to notify their supervisor of any possible effects the medication might have regarding their job performance and physical/mental capacity.

Any information concerning prescription medications being used by an employee, and any other medical information of which the supervisor becomes aware, shall be treated as confidential information.

Prescription medications used at work are to be kept in their original container.

TREATMENT

Employees having problems with drugs or alcohol are encouraged to seek treatment from qualified professionals.

Information on benefits provided for treatment of alcohol and drug problems through the County's medical insurance program is available in the employee's insurance coverage booklet or from the Human Resources Office.

RESERVATION OF RIGHTS

The County reserves the right to interpret, change, suspend, cancel or dispute, with or without notice, all or any part of this Policy, or procedures or benefits discussed herein. Employees will be notified before implementation of any change.

OTHER LAWS AND REGULATIONS

The provisions of this Policy shall apply in addition to, and shall be subordinated to any requirements imposed by applicable federal, state, or local laws, regulations or judicial decisions. Unenforceable provisions of this policy shall be deemed to be deleted.

DRUG AND ALCOHOL POLICY EMPLOYEE ACKNOWLEDGMENT

I acknowledge that I have read and understand the county Drug and Alcohol Policies and acknowledge that the provisions of the Policy are part of the terms and conditions of my employment and that I agree to abide by them by signing below.

Date: _____

Signature of Employee

Print Name

A copy of the Burnet County Drug and Alcohol Policy is located on the county website www.burnetcountytexas.org. Click on Departments & choose Human Resources. Click on Safety Policy-Drug & Alcohol Policy starts at page 5.

EMERGENCY RESPONSE POLICY

In the event of an accident occurs, each employee shall take the necessary emergency response as outlined below:

PERSONNEL INJURIES

If an employee is injured, other employees in the immediate area should assist the injured. The senior employee on site shall have the responsibility to assess the severity of the injury and is authorized to take action as indicated below:

1. Provide immediate first aid to the injured.
2. For severe injuries, provide first aid as necessary, make the injured as comfortable as possible, (but do not move the injured party), and call or have another employee call **911**.
3. If the injury is not severe but needs a physician's attention, the supervisor or senior employee shall escort the injured employee to a local medical facility.
4. At the first opportunity, the senior employee should contact, or designate someone to contact the Burnet County Sheriff's Office, to report the accident so that the next of kin can be notified right away. The Sheriff's Office will also notify the Loss Control Committee member on call as soon as possible.

BOMB THREAT

In the event of a bomb threat, all employees should evacuate the facilities. Get far enough away to prevent injury from flying glass and debris and call **911**.

HAZARDOUS MATERIAL INCIDENT

Chemical spills or exposure to chemical accidents can be extremely hazardous. Often the chemicals involved can change from dormant to volatile when exposed to the environment or in contact with other materials. Evacuate all employees where a hazardous material incident occurs and then call **911**.

ACCIDENT INVESTIGATION TEAM STEPS FOR PERFORMING PROPER ACCIDENT INFORMATION

After the victim has been treated, the following steps should be taken:

- Secure the site to prevent recurrence and to protect the facts.
- Advise the Loss Control Coordinator or Accident Investigation Team.
- The Accident investigation Team should respond immediately to gather information.
- Remember that we are “Fact Finding” not “Fault Finding”.

RECOMMENDED RESPONSE PROCEDURES

- Photographing accident scene.
- Sketching the accident site.
- Interviewing witnesses-some techniques are to be a good listener, ask open questions, interview one at a time, do not intimidate, look for causes not fault, interview at the site if possible, do not reenact the scene.
- Gathering and maintaining physical evidence.
- Take measurements.
- Fill out accident investigation form and provide details to claims coordinator.

RECOMMENDED ACTION PROCEDURES

- The loss control committee should discuss and evaluate findings and develop corrective measures to prevent recurrence.
- Policies should be developed to answer the causes of the accident.
- The loss control coordinator should submit findings to the Commissioners Court along with new policies or recommendations.
- The Committee should communicate the new policy to employees and see that recommendations are implemented.

RECOMMENDED FOLLOW-UP PROCEDURES

Once the accident investigation is complete and the basic causes are evaluated, recommendations to correct them are developed and put on the accident investigation form. These recommendations should be given to department heads and reported to the Commissioners Court in loss control committee reports, which should be a regularly scheduled agenda item in Commissioners Court. In subsequent reports to the court, it should be noted whether those recommendations are pending or if they have been completed.

Follow-up is very crucial. If the recommendations are never implemented, then the accident investigation has given no positive result. Recommendations are much easier to complete when alternatives are given. Some recommendations require time for planning and budgeting. Allow time for this process, but keep the follow-up in place.

BASIC ELEMENTS OF HAZARDOUS COMMUNICATOIN

All Departments will:

- Post the Texas Hazardous Communication Act of 1985.
- List chemicals where they are used with a Material Safety Data Sheet (MSDS)
- Label containers for easy identification
- Obtain and post MSDS forms
- Train employees:
 - How to read MSDS
 - How to use chemicals
- Document Training
- Report chemicals to Texas Department of Health under the tier two reporting program
- Know how to respond to a hazardous material incident
- Know the law pertaining to the transportation of hazardous material

NOTICE TO EMPLOYEES

THE TEXAS HAZARD COMMUNICATION ACT OF 1985, TEXAS CIVIL STATUTES, ARTICLE 5182B, REQUIRES CERTAIN EMPLOYERS TO

Provide employees, local fire departments, the Texas Department of Health, and other interested persons with specific information on the hazards of chemicals in use. As required by law, your employer must provide you with certain information and training, starting January 1, 1986.

A brief summary of the law follows:

1. Employers must develop a list of hazardous chemicals used or stored in the work place, each in excess of 55 gallons or 500 pounds. Smaller quantities may be reported. This list shall be updated by the employer as necessary, but at least annually. The list must be sent to the Texas Department of Health at least annually, to be made available to the general public on request.
2. Employees who may be exposed to hazardous chemicals shall be informed of the exposure by the employer and shall have ready access to the work place chemical list and to the most current material safety data sheets, which detail physical and health hazards and other pertinent information. The list must state which chemicals are present in each work area.
3. Employees shall receive training by the employer on the hazards of the chemicals and on measures they can take to protect themselves from those hazards, and shall be provided with appropriate personal protective equipment. This training shall be provided with appropriate personal protective equipment. This training shall be provided at least annually and must be reported by the nonmanufacturing employer to the Texas Department of Health within 30 days of completion.
4. Employees shall not be required to work with hazardous chemicals from unlabeled containers, except portable containers for immediate use, the contents of which are known to the user.
5. Employers must provide the names and telephone numbers of knowledgeable company representatives to the local fire department, as well as other information if the fire department requests it.
6. The following chemicals are exempted from coverage by this act: articles that do not normally release hazardous chemicals (food, cosmetics, and pesticides for use but not pesticide formulation), hazardous waste, and some other materials. Most of these are covered by other acts. Manufacturers are exempt from some provisions of the State law since they are covered by other acts. Manufacturers are exempt from some provisions of the State law since they are covered under similar rules adopted by the Federal Occupational Safety and Health Administration (OSHA).
7. Employees may file complaints with the Texas Department of Health, and may not be discharged or discriminated against in any manner for the exercise of any rights provided by this act. Employees and citizens may make written requests to the Texas Department of Health to require listing of small quantities of certain highly hazardous chemicals.

EMPLOYERS MAY BE SUBJECT TO ADMINISTRATIVE PENALTIES AND CIVIL OR CRIMINAL FINES RANGING FROM \$500 TO \$25,000 FOR VIOLATIONS OF THIS ACT.

Further information may be obtained from:

Texas Department of Health
1100 West 49th Street
Austin, TX 78756
512-458-7410

HAZARDOUS MATERIALS COMMUNICATION POLICY

All chemicals are potential health hazards; therefore, it is the policy of Burnet County that compliance with the federal codes and state rules and regulations will be strictly followed by employees and supervisors.

Each county department will prepare a list of all solid, liquid and gaseous chemicals being used or stored at all locations where employees congregate or perform their assigned duties. It shall be the responsibility of the department's elected official, manager or supervisor to prepare the aforementioned list and contact the chemical manufacturer and obtain the corresponding Material Safety Data Sheets (MSDS) for each of the chemicals indicated on the list. MSDS sheets will be placed in a protective prominently labeled binder that is accessible to employees. The chemical list and MSDS sheets will be kept current and cross checked quarterly and updated as necessary by the department head.

When ordering replacement chemicals, the responsible party shall require as part of the purchase, that the manufacturer provide one copy of the MSDS sheets by return mail and attach one copy of the MSDS to the materials when delivered. No materials will be accepted without the MSDS sheets. All chemicals delivered must be labeled upon receipt. Only industry standard government approved labels will be used. Labels will be affixed to the container in a location where employees can easily identify the material.

The department's elected official, manager or supervisor is responsible to train all employees who may come in contact with the chemical hazards. Employees must know:

- The hazards of the chemicals being used.
- The appearance or smell of the hazardous chemical to which they may be exposed.
- How to locate, understand and read a MSDS sheet.
- How to properly use the material in a safe manner.
- What personal protective equipment is required while using the material.
- Proper use of required personal protective equipment.
- Hazardous Material Incident Emergency Response procedure.

TIER TWO REPORTING

It is the responsibility of a department's elected official, manager, department head or supervisor to insure that any hazardous material present at your work site in excess of 500 pounds or 55 gallons is reported to the Texas Department of Health. There are special reporting thresholds for the extremely hazardous substances. All hazardous chemicals are to be reported by March 1st of each year, using a Tier Two Reporting form. Fines for noncompliance range from \$5.00 to \$500.00 per occurrence.

HAZARDOUS MATERIAL INCIDENT RESPONSE PROCEDURE

Chemical spills or exposure to chemical accidents can be extremely hazardous. Often the chemicals involved can change from dormant to volatile when exposed to the environment or in contact with other materials. Evacuate all employees where a hazardous material incident occurs and then call:

911

HAZARDOUS MATERIAL TRANSPORTATION

Hazardous Materials pose a risk to health, safety and property during transportation. You must have a commercial driver's license with a hazardous material endorsement before driving a vehicle carrying hazardous materials. To get the endorsement, you must pass a written test covering the hazardous material transportation rules.

Everything you need to know to pass the written test is in the Texas Commercial Motor Vehicle Drivers Handbook. Your supervisor can help you obtain a copy of this book.

GENERAL SAFETY RULES

The following rules will be applicable to all work areas. These rules, along with those developed by the combined efforts of the department heads and their employees for a specific department, are helpful in promoting safety consciousness and reducing accidents.

1. Employees shall not turn on, use, repair, or operate any hazardous machine, tool, vehicle, crane, electricity, gas, steam, air, acid, caustic or other dangerous material or equipment unless authorized by a supervisor and adequately trained in the proper safety precautions.
2. Safety guards and devices furnished by the county or the department will be used.
3. Required and approved personal protective equipment will be worn.
4. Only tools, equipment, machines, etc. that are properly maintained and adjusted may be used.
5. Tools may not be modified.
6. Floors must be kept free of paper clips, pencils, rubber bands, electrical cords, tools, trash, coffee, food, or any other material or debris that might cause someone to trip or slip. Employees responsible for such material or substance spilled shall clean it up immediately.
7. Horseplay, running and practical jokes are prohibited because of potential slipping, tripping and collisions.
8. Employees shall immediately report all injuries or safety incidents to a supervisor.

CLOTHING & SAFE DRESS

1. Wear clothing appropriate to work assignments. Clothing should be clean and in good condition.
2. Supervisors are responsible for ensuring that employees are informed of the requirements for clothing that is suitable for the work to be performed.
3. For those working with machinery or in other hazardous operations, all wearing apparel should be well fitted, with no loose or flowing appendages.
4. Employees must wear shoes appropriate to the job.
5. Employees with long hair who work around moving machinery must wear adequate hair covering to avoid entanglement.
6. Jewelry such as rings, pendants, necklaces, earrings, watches, etc., shall not be worn whenever they constitute a hazard, i.e., working around moving machines, electrical or electronics equipment, etc.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment provides safer working conditions

THINK SAFETY FIRST – WORK SAFELY!

GENERAL

1. Protective equipment for eyes, face, head, protective clothing, respiratory devices and protective barriers shall be provided and used wherever necessary.
2. Where employees provide their own protective equipment, the department shall be responsible to assure its adequacy, including proper maintenance and sanitation.
3. Protectors shall:
 - Provide adequate protection
 - Be comfortable
 - Fit snugly and not interfere with physical movement
 - Be durable
 - Be capable of being disinfected
 - Be easily cleaned
4. Personal protective equipment shall comply with the standards of the American National Standards Institute.
5. Protectors shall be maintained in a sanitary and reliable condition at all times. Safety devices, including protective clothing worn by the employee, shall not be interchanged among employees until properly cleaned. When ordinary cleaning will not remove the risk of infection, additional precautionary measures may be required.

BODY

1. Appropriate clothing shall be worn at all times. This may include laboratory coats, rain coats, aprons, full jump suits, bright reflective vest, etc.
2. Employee must wear an appropriate hearing protection device whenever exposed to hazardous noise.

EYES AND FACE

1. Employees working in locations where eye hazardous substances, or strong rays are inherent must wear eye protection.
2. The employer shall provide appropriate protection.
3. Face and eye protection equipment shall be kept clean and in good repair. The use of this equipment with structural or optical defects shall be prohibited.
4. Only safety eyewear or face wear which meets the American National Standards Institute (ANSI) – Z87 standard is permitted.

FEET

1. Appropriate foot wear is required for all employees.
2. Safety footwear must meet ANSI standard requirements.

HANDS

Employees performing industrial or construction work will be provided with good general purpose gloves appropriate for the type work being performed.

HEAD

1. Employees working where there is danger of head injury from impact, falling or flying objects, or from electrical shock and burns, must wear a protective helmet.
2. Helmets that protect employees against impact and penetration of falling and flying objects, must meet the applicable ANSI standard for industrial head protection.
3. Helmets that protect against exposure to high voltage electrical shock and burns must also meet the applicable ANSI standard.

LIFTING AND MANUAL MATERIAL HANDLING

GENERAL RULES

This county recognizes the fact that lifting and material handling type injuries make up a major portion of our risk for employee injury. We also recognize that in order to reduce the risk of this type of injury, we must find alternatives to manual lifting and manual material handling. Employees are to follow these procedures when handling materials:

1. Try to eliminate the need for lifting or reduce the risk for lifting injuries through:
 - a. Organizing storage of materials.
 - b. Limiting bulk and weight of materials to be lifted. Keep package sizes manageable. (Remember that bulky and awkward objects cause most material handling injuries.)
 - c. Keeping aisle ways clear when carrying materials to prevent trips, stumbling, etc.
 - d. Be aware of the weight of the object. Under estimating or over estimating the weight of an object can lead to injury.
 - e. Wipe off wet, greasy or slippery objects before handling them.
2. Use mechanical lifting devices whenever possible, rather than lifting manually. If the appropriate device is not available, contact your supervisor or someone on the Loss Control Committee so management can plan and budget those items.
3. Lift as a last resort, if mechanical aids are not available and the lift is necessary. This county recognizes that all manual lifting cannot be eliminated. When lifting alone, follow either of the appropriate lifting procedures below:
 - a. Two hand squat lift involves six (6) steps:
 - i. Keep feet parted – one alongside and one behind the object.
 - ii. Keep back straight, nearly vertical.
 - iii. Tuck Elbows and arms in and hold load close to body.
 - iv. Grasp the object with your whole hand, not just your fingers.
 - v. Tuck your chin in.
 - vi. Keep body weight directly over feet.
 - b. Assisted one-hand lift should be used when it is impossible to bend the knees and squat. Reaching over into a container to lift something would be a good example of this.
 - i. Place the non-lifting hand on the container top, bend over the container.
 - ii. While bending over, kick the foot on the same side as the non-lifting hand rearward to provide forward body balance. (optional)
 - iii. Reach and grasp object to be lifted.
 - iv. Push down with non-lifting hand on the container top raising the upper body to a vertical position. Be sure to let the non-lifting arm do the work, not the back.
 - v. Remember, this technique is not always practical. This type of lift should be limited to a load weight of 15-20 lbs.

- c. Twisting the body should always be avoided. Turn your body as a whole unit to reduce the risk of an injury while lifting and carrying loads.
4. Employees who will be lifting objects on the job should keep themselves in good physical condition. If you are going to be lifting for a prolonged period, take time to do some stretching and warm up exercises prior to starting the job.

OFFICE EQUIPMENT

SAFETY RULES FOR COPY MACHINES

1. There are two basic types of office copy machines. (1) Dry photo copiers that use a powder toner material. And (2) wet photo copiers that sometimes use combustible hydrocarbon based toner.
2. All photocopiers, regardless of manufacturer, emit fumes at varying levels. Some are more odorous than others. It is recommended that all copiers be located only in areas that have adequate ventilation. Copiers should be a minimum of 10 feet from any employee work station.
3. Material data sheets (MSDS) for all chemicals used in these processes should be posted in a central location and all employees who are required to service the machines must be trained in the proper use of the chemicals on a yearly basis.

ELECTRIC EXTENSION CORDS FOR OFFICE USE

1. Flexible cords should be in good repair and must bear the underwriters laboratory label (UL) or meet NFPA 70 standards. Do not use frayed or damaged cords.
2. Only use three wire (grounded) electrical cords, where applicable.
3. If the permanent electrical system does not have a ground circuitry, only connect the extension cord to a ground fault interrupting device (GFI).
4. Flexible cords should be short (6-8 feet in length), limited to temporary use. Never cross traveled pathways unless suitably protected to avoid damage or tripping hazards.
5. Do not use two-wire flexible cords and adaptor plugs because equipment is not grounded when connected to them.
6. Never splice any flexible cord or electrical cord.
7. Never tack cords to walls, etc. Keep cords away from pinch points and hot or wet surfaces. Never string cords across the ceiling, over pipes, or near sinks, and never place cords or plugs under physical stress or tension (See "Electrical Safety" for additional details).

OFFICE SAFETY

1. Pencil sharpeners shall not be installed where they might be an obstruction.
2. Electric cords must be kept in good repair. Replace cords when outer insulation is broken. All cords must have U.L. Label.
3. Equip fans with suitable guards. Do not place fans where they might be struck.
4. Thumbtacks and other sharp, pointed objects should be kept in containers, not loose in desk drawers.
5. Fasten individual upright shelves, lockers and cabinets to floors or walls, if the possibility of overturning exists. Where there are two (2) or more, fasten them together.
6. Do not open more than one (1) drawer of a file cabinet at one time. Close drawers when not in use.
7. When it is necessary to store material on top of lockers or file cabinets, consider the weight, shape and stability of the material.
8. Have defective chairs repaired or replaced promptly.

9. Do not tilt back in straight chairs.
10. Use care when cleaning glass desk tops.
11. Use knives, razor blades, scissors, or shears with care. Sheath cutting edged instruments when not in use.
12. Equip paper cutters with safety bar. Adjust blade spring tension so that the blade will not fall from its own weight.
13. Arrange desks so that electrical and telephone outlets and leads are not tripping hazards.
14. Repair or replace splintered or jagged edges, or other defects found on office furniture.
15. Spindle (spike) files should not be used.
16. Before using office machines, be sure that they are properly located and not in danger of falling.
17. Never clean or lubricate electrical appliance when they are in operation. When cleaning electrical appliances be sure the appliance is turned off and the plug removed.
18. Protection should be provided against moving parts on addressograph, bookkeeping, tabulating machines and other types of power-driven office equipment.
19. Do not put broken glass in wastebaskets. Broken glass should be packed in heavy paper marked "Broken Glass" and placed alongside the wastebasket at the end of the day so that the person removing waste paper will not be cut accidentally.
20. Distorted or damaged metal or wire baskets should be repaired or replaced promptly, since sharp edges and points can cause injury.
21. Small ladders and stands must be equipped with treads of non-slip material and safety feet.
22. Ladders having broken or split side rails or steps will be immediately taken out of service and destroyed.

BUILDINGS

ADMINISTRATIVE RESPONSIBILITY FOR BUILDINGS

The responsibility for the condition of all building and equipment rests with the department(s) occupying the building. However, the Loss Control Committee may be called upon by the Department Head for assistance.

BUILDING INSPECTIONS

Occupants of buildings should make periodic inspections to keep hazards at a minimum in all areas, covering such items as:

1. Good housekeeping.
2. Condition of stair treads, floor tiles and carpeting.
3. Exposed electrical and telephone outlets on the floor.
4. Loose stairway railings.
5. Windows for cracked glass.
6. Walls and door frames for protrusions.
7. Office furniture and machines in need of repair.
8. Proper storage of materials.
9. Adequate lighting and ventilation.
10. Insects and other pests.
11. Locks on security doors.
12. Fire Extinguisher:
 - a. Every employee shall be instructed in the proper use of fire extinguishers.
 - b. Expired re-charge dates on equipment should be reported to the Loss Control Committee.
13. Electrical appliances (coffee pots, toaster ovens, etc.) shall be turned off when not in use and especially at the end of the work day.

Department Heads should document discrepancies found and submit requests for correction to the Loss Control Committee.

CORRIDORS AND AISLES

1. Corridors
 - a. Every corridor shall not be less in width than 48 inches.
 - b. Corridors shall have a clear height of not less than seven (7) feet measured to the lowest projection from the ceiling.
 - c. The required width of corridors shall be unobstructed.
2. Aisles
 - a. Every portion of every building in which there are seats, tables, equipment or similar materials installed, shall be provided with aisles leading to an exit.
 - b. Where aisles are required, equipment, parts and stocks shall be arranged and spaced to provide not less than six (6) feet, eight (8) inches headroom to a safe means of egress from the building. In existing installations, which do not comply with the minimum headroom clearance and is impractical to correct, a suitable warning sign shall be placed near or on the obstruction and padded.

DOORS

1. Exit doors should open to the outside of the building. When fully opened, the door shall not obstruct the exit width or impede the flow of traffic from any other route.
2. Every required exit doorway shall be of a size as determined by NFPA standards for occupancy of the building.
3. Exit doors shall be operable from the inside without the use of a key or any special knowledge or effort.
4. A latch or other fastening device on a door shall be provided with a knob, handle, panic bar, or other simple type of releasing device, the method of operation of which is obvious even in darkness.
5. A door designed to be kept normally closed as a means of egress, such as a door to a stair enclosure or stairwell, shall be provided with a reliable self-enclosing mechanism, and shall not at any time be secured in the open position. Signs should be posted on such doors.
6. When a door is required to be equipped with panic hardware, the panic hardware shall cause the door latch to release when sufficient force is applied to the releasing devices in the direction of exit travel. No lock, padlock, hasp, bar, chain, or other device, or combination thereof shall be installed or maintained at any time or in connection with any door on which panic hardware is required if such device prevents or is intended to prevent, the free use of the door for purpose of egress.
7. Doors swinging both ways, located between rooms such as a kitchen and dining room shall be provided with view areas. One view area shall be provided for each door of swinging double doors.
8. No turnstile or similar device to restrict travel to one direction, or to collect fares or admission charges, shall be placed as to obstruct any required means of egress.

ELEVATORS

1. In each elevator there shall be posted a card or plate indicating the safe carrying capacity. The safe capacity for passenger elevators shall be expressed in terms of the maximum number of passengers and for freight elevators in terms of the number of pounds. The rated capacity shall never be exceeded.
2. Self-service elevators shall have operating instructions and emergency procedures clearly outlined and posted inside the car.
3. Passengers shall guard against tripping when entering or leaving an elevator. No one shall get on or off an elevator while it's in motion.
4. Passengers shall not use freight elevators unless they are authorized for passenger use. Elevators not authorized for passenger use shall carry signs to that effect.
5. Passenger elevators and automatic operation freight elevators shall be provided with an emergency alarm system, operable from within the car which will provide effective means for summoning assistance.
6. No obstruction or storage shall be placed in the exit.
7. At every required exit doorway, and whenever otherwise required to indicate clearly the direction of exit, an exit sign shall be provided.

8. Every required sign designating an exit or way of exit shall be so located and of such size, color, and design as to be readily visible. No decorations, furnishings, or equipment which impair visibility of an exit sign shall be permitted.
9. Every sign shall be illuminated by a reliable light source and maintained on a separate circuit or separate source of power.

GUARDRAILS

1. Guardrails shall be provided on all open sides of unenclosed roof openings, open landings, balconies or porches, platforms, runways, ramps, or working levels more than thirty (30) inches above the floor, ground, or other working area. Wherever guardrail protection is required, state of federal standards will be applied.
2. A guardrail shall consist of top rail, mid rail or equivalent protection, and posts, and shall have a vertical height within the range of forty-two (42) inches to forty-five (45) inches from the upper surface of the top rail to the floor, platform, runway, or ramp level. Such rails shall be so constructed to withstand a force of 200 lbs. applied downward or horizontally at any point.

PLACES OF ASSEMBLY

1. Every place of assembly shall maintain aisles and/or corridors in accordance with the provisions of this chapter, "Corridors and Aisles".
2. Where smoking is permitted, there shall be provided proper ashtrays, and at other convenient places approved noncombustible ashtrays or match receivers should be provided.
3. Fire extinguisher and/or fire hoses shall be visible and accessible at all times.
4. No person shall permit overcrowding or admittance of any person beyond the approved capacity of any place of public assemblage.
5. No person shall cause or permit any open flame to be used in any place of public assembly except when used in conjunction with approved heating or cooking appliances, or with special approval from the Fire Marshall.

STAIRWAYS

1. Every stairway or ramp serving any building or portion thereof shall conform to the requirements as set forth in NFPA and other state or federal standards.

WORK SPACE ACCESS

1. Every permanent elevated location, where there is machinery, equipment, or material which is customarily operated, adjusted, or otherwise handled shall be provided with a safe platform or maintenance runway. Access shall be by means of either fixed ladders or permanent ramps or stairways.
2. Every equipment room should have an opening large enough for an individual to exit at the opposite side from the door.

WORK SURFACES

FLOORS

1. All working surfaces such as floors and corridor type areas shall be kept in good repair so that they may be kept clean and orderly. Grease, water or other slippery substances shall not be allowed to accumulate. It should be cleaned up at once.
2. Tripping hazards are a major source of falls, and therefore, floors and other walking surfaces are to be kept as clear and unobstructed as possible.
3. Cords must not cross aisles or work area floor space without approved type ramps or other protection which eliminates the trip hazard.
4. Mats and gratings or other non-slip materials shall be used in wet process areas and other locations where drainage is necessary.
5. Highly polished floors may present slipping hazards. To minimize this danger, wax that is applied on it should be an approved water emulsion wax of the non-slip type and applied in accordance with applicable instructions.
6. Carpeting shall be laid smoothly, and loose or torn floor covering shall be promptly repaired, replaced, or removed. Rugs not securely fastened to the floor shall have a rubberized non-slip backing or shall be laid over pads made of rubber or other slip-resistant material.
7. Permanent roadways, walkways, and material storage areas in outside yards shall be maintained free of dangerous depressions, obstructions and debris.
8. All interior access ways where vehicles or material handling powered machines are used, the access way will be properly marked with reflective paint or tape.

FLOOR OPENINGS

1. Floor openings and floor holes into which a person can accidentally walk, shall be guarded by either a standard railing on all exposed sides or a floor opening cover of standard strength hinged in place. When cover is not in place, it shall be protected by a removable standard railing.
2. Floor opening covers should be made of solid construction, but where there is no exposure to falling materials, grill or slatted covers with openings not over one (1) inch in width may be used. Covers should be on non-slip surfaces. They shall not project more than one (1) inch above the floor level.

LADDERS

1. Straight ladders, step ladders, library type ladders, safety stools, and other climbing equipment must be made available as necessary and be maintained in a safe condition. Personnel must not be permitted to climb onto cabinets and other furnishings to reach elevated storage items or to work with racks or equipment installed above benches.
2. Ladders shall not be loaded in excess of the safe capacity for which they were constructed. Long ladders shall be braced to prevent undue deflection.
3. Portable ladders shall be erected at a pitch of 75-1/2 degrees for a maximum balance and strength. A simple rule for setting up a ladder at the proper angle is to place the base a distance from the vertical support equal to $\frac{1}{4}$ of the working length (the length along the ladder between the foot and top support) of the ladder.

4. Unless suitable hand-holds are provided, the side rails of all ladders shall extend at least three (3) feet above the upper landing.
5. Ladders other than step ladders, shall be secured against displacement by fastening the feet rigidly to the floor, by lashing or fastening the ladder at the top and installing safety shoes.
6. Ladders shall not be painted in such a manner as to hide the grain structure of defects. Ladders may be kept coated with a suitable transparent preservative material.
7. The lashing of ladders together to increase the length of the ladder is prohibited.
8. Portable metal ladders shall not be used in the vicinity of electrical circuits in places where they may come in contact. Portable metal ladders shall be legibly marked with signs reading "CAUTION-DO NOT USE Around Electrical Equipment", or equivalent wording.
9. No one shall be permitted to stand and work on the top three (3) rungs or cleats of a ladder.
10. Ladders shall not be placed in passageways, doorways, driveways or any location where they may be displaced by activities being conducted on any other work, unless protected by barricades or guards.
11. Ladders should be stored in such a manner as to provide ease of access and to prevent danger of accident when withdrawing a ladder for use. Wood ladders, when not in use, should be stored at a location where they will not be exposed to the elements, but where there is good ventilation. Ladders stored in a horizontal position should be supported at a sufficient number of points to avoid sagging and permanent set.
12. On stepladders, these rules apply:
 - a. Stepladders longer than 20 feet shall not be used.
 - b. A uniform step spacing shall be employed which shall be not more than twelve (12) inches.
 - c. A metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in open positions shall be component of each stepladder.
 - d. When in use, a step ladder should have a firm foundation and be secured or held while being used.
13. When ascending or descending, the user should face the ladder.

ELECTRICAL SAFETY

GENERAL

1. The current passing through the body is the key factor in any shock accident. Most of the over 1,000 electric shock fatalities which occur in the U.S. every year are due to voltages of less than 440 volts. It is imperative that respect be give all electrical equipment and circuits and that adequate precautions be taken regardless of voltage.
2. Keep your resistance high by keeping hands and feet dry. Avoid wet conditions when working around electricity.
3. Shoes must be worn at work (rubber soled shoes are preferable).
4. The removal of rings and watches is recommended.
5. Persons should never hold an energized electric appliance with wet hands, or when wearing wet shoes.
6. Do not touch electrical appliances when working at a sink.
7. Know the location of all power plugs and off switches on all equipment.
8. Assume all electronics gear is potentially lethal.
9. Report all shocks and defective equipment. A shock means something is wrong! The slightest shock when operating an electrical appliance in one location might, in another situation, result in instant death if part of the body made only slightly better contact with the ground or a grounded metallic object.
10. Use qualified electricians to do repairs.
11. In case of an accident.
 - a. Break connections to victim by turning off the power or use a nonconducting object to separate victim and source. Do not touch victim until contact is broken.
 - b. Begin artificial respiration as quickly as possible. External cardiac massage may also be helpful.
 - c. Obtain emergency assistance quickly by calling 911.
 - d. When an electrical fire occurs, use CO₂ or all-purpose chemical extinguisher only.

MEANS OF DISCONNECTING

1. All switches, circuit breakers, fuses and other control and protective devices shall be so located or arranged that they may be safely operated.
2. Each disconnecting means for motors and appliances, and each service, feeder, or branch circuit at the point where it originates shall be legibly marked to indicate its purpose unless located and arranged so the purpose is evident. The marking shall be sufficient durability to withstand the environment involved.
3. Devices intended to break circuit shall have an interrupting capacity sufficient for the voltage employed and for the current that must be interrupted.

FLEXIBLE CORDS

1. Flexible electrical cords shall be used only for: (a) pendants, (b) wiring of fixtures, (c) connection of portable lamps or appliances, (d) elevator cables, (e) wiring of cranes and hoists, (f) connection of stationary equipment to facilitate their frequent

- interchange, (g) prevention of the transmission of noise or vibration, (h) fixed or stationary appliances where the fastening means and mechanical connections are designed to permit removal for maintenance and repair, (i) data processing cables.
2. Flexible cords shall not be used: (a) as a substitute for the fixed wiring of a structure, (b) where run through holes in the walls, ceilings, or floors, (c) where run through doorways, windows or similar openings, (d) where attached to building surfaces, (e) where concealed behind building walls, ceiling or floors.
 3. Flexible cords shall be used only in continuous lengths without splice. The repair of hard-service flexible cords No. 12 and larger shall be permitted if the completed splice retains the insulation, outer sheath properties, flexibility and usage characteristics of the cord being splices.
 4. Flexible cords shall be so connected to devices and to fittings that tension will not be transmitted to joints or terminal screws. This shall be accomplished by a knot in the cord, winding with tape, by a special fitting designed for that purpose, or by other approved means which will prevent a pull on the cord from being directly transmitted to the joints or terminal screws.

GROUND-FAULT CIRCUIT INTERRUPTORS (GFCI)

Ground fault circuit interrupters (GFCI) shall be used on all portable electrical equipment i.e.: drills, saws, drop lights, portable heater, etc. when used in a hazardous area or under hazardous conditions.

1. Outdoors
2. Wet or damp areas inside or outside
3. Metal platforms

GROUNDING EQUIPMENT

1. Under any of the conditions described in (a) through (3) (e) below, exposed non-current-carrying metal parts of cord-and-plug-connected equipment likely to become energized, shall be grounded. (Refer to the National Electrical Code for exceptions).
 - a. In hazardous locations (flammable liquids and gasses present).
 - b. Where operated at over 150 volts to ground.
 - c. Potentially hazardous portable hand-held, motor-operated tools and appliances such as drills, wet scrubbers, sanders, floor polishers and saws.
 - d. Cord and plug-connected appliances used in damp or wet locations or by persons standing on the ground or on metal floors or working inside of metal tanks, or boilers.
 - e. Portable tools likely to be used in wet and conductive locations, unless double insulated.
2. Exposed noncurrent-carrying metal parts of fixed equipment likely to become energized under abnormal conditions shall be grounded when they are: (see National Electric Code for exceptions)

- a. Within eight (8) feet vertically or five (5) feet horizontally of ground or grounded metal objects and subject to contact by persons.
 - b. Located in a wet or damp location and not isolated.
 - c. In a hazardous location.
 - d. Supplied by a metal-clad, metal sheathed, or metal-raceway wiring method.
 - e. Operated with any terminal at over 150 volts to ground.
3. Exposed, non-current-carrying metal parts of the kinds of equipment described in (a) through (e) below, regardless of voltage, shall be grounded (see National Codes for exceptions).
- a. Switchboard frames and structures supporting switching equipment.
 - b. Generator motor frames in an electrically operated organ.
 - c. Motor frames.
 - d. Enclosures for motor controllers.
 - e. Electric equipment for elevators and cranes.

GROUNDING OF LIVE PARTS

1. Live parts of electric equipment operating at 50 volts or more shall be guarded against accidental contact by approved cabinets or other forms of approved enclosures or by:
 - a. Location in a room, vault or similar enclosure that is accessible only to qualified persons.
 - b. Suitable permanent, substantial partitions or screens so arranged that only qualified persons will have access to the space within reach of live parts.
 - c. Location on a suitable balcony, gallery or platform so elevated and arranged as to exclude unqualified person.
2. Entrances to rooms and other guarded locations containing exposed live parts shall be marked with conspicuous warning signs forbidding unqualified persons to enter.

METHODS OF GROUNDING

1. The grounding connection for metal noncurrent-carrying equipment shall be made on the supply side of the service disconnecting means.
2. The path to ground from circuits, equipment, and conductor enclosure shall:
 - a. Be permanent and continuous.
 - b. Have ample carrying capacity to conduct safely any currents liable to be imposed on it.
 - c. Have impedance sufficiently low to limit the potential above ground and to facilitate the operation of overcurrent devices in the circuit.
3. Metal noncurrent-carrying fixed equipment where required to be grounded shall be grounded by an equipment grounding conductor contained within the same raceway, cable, or cord or otherwise run with the circuit conductors. The conductor cover shall have continuous outer finish that is either green, or green with one or more yellow stripes.

4. Noncurrent-carrying metal parts of cord and plug-connected equipment (portable), where required to be grounded, shall be grounded by one of the methods indicated in (a), (b), or (c) below.
 - a. Use of a metal plate on the conductors supplying such equipment if grounding-type attachment plug with one fixed grounding contact is used for grounding the metal enclosure. The attachment plug should be secured to the metal plate and to equipment by connectors that are approved for the purpose.
 - b. Use of a grounding conductor run with the power supply conductors in a cable assembly or flexible cord properly terminated in grounding-type attachment plug with one fixed grounding contact. The covering shall have a continuous outer finish that is either green or green with one or more yellow stripes.
 - c. Use of a separate flexible wire or strap, insulated or bare, protected against physical damage.

FIRE PROTECTION

GENERAL

1. All fires, regardless of severity shall be reported to the Loss Control Committee. Information derived from these reports will assist in identifying areas and conditions that are hazardous. Corrective action to eliminate the hazard will be taken immediately.
2. All drapes, curtains, drops and Christmas trees located in corridors, stairways, lobbies, passageways and balconies shall be made of non-flammable material or be treated and maintained in a flame-retardant.
3. Exit lights, fire alarms, wet standpipe hose cabinets, and fire extinguisher shall not be concealed by any decorative material.
4. Every employee shall be instructed in the location and proper use of fire extinguishers.
5. All electrical appliances shall be turned off when not in use, especially at the end of the work day.

FIRE ALARMS

1. Fire alarms shall be provided for emergency signaling purposes at all county facilities.
2. Each fire alarm shall be securely mounted so that the bottom of the station is not less than 4 ½ feet and not more than six (6) feet above the floor.
3. Fire alarms shall be distributed throughout the buildings so that they are unobstructed, readily accessible and in the normal path of an exit.
4. The audible signal shall be of sufficient duration and intensity of 85d BA minimum and be capable of being heard by persons with average hearing ability at all locations inside the affected building.
5. All alarm systems shall be under the supervision of qualified persons. These persons shall test, inspect and have general charge of all alterations and additions.

FIRE EXTINGUISHER

1. Portable fire extinguisher are designed for small fires and are necessary even if the property is equipped with automatic sprinklers, standpipe and hose, or other fixed equipment.
2. Portable extinguishers shall be kept fully charged, operable, and in their designated places at all times.
3. Extinguishers shall be located where they will be accessible and immediately available in the event of fire. They shall be locate along normal paths of travel including exits from an area.
4. Extinguishers shall not be obstructed from view. In large rooms, and in certain locations where visual obstructions cannot be completely avoided, means shall be provided to indicate the location and intended use of extinguisher.
5. Extinguishers shall be installed on the hangers or in the brackets supplied, mounted in cabinets, or set on shelves.
6. Extinguishers mounted in cabinets or wall recesses or set on shelves shall face outward for easy access.

7. Fire extinguishers shall be provided for the protection of the building structure, the occupancy hazards contained therein, and for the protection of life.
8. Minimal sizes and numbers of fire extinguisher for flammable liquids (Class B) and energized electrical equipment (Class C) shall be provided on the basis of NFPA requirements.
9. Extinguishers shall be inspected monthly to ensure they are in their designated places, to ensure they have not been actuated or tampered with and to detect any obvious physical damage, corrosion, or other impairments.
10. Extinguishers removed from the premises to be recharged shall be replaced by spare extinguisher during the period they are gone.
11. Glass fire extinguishers shall be used only on wood or trash fires.

SPRINKLER SYSTEMS

1. Every high hazard occupancy shall have automatic sprinkler protection or such other protection as may be appropriate to the particular hazard, including explosion venting designed to minimize danger to occupants in case of fire or other emergency before they have time to utilize exits to escape.
2. Before shutting off a section of the fire sprinkler system to make system connections, notify the Loss Control Coordinator. Additional protection may be required.
3. Sprinklers which are located as to be subject to mechanical injury (in either the upright or the pendent position) shall be protected with approved guards.
4. Sprinklers shall not be painted and any sprinklers which have been painted, except for factory applied coatings applied for identification of temperature ratings shall be replaced with new approved sprinklers.
5. Water flow alarms shall be provided on all sprinkler installations. All systems should be equipped with either alarms to outdoor locations or to central control panels.
6. Clearance of at least eighteen (18) inches shall be maintained between sprinkler deflectors and top of storage to reduce possibility of obstruction to the distribution water.
7. In order to ensure proper operation of the automatic sprinkler systems, each system is to be tested on a periodic basis at times that will cause the least disruption of normal activity.

STANDPIPES, HOSES AND HYDRANTS

1. Hose outlets shall be within easy reach of a person standing on the floor and in no case should be over six feet from the floor. Hose stations shall be located conspicuously within the immediate area and where they are not likely to be obstructed. In buildings divided by numerous partitions, standpipes should be so located that the streams can be brought to bear in any room.
2. Each hose outlet provided for the use of building occupants shall be equipped with not more than seventy-five (75) feet of approved small fire hose attached and ready for use.
3. Nozzles shall be attached to each hose.
4. A hose valve shall be provided at each standpipe outlet for attachment of hose.

5. Inspections shall be made semi-annually to assure the hoses are in proper position on racks, and the standpipe system and fire hydrants are in good operating condition.

STORAGE & HANDLING OF FLAMMABLE LIQUIDS & MATERIALS

GENERAL

1. Limit the quantities at any one location to those actually necessary, but not to exceed the limits specified below.
2. Prohibit smoking and eliminate other possible ignition sources wherever flammable liquids are stored or used.
3. Avoid sparks from static charges generated by pouring; connect dispensing and receiving containers (if metal) by a suitable electrical conductor.
4. Provide fire barriers, fire alarms, and fire equipment, as appropriate, at all locations of storage and use.
5. Prevent accumulation of vapors by careful handling and by providing adequate ventilation.
6. Use only approved containers, e.g., safety cans (*) or metal drums, for all transportation and handling. (Refer to Hazardous Material Transportation)
7. Label every container used for flammable liquids with the name of the material and the words "Danger – Flammable – Keep away from heat, sparks and open flames – keep closed when not in use".

CLASSIFICATION & HANDLING RESTRICTIONS

Classification Code	1A
Flash points	Less than 73 degrees F
Boiling points	Less than 100 degrees F
Flammability Hazard	Extremely High
Classification Code	1B
Flash points	Less than 73 degrees F
Boiling points	Less than 100 degrees F
Flammability Hazard	Very High
Classification Code	1C
Flash points	73 degrees F – 100 Degrees F
Boiling points	
Flammability Hazard	High
Classification Code	II
Flash points	100 degrees F – 140 Degrees F
Boiling points	
Flammability Hazard	Moderate
Maximum container size	1A
Glass containers	1 quart

Metal cans	5 gallons
Safety cans (*)	5 gallons
Metal cans	60 gallons
Maximum container size	1B
Glass containers	1 quart
Metal cans	5 gallons
Safety cans (*)	5 gallons
Metal cans	60 gallons
Maximum container size	1C
Glass containers	1 quart
Metal cans	5 gallons
Safety cans (*)	5 gallons
Metal cans	60 gallons
Maximum quantities at any location (Isolated, special purpose bldg.)	
1A	1,100 gallons
1B	2,200 gallons
1C	4,400 gallons
II	8,800 gallons

- a. Special storage rooms (***) with automatic extinguisher:
All classifications – g gal/sq ft but not to exceed 750 gallons.
- b. Special storage rooms (***) without automatic extinguisher:
All classifications – 2 gal/sq ft but not to exceed 300 gallons.
- c. Offices and other areas of use not in safety cans:
All classifications – 10 gallons
- d. Offices and other areas of use in approved safety cans(*):
All classifications – 25 gallons.
- e. Offices and other areas of use in approved safety cabinets (**):
All classifications – 60 gallons.

(*) Safety cans must be equipped with automatic closure for evaporation control and overpressure reliefs; they must be equipped with flame arrestors and Teflon gaskets at all openings.

(**) Safety cabinets must be of double-wall steel construction with three-point locking door, and a two-inch sill at the bottom of the door. Label: “Flammable – Keep Fire Away.”

(***) Inside storage rooms must have approved self-closing fire doors, liquid-tight seal where walls join the floor, a four-inch sill or equivalent sump with drain to a safe location; a gravity or mechanical ventilation system shall provide at least six complete changes of air per hour.

VAPORS, FLAMMABLE

1. Ventilation shall be sufficient so that under normal operating conditions concentrations of flammable vapors or gases in buildings, rooms or similarly enclosed places shall not exceed 20 percent of the lower explosive limit for such vapors.
2. No source of ignition, shall be permitted in any location, indoors or outdoors where the concentration of the flammable gases or vapors exceeds or may reasonably be expected to exceed 20 percent of the lower explosive limit in the working atmosphere.
3. Smoking is forbidden in any location where flammable vapor is present.

COMPRESSED GAS

1. Cylinders shall be stored in well-ventilated, dry locations, at least 20 feet from highly combustible materials such as oil and grease.
2. Cylinders may be stored in the open, but in such cases, protection is needed against the weather, from the dampness of the ground, and containers should be shaded against the direct rays of the sun. Bulk storage is to be in approved rooms or outside enclosures. Bulk storage cylinders should be chained and security measures taken to prevent tampering and loss.
3. Do not store empty cylinders with the full ones, and do not place cylinders where they may become part of an electrical circuit.
4. All gas cylinders in service or storage, empty or full, shall be securely held upright in substantial racks or secured to other rigid structures so that they will not fall or be knocked over. During storage, cylinder caps should be in place.
5. All cylinders are to be considered full unless properly identified as empty. Empty cylinders should be returned to the supplier and not be permitted to accumulate. To prevent contamination and even explosive mixtures in cylinders, always leave at least 25 psig minimum pressure in all "empty" cylinders. Do not leave an empty cylinder attached to a pressurized system.
6. Gas cylinders in portable service shall be conveyed by suitable trucks to which they are securely fastened. During movement, cylinder caps should be in place.
7. Compressed gas cylinders shall be legibly marked, for the purpose of identifying the gas content, with either the chemical or the trade name of the gas. Such marking shall be by means of labeling, and shall not be readily removable. The marking shall be located on the shoulder of the cylinder.
8. Cylinders should not be accepted unless the cylinder contents are clearly labeled. Do not accept cylinders which are damaged or do not have a valve protection cap.
9. Oxygen cylinders shall never be stored near highly combustible materials, or other fuel gas cylinders, nor near any other substances likely to cause or accelerate fire. Systems used for other gases must never be used for oxygen.

10. No attempt shall ever be made to transfer gases from one cylinder to another, to refill cylinders, or to mix gases in a cylinder.
11. Never force a gas cylinder valve. If the valve cannot be opened by the wheel or small wrench provided, the cylinder should be returned.
12. Use Compressed Gas Association (CGA) approved fittings and components.
13. Each department head shall determine that compressed gas cylinders under his control are in a safe condition to the extent that this can be determined by visual and other inspection. Cylinders with distinct visual bulge shall be removed from service until the nature of the defect is determined.
14. Compressed gas cylinders shall have pressure relief devices installed and maintained in accordance with requirements of the Compressed Gas Association. Types of safety relief devices are as follows:
 - Frangible disc
 - Fusible plug
 - Safety relief valve
15. Piping used with compressed gasses or air systems shall be steel, wrought iron, brass or copper pipe, or seamless copper, brass or stainless steel tubing. Piping systems shall be protected by pressure relief devices set to function at not more than the design pressure of the systems and discharging upwards to a safe location. All locations where the system can be accessed shall be equipped with a pressure regulator.

MACHINERY & MACHINE GUARDING

GENERAL

1. Machine guarding shall be provided to protect the operator and other persons in the machine area from injury as a result of coming in contact with the work in progress, and/or moving parts of the mechanical motions of the machines.
2. Guards shall be affixed to the machine where possible and secured elsewhere if for any reason attachment to the machine is not possible. The guard shall be such that it does not offer an accident hazard in itself.
3. The point of operation of machines whose operation exposes an employee to injury, shall be guarded.
4. The guarding device shall be in conformity with appropriate standards, or be so designed as to prevent the operator from having any part of his body in the danger zone during the operating cycle.
5. Distinct from guarding at the point of operation but complementary to it is the matter of guarding moving parts of equipment used in the mechanical transmission of power. These mechanisms include shafting, belts, gear, etc.
6. There shall be conspicuously displayed at all machines driven by electric motors that are controlled by fully automatic starters and which may injure employees, permanent signs giving warning that the machines are automatically controlled and may start at any time.

ABRASIVE WHEELS

1. Abrasive wheels shall be used only on machines provided with safety guards.
2. Such safety guards shall be hoods of such design and construction as to effectively protect the employee from flying fragments of a bursting wheel insofar as the operation will permit.
3. The hood guard shall cover the spindle end, nut, and flange projections. The safety guard shall be mounted so as to maintain proper alignment with the wheel, and the strength of the fastenings shall exceed the strength of the guard.
4. Grinding machines, work rests shall be used to support the work. They shall be of rigid construction and kept adjusted closely to the wheel with a maximum opening of one-eighth inch to prevent the work from being jammed between the wheel and the rest.
5. An adjustable tongue-guard shall be installed at the top end of the hood guard and clearance to the wheel periphery shall not exceed one-fourth inch.
6. The maximum angular exposure of the grinding wheel periphery and sides for hoods used on machines known as bench and floor stands should not exceed 90 degrees or one-fourth of the periphery. This exposure shall begin at a point not more than 65 degrees above the horizontal plane of the wheel spindle.
7. Wherever the nature of the work requires contact with the wheel below the horizontal plane of the spindle, the exposure shall not exceed 125 degrees.

GRINDING SAFETY PROCEDURES

1. All abrasive-steel machinery shall be equipped with protection hoods, which shall be of such design and construction as to effectively protect the user from flying fragments of a bursting wheel insofar as the operation will permit.
2. Wear a face shield, safety goggles, or cover goggles when grinding.
3. Grinding wheels shall be equipped with tool rests which are set not more than one-eighth inch from the wheel.
4. The side of an emery wheel shall not be used for grinding unless it is a special type wheel for that purpose.
5. Stand to one side when starting up a machine and do not exert great pressure on the wheel until it has had time to warm up.
6. All broken, cracked, or otherwise defective wheels will be reported to the supervisor immediately.
7. Mounting a new wheel should be done only by an experienced person.
8. Never use a wheel that has been dropped or has received a heavy blow, even though there is no apparent damage. The wheel may be weakened to a point where it may fly apart.
9. An abrasive wheel shall not be operated at a speed in excess of that recommended by the manufacturer of the wheel.

CLEANING, REPAIRING AND SERVICING

1. Machinery or equipment capable of movement shall be stopped and the power source locked off or disengaged to prevent inadvertent movement during cleaning servicing or adjusting operations. If the machinery or equipment must be capable of movement during cleaning or repair in order to perform the specific tasks, the employees shall minimize the hazard of movement by the use of extension tools (e.g. extended swabs, brushes, scrapers) or other methods of means. Employees shall be made familiar with the safe use and maintenance of such tools by thorough training.
2. Every power driven machine equipment with lockable controls or readily adaptable to lockable controls shall be locked out or positively sealed in the "OFF" position during repair work. Machines not equipped with lockable controls shall be considered in compliance with this order when positive means are taken, such as de-energizing or disconnecting the equipment from its source of power, or other action which will prevent the machine from inadvertent movement.
3. A sufficient number of accident prevention signs or tags and padlocks shall be provided and used. Signs, tags or padlocks shall have means by which they can be readily secured to the controls.

WASHING WITH SOLVENTS

1. Flammable liquids should not be used to clean floors, work benches or other large surface areas.
2. The substances listed below should not be used to clean machines, equipment, furniture:
 - Carbon disulfide
 - Chloroform
 - Ether

Pentachlorophenol
Tetrachloroethane
Tetrachloroethylene
Trichloroethylene
Freon

MACHINES, MISCELLANEOUS

1. When the periphery of the blades of a fan are less than seven (7) feet above the ground, floor, or working level, the blades shall be guarded. The guard shall have openings no larger than one-half (1/2) inch.
2. Each washing machine and dryer shall be equipped with an interlocking device that will prevent the inside cylinder from moving when the outer door on the case or shell is open.
3. Power drive Guillotine Paper Cutters shall be provided with:
 - a. A non-repeat device that will automatically lock the clutch mechanism into place so that the cutter cannot make a second stroke until the hand lever is again moved into the starting position.
 - b. A starting device which required the simultaneous action of both hands during the cutting motion of the knife.
 - c. Simultaneous operation of paper cutters by more than one operator shall not be permitted or required by the employer.
4. Hand powered cutters shall have a safety bar to prevent fingers holding paper from coming into contact with the blade & shall also be adjusted so as to not fall when released.

METAL WORKING EQUIPMENT

1. Metal lathe face plates and chucks should have no projections, or circular shields should be installed to prevent accidental contact with projections. Safety type lathe dogs with no projecting set screws should be used. Splash guards should be provided to protect the operator and the working area from cutting or cooling fluids thrown from the work. Pipe guards or other enclosures should be installed to prevent injury from stock projecting from turret lathes or automatic screw machines.
2. Milling machines should have a transparent shield over the cutter that will prevent accidental contact with the cutter and serve also as a chip guard. Guards may be adjustable.
3. Drill presses should have the spindle enclosed as completely as possible. The chuck shall be tightened securely with the key provided. The key shall not be left in the chuck. The work shall be firmly clamped and a center punch used to score the material before the drilling operation is started. If the work should slip from the clamp no attempt shall be made to stop it with the hands.
4. Circular metal saws should be equipped with a hood guard which automatically adjusts to the thickness of the stock being cut.
5. Band saws shall have upper and lower wheels completely enclosed with sheet metal or heavy small-mesh screen. The portion of the saw blade between the

upper saw guide and the upper saw blade wheel shall be completely enclosed with a sliding fixture attached to the guide.

RULES FOR SHOP SAFETY

1. Personnel shall not be permitted to operate any machinery until they have been instructed as to the hazards and the proper operation of such equipment and the use of protective devices.
2. All floors shall be kept in good repair and shall be free from protruding nails, splinters, holes, unevenness, and loose boards. Effective means shall be provided to prevent slipping.
3. Aisles shall be of sufficient width to permit the uncrowded and safe passing of personnel, trucks, or material. Width of aisles where motorized vehicles are used shall be 1.5 times the width of the load. Lines shall be painted on the floor or some similar method shall be employed to mark aisles.
4. During all working periods each working area, operation, or process shall be adequately lighted and harmful glare minimized.
5. Tools, machines, devices or other equipment that are hazardous because of defects or other conditions shall not be used until suitably repaired.
6. Areas around machines should be kept clear of obstructions and in non-slippery conditions. All spilled oil or grease shall be cleaned up immediately.
7. Do not clean chips from the surface of machines with compressed air or with hands; a brush or hood should be used. Where general cleaning of machines and equipment by compressed air is considered necessary, the outlet pressure shall be reduced to not more than 40 psi by means of a regulator or pressure reducing control nozzle designed for this purpose.
8. Cleaning of one's clothes with compressed air is prohibited.
9. When using portable electrical equipment around machine tools, keep all electrical cords clear of moving parts.
10. Do not place hand tools on machines. Keep them in their assigned location.
11. Goggles or face shields shall be worn when grinding or when there is danger of flying particles.
12. All guards on machines are to be properly adjusted and in working order before starting the machinery.
13. All gear and belt guards must be in place before machine is operated.
14. Machine guards must be kept in position at all times unless removal is authorized for repairs or cleaning.
15. Be sure all is clear before starting any machine.
16. A jig or fixture shall be used when cutting or forming irregular pieces or oblique angles.
17. All projection keys, setscrews, and other projections in revolving parts shall be made flush or guarded by a substantial metal cover as practicable.
18. All power saws shall be guarded underneath and behind the table to prevent possible personal contact.
19. A mechanical or electrical power control shall be provided on each machine which will make it possible for the operator to cut off the power from the machine being operated without leaving his position at the point of operation.

20. Do not repair, oil, or clean machinery while it is in motion. Lubrication while machinery is in motion shall be done by a remote control lubrication system.
21. Do not use electrical equipment or machines with frayed or otherwise deteriorated insulation.
22. Electrically driven portable machinery, as well as fixed electrical equipment, shall have the frame grounded.
23. Machines designed for a fixed location shall be securely anchored to prevent walking or moving.
24. Foot protection (safety shoes) should be considered where there is reasonable possibility of dropping heavy objects. Footwear which is defective or inappropriate to the extent that ordinary use creates possibility of foot injury (open toed sandals or tennis shoes) shall not be worn in shop areas.
25. Do not attempt to remove foreign objects from the eye or body; obtain proper medical treatment.
26. In case of injury, no matter how slight, report it to your supervisor.

DRILL PRESS SAFETY PROCEDURES

1. When drilling, tapping, or reaming material, see that it is securely fastened by blocks or clamps so that it cannot spin. In no case, should the operator rely on his hand to secure the material from turning.
2. When tightening drill of chuck or drill press, be sure to remove release key before starting the machine.
3. Run the drill only at the correct speed. Forcing or feeding too fast may cause broken drills and result in serious injury.
4. An operator should never attempt to loosen the chuck of a tapered shank drill unless the power is turned off.
5. When chucks are being removed from the spindle, the spindle should be lowered close to the table so the chuck will not fall.
6. Never use the hands to remove drillings from the work.
7. Caution: An open cuff of a shirt or coat sleeve shall be avoided when drilling, they may be caught on the moving parts.

HAND & PORTABLE POWERED TOOLS

HAND TOOLS

1. All hand tools shall be maintained in a safe condition free of worn or defective parts. Listed below are some examples;
 - a. Every file or rasp shall be equipped with a securely fitted handle.
 - b. The head of the hammer shall be wedged securely and squarely on the handle and neither the head nor the handle shall be chipped or broken.
 - c. Care shall be taken to select a screwdriver of the proper size to fit the screw. No screwdriver with a split or splintered handle shall be used. The point shall be kept in proper shape with a file or grinding wheel, and the screwdriver shall not be used as a substitute punch, chisel, nail puller, etc.
 - d. Only wrenches in good conditions shall be used; a bent wrench, if straightened, has been weakened and shall not be used. Always pull toward yourself, never push, since it is easier to brace against a backward pull than a sudden lunge forward should the tool slip or break.
 - e. Pliers shall be kept free from grease and oil and the teeth or cutting edges shall be kept clean and sharp. The fulcrum pin, rivet, or bolt shall be snug but not tight.
 - f. Only saws that are sharp and properly set shall be used. A crosscut saw shall be used for cutting across the grain; a rip saw for cutting with the grain.
 - g. Hack saws should be adjusted in the frame snug and tight enough to prevent buckling. The proper number of teeth per inch should be selected for the work. Pressure should be on the down stroke only.
 - h. Wrecking bars and crowbars shall be kept sharpened and free from burrs.
 - i. Before shovels are used, they shall be inspected by the worker to be sure that it has a strong, smooth handle, the grip is free from splinters and that the blade is smooth and sharp.
2. All tools shall be restricted to the use for which they are intended, and should be used only by those employees who are trained and qualified to use such tools.
3. Goggles shall be worn by persons using hand tools when there is a possibility of flying chips or other materials.

POWER TOOLS

1. Portable power tools shall be kept cleaned, oiled, and repaired. They shall be carefully inspected before use. The switches must operate properly and the cords be clean and free from defects. The plug shall be clean and sound.
2. All portable powered tools capable of receiving guards and/or designed to accommodate guards shall be equipped with such guards so as to prevent the operator from having any part of the body in the danger zone during operating cycle.
3. All electric powered portable tools with exposed noncurrent-carrying metal parts of cord and plug connected equipment which are liable to become energized shall be grounded. Portable tools protected by an approved system of double insulation, or its equivalent, need not be grounded. Where such an approved system is employed, the equipment shall be distinctly marked.

4. All hand-held powered tools of a hazardous nature such as circular saws having a blade diameter greater than 2 inches, chain saws, percussion tools, drills, tappers, fastener drivers, grinders with wheels greater than 2 inches in diameter, disc sanders, belt sanders, reciprocating saws, saber, scroll, and jig saws with blade shanks greater than one-fourth inch, and other similarly operating powered tools shall be equipped with a constant pressure switch or control that will shut off the power when the pressure is released. Other than circular saws, chain saws, and percussion tools, these tools may have a lock-on control provided that turn off can be accomplished by a single motion of the same finger or fingers that turn it on. All other less hazardous hand-held powered tools, such as routers, may be equipped with a positive "on-off" control.
5. Portable circular saws having a blade diameter over 2 inches, shall be equipped with guards or hoods which will automatically adjust themselves to the work; when the saw is in use, so that none of the teeth are exposed to contact above the work; and when withdrawn from the work, the guard shall completely cover the saw to at least the depth of the teeth.
6. All pneumatic powered portable tools shall be equipped with an automatic air shutoff valve that stops the tool when the operators hand is removed. Safety clips or retainers shall be used on all pneumatic tools.
7. Abrasive wheels shall be used only on machines provided with safety guards. The guard shall cover the spindle end, nut and flange projections.
8. All explosive-activated fastening tools muzzle ends shall have a protective shield or guard designed to confine any flying fragments or particles. The tool shall be so designed that it cannot be fired unless it is equipped with a protective shield or guard. A department shall not permit an employee to use a power-actuated tool until he has received training prescribed by the manufacturer.

POWER MOWERS

GENERAL RULES

Power mowers shall bear a label certifying that they have been constructed in accordance with the provisions of ANSI B71.1972.

Power mowers shall be maintained in safe operating condition in accordance with the Owner's Manual.

The controls used for stopping, starting, speed control, and attachment engagement shall be clearly identified by a durable label.

The mower blade shall be enclosed except on the bottom, and the enclosure shall extend 1/8-inch minimum below the lowest cutting point of the blade.

The discharge opening(s) shall be so placed or guarded that grass or debris will not discharge directly into the operator zone.

The blade(s) shall stop after either declutching or shutting off drive power.

OPERATING REQUIREMENTS

Area to be cut should be examined for loose objects such as tin cans, pieces of wire, or other objects. A serious injury can result from objects thrown by rotating blades.

The engine will be cut off when filling with gas. No smoking when filling.

Avoid slopes that are too steep for machines, whether using a push mower or riding mower.

Suitable foot, eye, and head protection should be worn when operating power mowers.

WALK-BEHIND MOWERS

The mower handle shall be fastened to the mower so as to prevent unintentional uncoupling while in operation.

A mower with a rope starter shall have a labeled, designated area for stabilizing the mower when starting the engine.

A shut-off control device shall be provided to stop operation of the engine. This device shall require manual and intentional activation in order to restart the engine.

RIDING ROTARY MOWERS

A disconnect device shall be provided between the engine (motor) or power source and the blade(s).

A means shall be provided to prevent starting of the engine when the wheel drive control is in the engaged positions.

A slip resistant surface or other means shall be provided to minimize the possibility of an operator's foot slipping off the foot support or platform.

EXPLOSIVE SAFETY

This section shall apply to the storage, transportation, and use of explosives and blasting agents.

STORAGE

Storage of Explosives:

- a. Explosives, including special industrial high-explosive materials, shall be stored in magazines which meet the requirements of the Uniform Fire Cod.
- b. Magazines shall be at all times in the custody of a Department Head who shall be held responsible for compliance with all safety precautions.
- c. Smoking, matches, open flames, spark-producing devices and firearms shall be prohibited inside or within 50 feet of magazines. Combustible materials shall not be stored within 50 feet of magazines.
- d. The land surrounding magazines shall be kept clear of brush, died grass, leaves, trash and debris for a distance of at least 50 feet.
- e. Magazines shall be kept locked except when being inspected or when explosives are being placed therein or being moved therefrom.
- f. Magazines shall be kept clean, dry and free of grit, paper, empty packages and rubbish.
- g. Magazines shall not be provided with other than approved artificial heat or light. Approved electric safety flashlights or safety lanterns may be used.
- h. Blasting caps, electric blasting caps, detonating primers, prime cartridges or any item such as a squib or electric match, the function of which is to ignite or detonate propellants, fireworks or explosives, shall not be stored in the same magazine with other explosives.
- i. Magazines shall be of two types, namely, Class I and Class II.
- j. Storage of explosives in quantities exceeding 100 pounds shall be in a Class I magazine, except that Class II magazine may be used for temporary storage of a larger quantity of explosives at the site of blasting operations where such amount constitutes not more than one day's supply for use in current operations. At the end of the say's operations any remaining explosives shall be safely destroyed or returned to a Class I magazine.
- k. Storage of explosives in quantities of 100 pounds or less shall be in Class I or Class II magazines, except that explosives in any quantity when stored in remote locations shall be in Class I, bullet-resistant magazines.
- l. Class I and Class II magazines shall be located away from inhabited buildings, passenger railways, public highways and other magazines in conformity with the provisions of the American Table of Distances for Storage of Explosives, See Table I, next page.
- m. At the site of blasting operations, a distance of not less than 100 feet shall be maintained between Class I magazines and the blast area. Class II magazines shall be kept not less than 150 feet from the blast area when the quantity of explosives temporarily kept therein is in excess of 25 pounds and not less than 50 feet when the quantity of explosives is 25 pounds or less.

- n. Packages of explosives shall not be unpacked or repacked in a magazine nor within 50 feet of a magazine or in close proximity to other explosives. Opened packages of explosives shall be securely closed before being returned to a magazine.
- o. Magazines shall not be used for the storage of any metal tools nor any commodity except explosives, blasting agents and oxidizers used in compounding blasting agents. The quantity of blasting agents and oxidizers shall be included when computing the total quantity of explosives for determining distance requirement.
- p. When an explosive has deteriorated to an extent that it is in an unstable or dangerous condition, or if nitroglycerin leaks from any explosive, then the person in possession of such explosive shall immediately report the fact to the Department Head and, upon his authorization, shall proceed to destroy such explosives and clean floors stained with nitroglycerin in accordance with the instructions of the manufacturer. Only experienced persons shall do the work of destroying explosives.

Table No. 1

American Table of Distance for Storage of Explosives and Minimum separation of Ammonium Nitrate and Blasting Agents from Explosives and Blasting Agents.

EXPLOSIVES		DISTANCE IN FEET WHEN STORAGE IS BARRICADED			
POUNDS OVER	POUNDS NOT OVER	FROM INHABITED BUILDINGS	FROM PUBLIC HIGHWAYS CLASSES A TO D	FROM PASSENGER RAILWAYS- PUBLIC HIGHWAYS WITH TRAFFIC VOLUME OF MORE <u>THAN 3,000 VEHICLES DAY</u> BARRICADED	SEPARATION OF MAGAZINES
2	5	70	30	51	6
5	10	90	35	64	8
10	20	110	45	81	10
20	30	125	50	93	11
30	40	140	55	103	12
40	50	150	60	110	14
50	75	170	70	124	15
75	100	190	75	139	16
100	125	200	80	150	18

NOTES:

1. "Natural barricade" means natural features of the ground, such as hills, or timber of sufficient density that the surrounding exposures which require protection cannot be seen from the magazine when the trees are bare of leaves.
2. "Artificial barricade" means an artificial mound or revetted wall of earth of a minimum thickness of 3 feet, except as set forth in Note 12.
3. "Barricaded" means that a building containing explosives is effectually screened from a magazine, building, railway or highway, either by a natural barricade or by an artificial barricade of such height that a straight line from the top of any sidewall of the building containing explosives to the eave line of any magazine or building,

or to a point 12 feet above the center of a railway or highway will pass through such intervening natural or artificial barricade.

4. "Inhabited building" means a building regularly occupied in whole or in part as a habitation for human beings, or any church, schoolhouse, railroad station, store or other structure where people are accustomed to assemble, except any building or structure occupied in connection with the manufacture, transportation, storage or use of explosives.
5. "Railway" means any steam, electric or other railroad or railway which carries passengers for hire.
6. "Highway" means any street or public road. "Public highways, Classes A to D", are highways with average traffic volume of 3,000 or less vehicles per day.
7. When two or more storage magazines are located on the same property, each magazine must comply with the minimum distances specified from inhabited buildings, railways and highways and in addition, they shall be separated from each other by not less than the distances shown for "separation of magazines", except that the quantity of explosives contained in cap magazines shall govern in regard to the spacing of said cap magazines from magazines containing other explosives.

EXCEPTION: Two or more magazines may be separated from each other by less than the specific "separation of magazines" distances when such two or more magazines, as a group, are considered as one magazine and the total quantity of explosives stored in such group shall be treated as if stored in a single magazine located on the site of any magazine of the group and shall comply with the minimum of distances specified from other magazines, inhabited buildings, railways or highways.

8. This table applies only to the manufacture and permanent storage of commercial explosives. It is not applicable to transportation of explosives or any handling or temporary storage necessary or incident thereto. It is not intended to apply to bombs, projectiles or other heavily encased explosives.
9. All types of blasting caps in strengths through No. 8 cap shall be rated at 1 ½ pounds of explosives per 1,000 caps. For strengths higher than No. 8 cap, the manufacturer shall be consulted.
10. For quantity and distance purposes, detonating cord of 50 to 60 grains per square foot shall be calculated as equivalent to 9 pounds of high explosive per 1,000 feet. Heavier or lighter core loads shall be rated proportionately.
11. For non-barricaded condition, the specified distance for "barricaded" shall be doubled.
12. The minimum separation between stores of explosives or blasting agents from barricaded stores of ammonium nitrate shall be not less than 16.7 percent of the distance given for separation of magazines in Table No. 1. The minimum separation between stores of explosives or blasting agents from barricaded stores of blasting agents shall be not less than 60 percent of the distance given for separation of magazines in Table No. 1. The distance determined from the above shall be multiplied by six if barricades are not provided.

For the purpose of this note, the weight of the larger mass shall be used to determine the required separation; however, the weight of ammonium nitrate may

be reduced by 50 percent. The required separation between inhabited buildings, public highways and railroads shall be not less than set forth in Table No. 1, using the sum of all explosives and blasting agents that are at a distance less than set forth in the table. The distance shall be measured from closest edge of the explosive material. Class A explosives as defined by the Department of Transportation shall be within Class I magazine. For the purposes of this note, artificial barricades of sand or dirt shall have a thickness not less than the following:

WEIGHT OF EXPLOSIVE OR BLASTING AGENT		BARRICADE THICKNESS (INCHES)
POUNDS OVER	POUNDS NOT OVER	
	2,000	12
2,000	6,000	15
6,000	12,000	20

CLASS I MAGAZINES

1. A magazine may be a building or excavation, tunnel or igloo, or military-type magazine or a portable magazine constructed as required in this section.
2. Class I magazines shall be bullet resistant, fire resistant, weatherproof, theft resistant and well ventilated.

EXCEPTION: Magazines used for storage of blasting agents, Class B and Class C explosives need not be bullet resistant.

3. Building-type magazines shall be constructed of masonry, wood, metal or a combination of these materials when bullet resistance is required.
 - a. Masonry units not less than 8 inches in thickness with all hollow spaces filled with concrete, well-tamped sand or equivalent materials, or
 - b. Reinforced concrete not less than 6 inches in thickness, or
 - c. Steel walls of minimum manufacturer's standard gage No. 10 (.0747 inch) may be used, provided there are two layers spaced at least 6 inches apart with all hollow spaces filled with concrete, well-tamped sand or equivalent material, or
 - d. One layer of manufacturer's standard gage No. 6 (.1943 inch) or heavier steel, lined on the interior with a minimum of 4 inches of wood, or
 - e. Two layers of manufacturer's standard gage No. 6 (.1943 inch) or heavier steel, spaced a minimum ½ inch apart and lined on the interior with a minimum of 2 inches of wood, or
 - f. Two layers of wood, at least 2 inches nominal thickness each, spaced a minimum of 4 inches apart with the hollow spaces filled with concrete, well-tamped sand or equivalent material.
 - g. The roof shall also be protected when the magazine is located where it is possible to fire a bullet directly through it into the explosives stored inside.

Note: Any sheeting used shall be tongue-and-groove lumber, plywood or approved equal.

4. Doors shall be of bullet-resistant construction and shall be installed in such a manner that the hinges and hasps cannot be removed when the doors are locked and closed.
5. Floors of magazines shall be securely fastened in place and shall be capable of withstanding the loading imposed.
6. The roofs and exterior sides of building-type magazines may be of wood construction covered with not less than No. 26 gage (.016 inch) steel metal. Roofs of building-type magazine located where it is possible to fire a bullet directly through the roof into the magazine at such an angle that the bullet would strike the explosives therein shall be constructed according to Section (3) or equipped with a sand tray located at the eave line and covering the entire magazine ceiling area except that necessary for ventilation. Sand in the sand tray shall be maintained at a depth of not less than 4 inches.
7. Magazines shall be ventilated to minimize dampness and heating of stored explosives. Ventilation openings shall be screened with 14 mesh, No. 21 gage wire to prevent the entrance of sparks and shall be protected in a manner that will maintain the bullet resistance of the magazine.
8. Magazine interiors shall have a smooth finish with all nails, screws, bolts and nuts countersunk or blinded.
9. The approaches to magazines shall be provided with warning signs reading EXPLOSIVES – KEEP OFF in red letters not less than 4 inches in height and a stroke of at least 5/8 inch. The lettering shall be imposed upon a white background. Location of signs shall be within 100 feet of the magazine and so placed that a bullet through the sign will not strike the magazine.
10. Post an additional warning sign on the door with the letters not less than 2 inches in height and a stroke of ¼ inch on a contrasting background reading EXPLOSIVES, DANGEROUS.

CLASS II MAGAZINES

1. Class II magazines shall be constructed of wood, metal, fiber or a combination thereof, or any equivalent construction.
2. Class II magazines shall be well constructed as follows:
 - a. Two-inch nominal thickness lumber, covered on the exterior with a minimum of No. 20 manufacturer's standard gage steel, or
 - b. Two thicknesses of 1-inch plywood covered on the exterior with a minimum of No. 20 manufacturer's standard gage steel, or
 - c. Fiber equal in strength to wood as indicated in Items Nos. a and b above, covered on the exterior with a minimum of No. 20 manufacturer's standard gage steel, or
 - d. Minimum No. 14 manufacturer's standard gage steel, lined on the interior with one layer of 1-inch-thick plywood, or
 - e. Material of equal strength and fire resistance.
3. Class II magazines containing explosives and located in buildings shall be located for easy removal in case of fire and, when required by the chief, shall be equipped with approved wheels or casters.

4. Class II magazines shall be painted red and, when size permits, shall bear lettering in white on sides and top at least 3 inches high with a 1/2 –inch stroke which reads EXPLOSIVES.
5. Class II magazines containing explosives left at locations where no one is in attendance shall be adequately secured to prevent their theft.

USE, HANDLING AND TRANSPORTATION

1. Blasting operations shall be conducted during daylight hours only.
2. The handling and firing of explosives shall be performed only by personnel specifically trained to do so.
3. A person while under the influence of intoxicants or narcotics shall not handle explosives.
4. A person shall not smoke or carry matches while handling explosives or while in the vicinity thereof.
5. An open-flame light shall not be used in the vicinity of explosives.
6. Whenever blasting is being conducted in the vicinity of gas, electric, water, fire, alarm, telephone, telegraph or steam utilities, the blaster shall notify the appropriate representative of such utilities at least 24 hours in advance of blasting, specifying the location and intended time of such blasting.
7. Blasting operations shall be conducted in accordance with nationally recognized good practice.
8. Before a blast is fired, the person in charge shall make certain that all surplus explosives are in a safe place, all persons and vehicles are at a safe distance or under sufficient cover and a loud warning signal has been sounded.
9. Due precautions shall be taken to prevent accidental discharge of electric blasting caps from current induced by radio or radar transmitters, lightning, adjacent power lined, dust storms or other sources of extraneous electricity.

These precautions shall include:

- a. The suspension of all blasting operations and removal of persons from blasting area during the approach and progress of an electrical storm.
 - b. The posting of signs warning against the use of mobile radio transmitters on all roads within approximately 500 feet of the blasting operations.
 - c. Compliance with nationally recognized good practice when blasting within one and one half miles of broadcast or high-power shortwave transmitters.
10. When blasting is done in a congested area or in close proximity to a building, structure, railway, highway or any other installation that may be damaged by material being thrown into the air, the blast shall be covered with an adequate blasting mat.
 11. Tools used for opening packages of explosives shall be constructed of non-sparking materials.
 12. Empty boxes and paper and fiber packing materials which have previously contained high explosives shall not be used again for any purpose but shall be disposed of in a manner approved by local fire codes.
 13. Explosives shall not be abandoned.

Transportation of Explosives:

1. Explosives shall not be carried or transported in or upon a public conveyance or vehicles carrying passengers for hire.
2. Vehicles used for transportation shall be strong enough to carry the load without difficulty and shall be in good mechanical condition. If vehicles do not have closed body, the explosives shall be covered with a flameproof and moisture proof tarpaulin or other effective protection against moisture and sparks. Such vehicles shall have tight floor, and exposed spark-producing metal on the inside of the body shall be covered with wood or other non-sparking material to prevent contact with packages of explosives. Packages of explosives shall not be loaded above the side of open-body vehicles.
3. Explosives shall not be transported on any vehicle not owned by Burnet County.
4. Every vehicle when used for transporting explosives shall be equipped with not less than one approved-type fire extinguisher with a minimum rating of 2-A, 10-B:C, or two approved-type fire extinguisher, one of which shall have a minimum rating of 2-A and the other a minimum rating of 10-B:C. Extinguisher shall be so located as to be readily available for use.
5. It shall be the duty of the department head or supervisor to transport explosives and inspect those vehicles employed by him to determine that:
 - a. Fire extinguishers are filled and in operating conditions.
 - b. Electric wires are insulated and securely fastened.
 - c. The motor, chassis and body are reasonably clean and free of excessive grease and oil.
 - d. The fuel tank and fuel line are securely fastened and are not leaking.
 - e. Brakes, lights, horn, windshield wipers and steering mechanism are functioning properly.
 - f. Tires are properly inflated and free of defects.
 - g. The vehicle is in proper condition for transporting explosives.
6. Spark-producing metals or spark-producing metal tools shall not be carried in the body of a vehicle transporting explosives.
7. Only those dangerous articles authorized by the US Department of Transportation to be loaded with explosives shall be carried in the body of a vehicle transporting explosives.
8. A person shall not smoke, carry matches or any other flame-producing device, or carry any firearms or loaded cartridges while in or near a vehicle transporting explosives, or drive, load or unload any such vehicle in a careless or reckless manner.
9. Vehicles transporting explosives shall be in the custody of drivers who are physically fit, careful, capable, reliable, and able to read and write the English language, not addicted to the use or under the influence of intoxicants or narcotics and not less than 21 years of age. They shall be familiar with state and municipal traffic regulations and the provisions of this article governing the transportation of explosives.
10. Vehicles transporting explosives shall display explosives signs on both sides, front and rear conforming to the requirements of the vehicle code.

11. Blasting caps and electric blasting caps when transported on the same vehicle with other explosives shall be separated from the other explosives by containment within a Class II magazine.
12. Vehicles transporting explosives shall be routed to avoid congested traffic and densely populated areas.
13. Explosives shall not be transported through any completed vehicular tunnel or subway.
14. Vehicles transporting explosives shall not be left unattended at any time within the jurisdiction.
15. Unless authorized by the department head, a person other than the driver and one assistant who is at least 18 years of age shall not ride on any vehicle transporting explosives.
16. The fire and police departments shall be promptly notified when a vehicle transporting explosives is involved in an accident, brakes down or catches fire. Only in the event of such an emergency shall the transfer of explosives from one vehicle to another be allowed on highways and only when qualified supervision is provided. Except in such an emergency, a vehicle transporting explosives shall not be parked before reaching its destination.
17. Delivery shall be made only to authorized persons and into approved magazines or approved temporary storage or handling areas.
18. Vehicles containing explosives shall not be taken into a garage or repair shop for repairs or storage.

Blasting Agents, General

1. Except when subject to US Department of Transportation regulations, blasting agents shall be stored, handled and used in the same manner as explosives.
2. Any ammonium nitrate stored at a closed distance to the blasting agent storage area than as provided in (3) below shall be added to the quantity of blasting agents to calculate the total quantity involved for application of Table No. 7.
3. Minimum interplant separation distances between mixing units and the ammonium nitrate storage areas and blasting agents storage areas shall be in conformity with Table No. 1, Note 12.

Mixing Blasting Agents

1. Buildings or other facilities used for mixing blasting agents shall be located away from inhabited buildings, passenger railways and public highways, in accordance with the provisions of Table No. 1.
2. Not more than eight hours production of blasting agents or the limit determined by Table No. 1, whichever is less, shall be permitted in or near the building or other facility used for mixing blasting agents. Larger quantities shall be stored in magazines.
3. Buildings or other facilities used for the mixing of blasting agents shall be designed and constructed in accordance with the Building Code.
4. Compounding mixing of recognized formulations of blasting agents shall be conducted in accordance with nationally recognized good practice.

5. Smoking or open flames shall not be permitted in or within 50 feet of any building or facility used for the mixing of blasting agents.
6. Empty oxidizer bags shall be disposed of daily in a manner approved by local fire codes.

Transportation of Blasting Agents

Vehicles transporting blasting agents not subject to US Department of Transportation regulations shall comply with all requirements of Transportation of Explosives, except that they shall be marked or placarded on both sides, front and rear, with the words **BLASTING AGENTS** in letters not less than 4 inches in height and approximately a 5/8-inch stroke on a contrasting background.

SIGNS, LABELS, & COLOR CODES

ACCIDENT PREVENTION SIGNS

1. These indicate specific hazards that may lead to accidental injury or property damage. All signs shall conform to the requirements of this policy and each sign shall include the following:
 - a. An approved heading that indicates the hazard urgency.
 - b. A statement of the type of hazard, or precautions to take, in the area. Signs shall be visible at all times when work is being performed, and shall be removed or covered promptly when the hazards no longer exist.
2. Danger Signs – used only where an immediate hazard exists; special precautions needed – red upper panel with a black border and the word “DANGER” in white letters.
3. Caution Signs – warn against possible hazards or safety risks – black panel with the word “CAUTION” in yellow letters.
4. Safety Instruction Signs – used for general instructions about safety measures – green panel with a word such as “THINK” or “BE CAREFUL” in white letters.
5. Directional Signs – used for specific information – standard color is red on white, and the direction symbol should be dominant.
6. Radiation Warning Signs – standard color is yellow background with symbol and panel in magenta (purple); lettering is magenta or black.
7. Biological Hazard Warning Signs – main symbol color is fluorescent orange.
8. Information Signs – standard color is blue, either as background for the complete sign or as panel at the top.
9. Slow-Moving Vehicle Sign – used only on vehicles such as graders or mowers designed to move slowly (25 mph or less) on public roads – fluorescent yellow-orange triangle with dark red reflective border.

ACCIDENT PREVENTION TAGS

1. Tags are only a temporary means of warning of a hazardous condition, defective equipment, radiation hazards, etc., but should be used until the hazard can be eliminated. For example, a “DO NOT START” tag on power equipment can be used for a very short time until the switch in the system can be locked out; a “DEFECTIVE EQUIPMENT” tag shall be placed on a damaged ladder and immediate arrangements made for the ladder to be sent for repairs.
2. “DANGER” Tags – shall be attached to equipment being held out of service for repair, or which poses an immediate hazard to the user.
3. “CAUTION” Tags – shall be attached to equipment which poses a potential hazard to the user, and are also used to warn against an unsafe practice.
4. Other Tags such as radiation or biological hazard – same symbols and colors as required on signs.
5. During routine inspections of building areas, inspectors may attach red danger tags to equipment which is observed in a state of disrepair or is deemed potentially hazardous. The department head is responsible for correcting deficiencies.

COLOR CODE FOR MARKING PHYSICAL HAZARDS

1. Red shall be the basic color for the identification of:
 - a. Fire protection equipment and apparatus.
 - b. Safety cans or other portable containers of flammable liquids.
 - c. Emergency stop buttons or electrical switches used for machinery.
 - d. Danger signs.
2. Orange – The basic color for designating dangerous parts of machines or energized equipment, and to emphasize such hazards when enclosure doors are open or when guards around moving equipment are open or removed.
3. Yellow – The basic color for designating caution and for marking physical hazards such as striking against or tripping. Use the combination of solid yellow, or yellow-and-black stripes, which will attract the most attention in the particular environment.
4. Green – The basic color for designating “safety” and the location of first aid equipment.
5. Blue – Used only for warning against starting or using equipment under repair.
6. Purple – The basic color for showing radiation hazards.
7. Black and White – The basic color for designating traffic and housekeeping markings.

STORAGE & HOUSEKEEPING

HOUSEKEEPING

Safety starts with housekeeping. A clean, neat and orderly work area is an important reflection of safe work habits and attitudes. Therefore, the following housekeeping rules will apply:

1. All places of employment shall be kept clean and orderly and in a sanitary condition. The floor of each area shall be maintained in a clean and, so far as possible, a dry condition.
2. Any material spilled on the floor which could cause an accident must be cleaned up immediately.
3. During the course of work, all debris shall be kept reasonably cleared from work areas, and all waste shall be disposed of at intervals determined by the rate of the accumulation and the capacity of the container. Always use container supplies for this purpose.

GENERAL STORAGE RULES

1. Material, wherever stored, shall not create a hazard. It shall be limited in height and shall be piled, stacked, or racked in a manner designed to prevent it from tipping, falling, collapsing, rolling or spreading. Racks, bins, blocks, sheets shall be used where necessary to make the piles stable.
2. Heavy or awkward items should always be stored near the bottom of shelves of cabinets.
3. Do not allow equipment or storage to encroach within 36 inches (preferably 42") of all electrical panels. These panels contain the emergency switches for equipment and sometimes must be reached quickly.
4. Secure storage shelving, cabinets, and other items which may accidentally tip over or are subject to movement.

INDOOR STORAGE

1. Storage shall not be obstructed or adversely affect means of exit and corridors.
2. All materials shall be stored, handled, and piled with due regard to their fire characteristics.
3. Non-compatible materials, which may create a fire hazard, shall be segregated by a barrier having a fire resistance of at least 1 hour. Arrangement should permit convenient access for firefighting.
4. Clearance shall be maintained around lights and heating units to prevent ignition of combustible materials.
5. Stacked materials shall have a minimum clearance of 18 inches between the top of the stack and the sprinkler system piping and deflectors.
6. In buildings without installed sprinkler systems, the material stack height shall not exceed fifteen (15) feet.
7. All stacks will have a minimum of thirty-six (36) inches clearance between the top of the stacks and joists, rafters, or roof trusses.

8. The maximum weight of materials stored on building floors or land carrying platforms, except those built directly on the ground, shall not exceed their safe carrying capacity. All elevated storage areas will be marked with load capacity.

OUTDOOR STORAGE

1. The entire storage site shall be kept free from accumulation of unnecessary combustible materials. Weeds and grass shall be kept down and a regular procedure provided for the periodic cleanup of the entire area.
2. Storage shall be in orderly and regular piles. No combustible material shall be stored outdoors within 10 feet of a building or structure.
3. Portable fire extinguishing equipment, suitable for the fire hazard involved, shall be provided at convenient, conspicuously accessible locations in the yard area.

VEHICLE OPERATIONS

GENERAL

1. Persons who operate vehicles on behalf of the county should extend every courtesy to both traffic and pedestrians.
2. Only those employees specifically authorized and who possess a valid, appropriate driver's license shall operate vehicles on county business.
3. The following rules apply to the operation of vehicles on county business.
 - a. Drivers shall be familiar with and obey all state motor vehicle laws that apply to them.
 - b. A driver shall not permit unauthorized persons to drive, operate or ride in or on a county vehicle.
 - c. Seat belts will be used.
 - d. Employees shall not permit anyone to ride on the running boards, fenders or any part of any motorized equipment except on the seats or inside the body walls. Riding in the backs of trucks is prohibited.
 - e. Employees shall not ride on loose materials or equipment carried on trucks; nor shall they ride on trailers or towed equipment, except when performing a job function.
 - f. Employees shall not jump on or off vehicles in motion.
 - g. Drivers shall keep a sharp lookout for pedestrians and for cyclists and be prepared for an immediate stop.
4. The following rules apply to vehicle condition:
 - a. Windshields and windows shall be kept clear of anything that may obstruct the vision of the driver.
 - b. Brakes shall be tested by the driver at the start of each day. The driver shall report all defects and they shall be adjusted or repaired before the vehicle is put in operation.
 - c. Lights and other signaling devices shall be inspected daily. If found defective, they shall be repaired before vehicle is placed in operation. No vehicle shall be operated at night unless equipped with properly working headlights, taillights, and other necessary safety devices as required by law.
 - d. Fuel, oil, water and hydraulic systems will be checked daily and filled if necessary.
 - e. All vehicles shall bear a valid Texas Department of Public Safety annual inspection sticker.
5. The following rules apply to hauling materials and equipment:
 - a. Materials and equipment shall be loaded so they will not cause a hazard by shifting. Heavy equipment and materials shall be securely fastened.
 - b. Red flags during the day and red lights at night shall be attached to equipment or material that extends more than four (4) feet beyond the back of vehicle. Red flags or approved clearance lights shall be attached to loads extending more than two (2) feet beyond the front of vehicle.

- c. Tools, materials, or equipment shall not be permitted to extend beyond the permanent fixtures provided on the sides of the truck.
- d. Trailers or equipment, while being towed, shall be securely coupled to the truck and joined by auxiliary chains or cable. Trailer lights shall be hooked up before use on a public road.
- e. Trucks shall not be operated with tailgates hanging or dangling.
- f. Vehicles will not be operated unless back-up signals are in operating order.

SAFETY RULES FOR GARAGE AREAS

1. The following rules apply to the use and repair of vehicle batteries:
 - a. Battery charging installations should be located in areas designated for that purpose.
 - b. When charging batteries, the vent caps shall be kept in place to avoid electrolyte spray.
 - c. Facilities for quick drenching of the eyes and body shall be provided within 25 feet of the battery areas for emergency use.
 - d. When using jumper cables to start a second vehicle, follow these procedures to avoid either equipment damage or an explosion:

It must be initially determined whether both vehicles are negatively grounded, (the negative terminal is connected to the engine block or frame), or positively grounded. It must also be determined that both batteries have the same nominal voltage (6 or 12 volts). Do not mix these systems in any way, as damage will occur.

When both vehicles are negatively grounded (which most often is the case), connect one end of the other cable to the engine block of the car with the good battery. Finally, connect the other end of this cable to the engine block of the car being started. Do not make this final connection to the negative terminal of the weak battery. Disconnecting the batteries should be done by reversing this procedure.

2. The following rules apply to the fueling of vehicles and equipment:
 - a. No internal combustion engine fuel tank shall be refilled with a flammable liquid while the motor is running. Fueling shall be done in such a manner that likelihood of spillage is minimal. If a spill occurs, it shall be disposed of properly as required by hazardous materials incident response policy. Fuel tank caps shall be replaced before the engine is started.
 - b. A gasoline pump shall be provided to service the fuel tanks of all gasoline driven equipment. A good metal-to-metal contact shall be kept between fuel supply tank or nozzle of supply hose and the fuel tank.
 - c. Open lights, open flames, or sparking or arcing equipment except that which is an integral part of the automotive equipment, shall not be used near fuel storage tanks or internal combustion engine equipment while being fueled with flammable liquids.

- d. No smoking shall be permitted at or near the equipment being fueled. Post a conspicuous sign in each fueling area stating: 'NO SMOKING WITHIN 25 FEET'
 - e. A dry chemical or carbon dioxide fire extinguisher rated 6.BC or larger shall be in locations accessible to the fueling area.
3. The following apply to jacks and their use:
- a. The rated load shall be legibly and permanently marked on a prominent location on the jack by casting, stamping, or other suitable means.
 - b. All jacks shall be designed so that their maximum safe extension cannot be exceeded.
 - c. In the absence of a firm foundation, the base of the jack shall be blocked. If there is a possibility of slippage of the cap, a block shall be placed in-between the cap and the load.

WELDING, CUTTING & BRAZING

GENERAL RULES

1. Welding and cutting are done on an ever-increasing variety of metals and metal coatings. Four primary hazards that are associated with welding operations are ultraviolet and infrared light, oxides of nitrogen, ozone, and metal fumes.
2. Cutting or welding shall be permitted only in areas that are, or have been made, fire safe. Where objects to be welded or cut are not readily movable, all fire hazards in the vicinity shall be taken to a safe place.
3. Where objects to be welded or cut are not movable and where fire hazards cannot be removed, then guards shall be used to confine the heat, sparks and slag, and to protect the immovable fire hazards and nearby personnel.
4. Suitable fire extinguishing equipment shall be immediately available in the work area and shall be maintained in a state of readiness for instant use. It may be necessary to assign additional personnel to guard against fire while the actual welding is being performed, and for a sufficient period of time after the completion of the work to ensure that no possibility of fire exists.
5. No welding, cutting or other work shall be performed on used drums, barrels, tanks or other containers until they have been cleaned so thoroughly as to make absolutely certain that there are no flammable materials present which when subjected to heat, might produce flammable or toxic vapors.
6. Goggles or other suitable eye protection shall be used during all gas welding or cutting operations. Eye protection shall be provided where needed for brazing operations.
7. All welders should wear flameproof gauntlet gloves. Flameproof aprons may be desirable as protection against radiated heat and sparks. Cotton clothing, if used, should be chemically treated to reduce its combustibility. All clothing should be reasonable free from oil or grease.
8. Local exhaust systems providing a minimum air velocity of 100 lineal feet per minute in the welding zone shall be used except where not feasible. Mechanical dilution ventilation sufficient to prevent exposures to concentration of airborne contaminants from exceeding those specified in Chapter 3 may be used instead.
9. Respiratory protective equipment shall be used when ventilation is not feasible.