

# Objectives

Define safety terms.

List and distinguish federal safety code colors.

State personal, general, and electrical safety rules.

State rules to follow when using electrical tools.

Name major causes of electrical accidents.

Label parts of the fire triangle.

Match fire extinguishers to the proper fire.

State safety practices for job-built, extension, and A-frame ladders.

List steps, in order, to follow in the event of an accident.

Label the color coding of safety tags and signs.

Complete a general safety quiz.

## I. Terms and definitions:

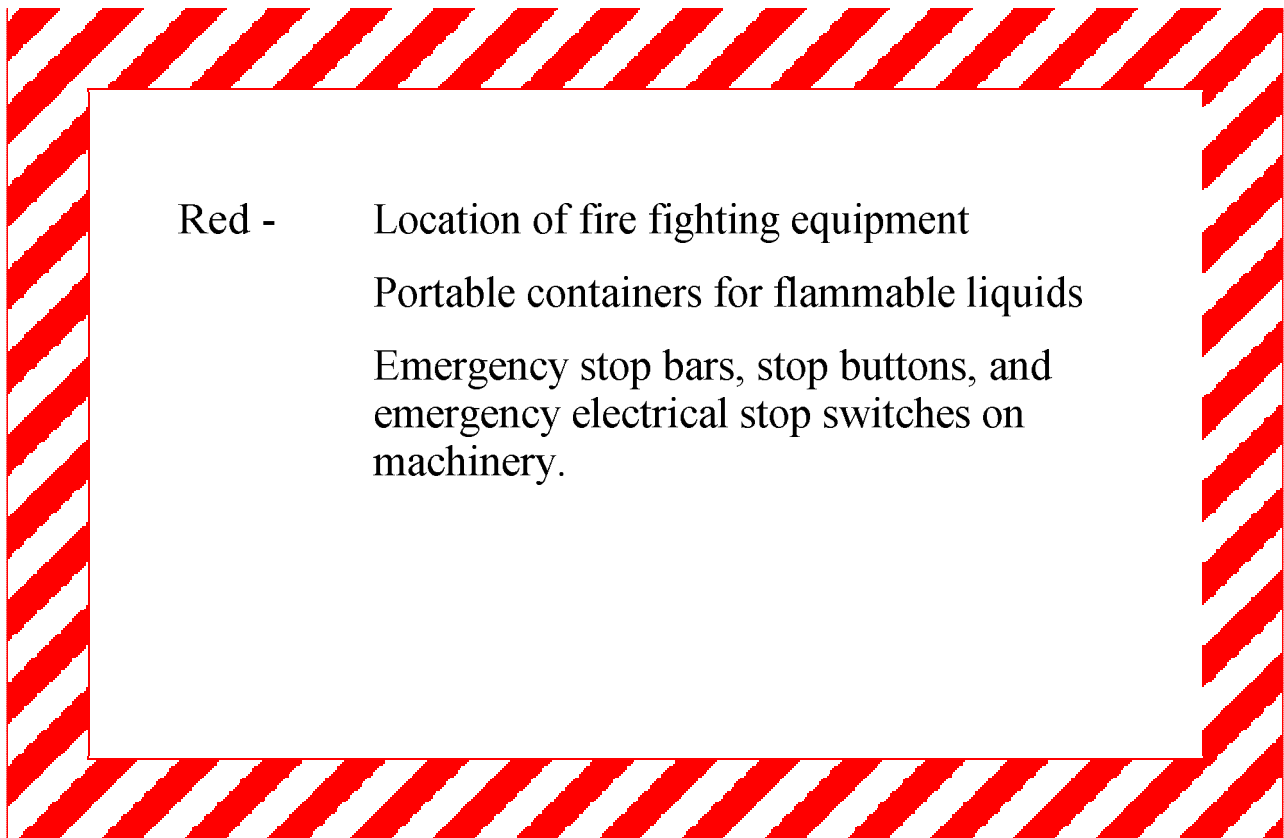
Accident - Any suddenly occurring, unintentional event which causes injury or property damage.

First aid - Immediate, temporary care given to a victim of an accident or sudden illness until a physician can arrive.

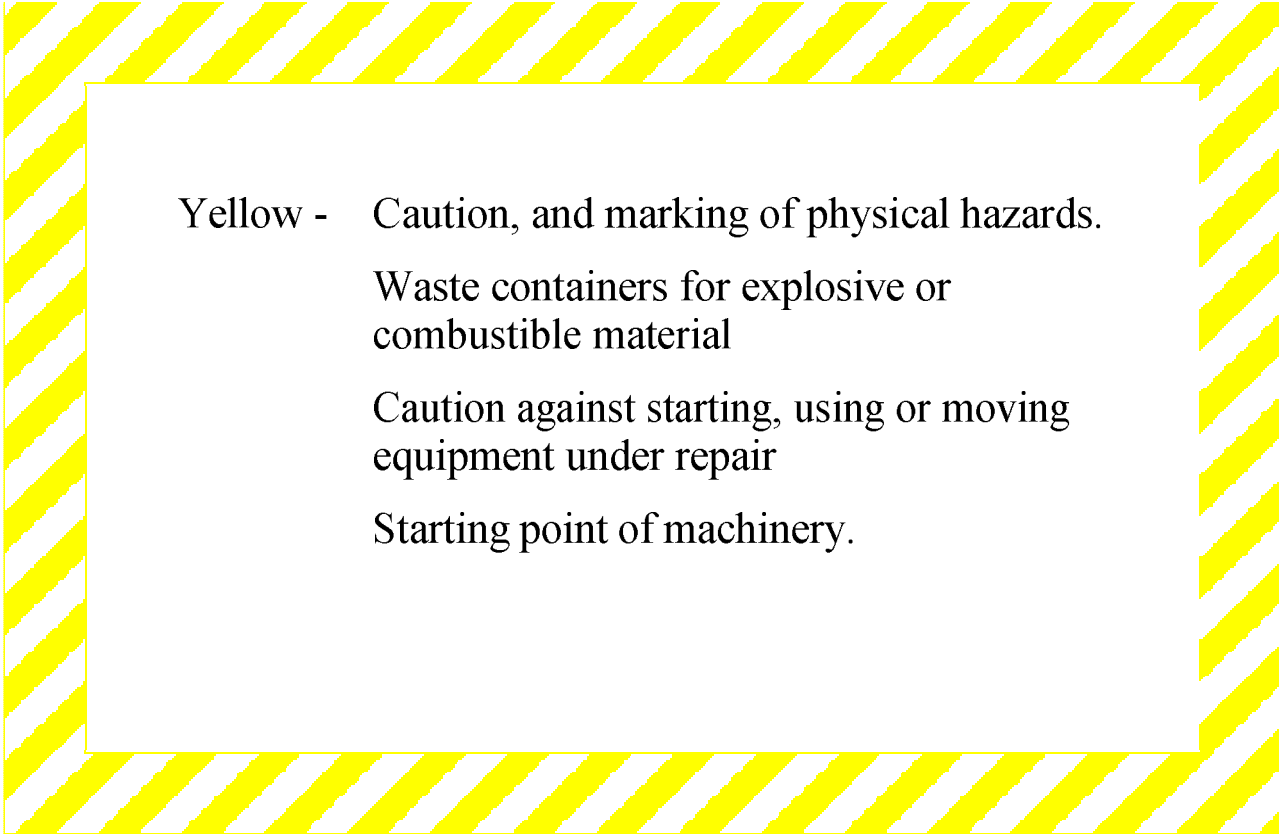
Safety - State or condition of being safe; freedom from danger, risk, or injury.

Tag - Safety sign that can attach to a particular piece of equipment.

## II. Federal safety code colors:

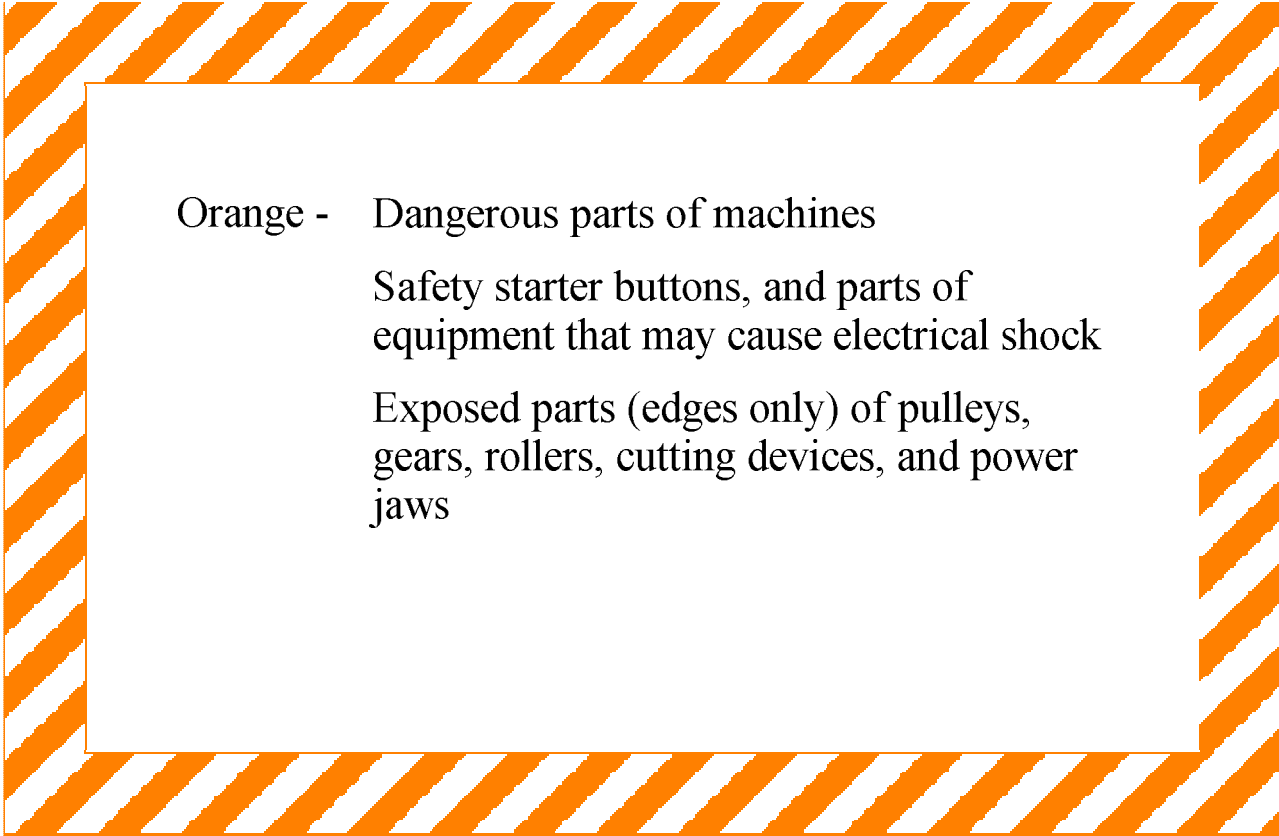


## II. Federal safety code colors:



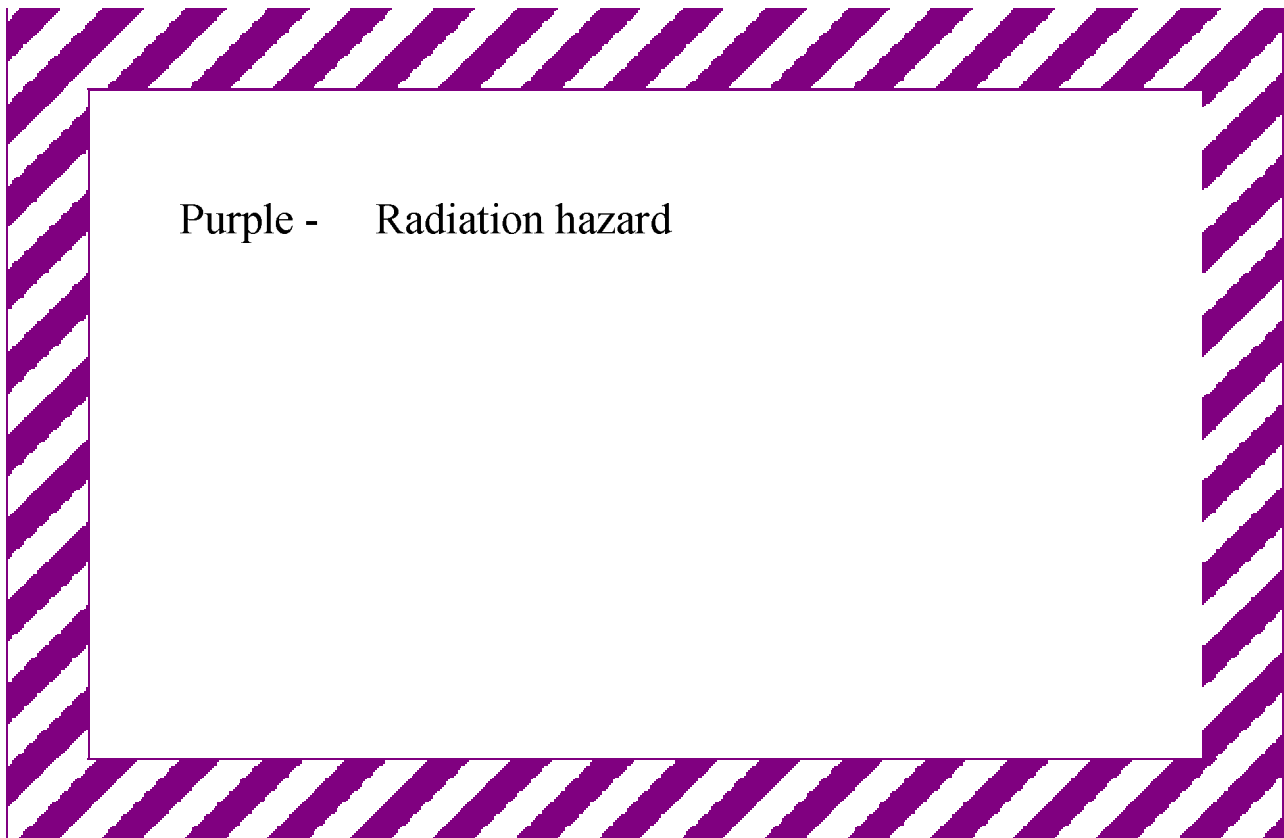
Yellow - Caution, and marking of physical hazards.  
Waste containers for explosive or  
combustible material  
Caution against starting, using or moving  
equipment under repair  
Starting point of machinery.

## II. Federal safety code colors:



Orange - Dangerous parts of machines  
Safety starter buttons, and parts of  
equipment that may cause electrical shock  
Exposed parts (edges only) of pulleys,  
gears, rollers, cutting devices, and power  
jaws

## II. Federal safety code colors:



## II. Federal safety code colors:

Green - Safety

Location of first-aid equipment

(NOTE: This applies to equipment other than fire-fighting equipment.)

## II. Federal safety code colors:



Black & White - Traffic flow

Housekeeping purposes

EXAMPLE: Custodian's closet

(NOTE: Black and white may be used together or by themselves)



#### IV. Personal safety rules:

- A. Wear clothing appropriate for activity
- B. Secure long hair before operating rotating equipment
- C. Wear safety goggles anytime there is possibility of eye injury
- D. Do not wear loose clothing when operating or working around rotating machinery
- E. Remove all jewelry when working in shop

## V. General shop safety rules:

- A. Keep all tools clean, sharp, and in safe working order
- B. Report to instructor or supervisor any defect in tools, machines, or other equipment
- C. Leave all safety devices on equipment, except with the *specific authorization* of instructor or supervisor
- D. Operate machinery or test equipment only after proper instruction
- E. Report ALL accidents to instructor or supervisor
- F. Turn power off when leaving a machine or tool
- G. Disconnect power from machine or tool when performing maintenance

## V. General shop safety rules: (Cont.)

- H. Keep shop floor clear of scraps, litter, or debris
- I. Clean up immediately any spilled liquid
- J. Store oily shop towels or oily waste in metal containers
- K. Always wear safety goggles when grinding, buffing, hammering, or cleaning with compressed air.
- L. Do not work in shop without instructor or supervisor present
- M. Consider safety of others when working in shop
- N. Report any condition which may lead to an accident

## V. General shop safety rules: (Cont.)

- O. Conduct yourself in a safe manner at all times
- P. Use proper tools and equipment for the job
- Q. Operate machines and equipment only when permitted by instructor or supervisor
- R. Make sure everyone is clear of work area when using compressed air to clean
- S. Check all equipment before turning it on
- T. Use plenty of light; do not work in improperly lit area
- U. Make sure all revolving machine parts are well-guarded
- V. Give prompt attention to injuries

## VI. Electrical safety rules:

- A. *Never* underestimate the danger of electricity
- B. Remember that involuntary shock can cause personal injury and injury to others
- C. Always turn off power to equipment, unless power is necessary for testing
- D. *Never* experiment by touching circuits to see if voltage is present
- E. Remove all jewelry before working on equipment
- F. *Never* work on electrical equipment while wet

## VI. Electrical safety rules: (Cont.)

- G. Check for the presence of high voltage
- H. Always have safety observer present when working on live equipment
- I. Work only on equipment with which you are familiar
- J. Never take safety devices for granted  
EXAMPLE: Fuses, circuit breakers, protective interlocks

## VI. Electrical safety rules: (Cont.)

K. Tag or lock all electrical power switches when working on equipment



## VII. Electrical tools safety rules:

- A. Ground all power tools
- B. Use proper sized electrical cord
- C. Keep safety guards on all tools
- D. Do not use tools with frayed or damaged cords
- E. Stand on dry, nonconductive surfaces when using tools
- F. Wear eye protection



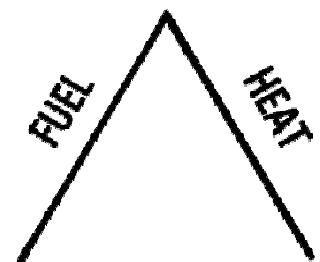
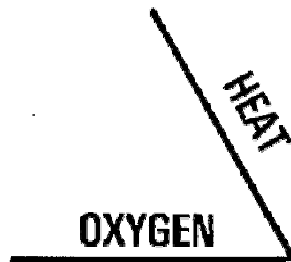
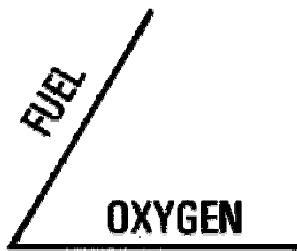
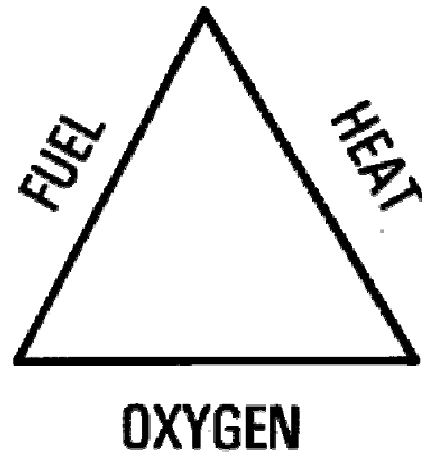
## VIII. Major causes of electrical accidents:

- A. Carelessness
- B. Misuse of equipment



IX. Parts of the fire triangle:

- A. Fuel: Must be combustible
- B. Heat: Must ignite fuel
- C. Oxygen: sustains combustion



## X. Classes of fires:

Class A - Fires that occur in ordinary combustibile materials

EXAMPLES: Wood, rags, trash

Types of fire extinguishers used on Class A fires.



Water



Dry  
chemical



Soda  
Acid



Foam

## X. Classes of fires:

Class B - Fires that occur with flammable liquid

EXAMPLES: Gasoline, oil, grease, paint thinners

Types of fire extinguishers used on Class B fires.



CO<sub>2</sub>



Dry  
chemical



Foam

## X. Classes of fires:

Class C - Fires that occur in or near electrical equipment

EXAMPLES: Motors, switchboards, electrical wiring

Types of fire extinguishers used on Class C fires.



CO<sub>2</sub>



Dry  
chemical

## X. Classes of fires:

Class D - Fires that occur with combustibile metals

EXAMPLES: Magnesium

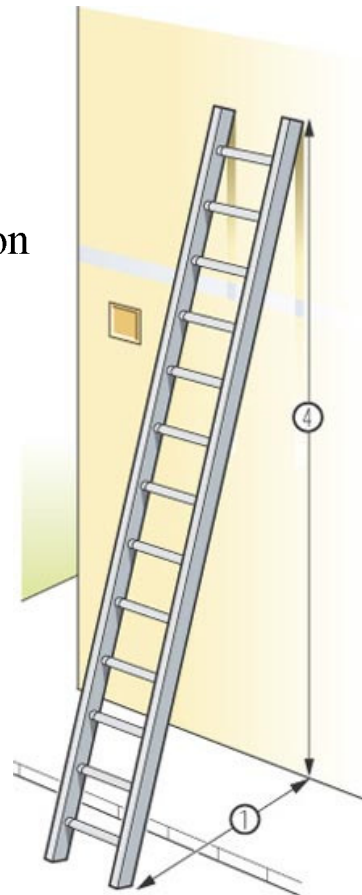
Types of fire extinguishers used on Class D fires.



Dry  
chemical

## XII. Safety practice for job-built, extension, and A-frame ladders:

- A. Make sure ladder is tall enough
- B. Maintain safe ladder angle
- C. Secure top of job-built and extension ladders when possible
- D. Use nonskid feet or secure bottom of ladder
- E. Do not paint ladder
- F. Do not stand on top of any ladder
- G. Do not straddle A-frame ladders




### XIII. Steps to follow in the event of an accident:

- A. Report any accidents or injuries to the instructor or supervisor, no matter how minor they may seem  
(NOTE: An accident report will be filled out by instructor or supervisor, and an investigation will take place to determine cause and prevention of future accidents.)
- B. Administer first aid, if needed
- C. Telephone for professional medical help, if needed



#### XIV. Rescue procedures used in electrical accidents:

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- A. Press red emergency stop button or locate circuit breaker and turn off if possible.

(CAUTION: If conductor is to be moved, use dry, wooden broom stick or some other nonconductive device. DO NOT grab person with bare hands. If it is high voltage [over 600V] contact proper authorities.)

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- B. Separate victim from conductor  
(NOTE: Decide if it would be easier to move person or conductor.)
- C. Follow "Steps to be followed in case of an accident"

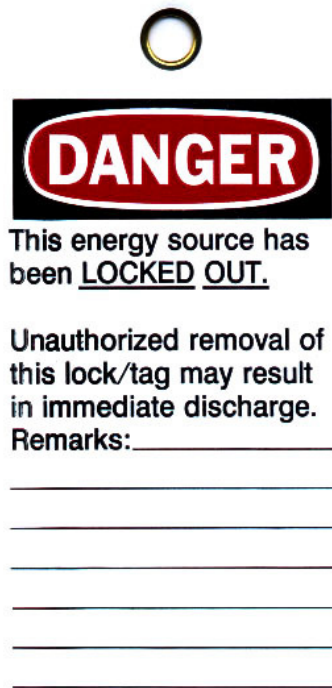
## XV. Color coding of safety tags and signs

### A. "Do Not Start" tag or sign



### XV. Color coding of safety tags and signs

#### B. "Danger" tag or sign



## XV. Color coding of safety tags and signs

### C. "Caution" tag or sign



## XV. Color coding of safety tags and signs

### D. "Out of Order" tag or sign

