



CONSTRUCTION SAFETY EDUCATION PROGRAM

#24

LIGHTNING SAFETY



This education program provides general information on Lightning Safety. It is intended to give contractors and workers practical information relating to the precautions to be taken when working outdoors.

This education program contains general information. For specific regulatory requirements concerning workplace safety, please consult the Workplace Safety and Health Act and the appropriate regulations.



WHAT IS LIGHTNING ?

Lightning is generated in electrically charged storm systems. It results from the buildup and discharge of electrical energy between negatively charged areas (bottom of cloud) and positively charged areas (items on earth).

WHY IS LIGHTNING DANGEROUS ?

A lightning flash can carry 30,000 to 300,000 amps at 15 million to 125 million volts. A lightning bolt is 5 times hotter than the surface of the sun and sends shockwaves beaming out in all directions.

UNDERSTANDING LIGHTNING

On average, 100 people are killed and 1,000 people are injured each year by lightning in the U.S.

Thunder is the shockwave we hear that is caused by the rapid heating and cooling of the air around a lightning flash.

TO ESTIMATE THE DISTANCE BETWEEN YOU AND A LIGHTNING FLASH, USE THE "FLASH TO BANG" METHOD.

If you see lightning, count the number of seconds until you hear thunder. Divide the number of seconds by 5 to get the distance the lightning is away from you.

IF THUNDER IS HEARD...	THE LIGHTNING IS...
5 SECONDS AFTER A FLASH	1 MILE AWAY
10 SECONDS AFTER A FLASH	2 MILES AWAY
15 SECONDS AFTER A FLASH	3 MILES AWAY
20 SECONDS AFTER A FLASH	4 MILES AWAY
25 SECONDS AFTER A FLASH	5 MILES AWAY
30 SECONDS AFTER A FLASH	6 MILES AWAY

Lightning can strike as far away as 10 miles from the storm cloud!

WHAT SHOULD YOU DO IF YOU SEE LIGHTNING OR HEAR THUNDER?

Tell your supervisor and your co-workers. You have a legal duty to report hazards on the job site.

The supervisor must take all precautions necessary to protect the safety and health of workers under their supervision.

Your employer, the prime contractor, or the owner of the construction project site should have an emergency procedure in place as part of its job plan. They are responsible to ensure that no person is exposed to risks to their safety or health in connection with activities at the construction project site.

WHAT YOU CAN DO TO PROTECT YOURSELF!

Get indoors. Your best bet is inside a building and your second choice would be inside a car.

- If working indoors, stay away from windows and doors and avoid contact with anything that conducts electricity (such as metal pipes or electrical wiring). Unplug any sensitive electronic equipment as surge protectors will not be effective if the power line is struck by lightning.

- Avoid using the telephone unless it is a cordless or cellular phone. Lightning can strike telephone and electrical wires and travel into a building, through the phone line, to the handset and shock you.

- If you cannot get indoors, make yourself as small a target as possible.

- Remove your tool belt and don't hold any objects in your hands. If you're on a roof or a ladder, get down to the ground.

- Stay away from trees and water as they attract lightning.

- Put your feet as close together as possible and crouch down with your head between your legs and your hands over your ears.

- Do not let any part of your body other than your feet contact the ground.

- Do not lay down on the ground as current could flow through you causing a heart attack, internal injuries and burns.

- Do not huddle in a group, stay at least 15 feet away from others.

As a general precaution,

YOU SHOULD NOT RESUME OUTDOOR WORK ACTIVITIES UNTIL 30 MINUTES AFTER THE LAST AUDIBLE THUNDER OR VISIBLE FLASH OF LIGHTNING.

QUIZ

NAME: _____

DATE: _____

T / F – True or False M.C. – Multiple Choice

1. T / F - Using a telephone during a lightning storm is dangerous.

2. M.C. - Where is the safest place to be during a lightning storm?
 - a) In a car
 - b) In the middle of a field
 - c) In a house or building
 - d) Lying face down on the ground

3. T / F - A car is a safe place to be in an electrical storm because it has rubber tires.

4. T / F - The three rights of workers in regards to health and safety are:
 - a) The right to refuse dangerous work
 - b) The right to know about hazards present in the workplace
 - c) The right to participate in their own health and safety training

5. M.C. - How long should you wait after hearing thunder before resuming outdoor work activities?
 - a) 5 minutes
 - b) 30 minutes
 - c) 1 hour

6. T / F - If it's not raining, then there is no danger from lightning.

7. M.C. - If you see lightning or hear thunder
 - a) Tell your supervisor
 - b) Ignore it, as it will go away

8. T / F - If you see lightning far away but don't hear thunder, or if you only hear thunder but don't see lightning, you are in a safe area.