



Company Name: _____ Job Site Location: _____
 Date: _____ Start Time: _____ Finish Time: _____ Foreman/Supervisor: _____

Topic 283: Laser Safety

Introduction: Laser technology is great for construction but can be dangerous to your health. Lasers have been helping the construction industry for many years now, especially in the area of leveling and elevations alignment applications. New technologies are being continuously developed with many coming in the area of controlling the blades on bull dozers and road graders for precision cutting and grading. Only qualified and trained employees shall be assigned to install, adjust, and operate laser equipment on a jobsite.

OSHA's Nonionizing Radiation standard provides general requirements for laser use and the required training and certification.

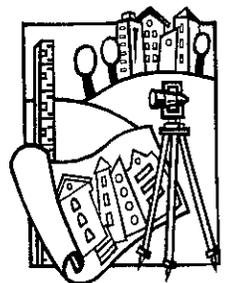
General requirements and safety precautions

- **Areas in which lasers** are used must be posted with standard laser warning placards.
- **Laser units in operation** should be set up above the heads of employees when possible.
- **Beam shutters or caps shall** be utilized, or the laser turned off, when laser transmission is not actually required.
- **When the laser is left unattended** for a substantial period of time, such as during lunch hour, overnight, or at change of shifts, the laser shall be turned off.
- **Only mechanical or electronic** means shall be used as a detector for guiding the internal alignment of the laser.
- **Laser equipment must** bear a label to indicate maximum output.
- **The laser beam** must not be directed at workers.
- **When it is raining or snowing**, or when there is dust or fog in the air, the operation of laser systems shall be prohibited where practicable. In any event, workers must be kept out of range of the area of source and target during such weather conditions.
- **When anyone is working** in an area where a potential exposure to direct or reflected laser light greater than five milliwatts exists they must be provided with anti-laser eye protection.



Workers shall not be exposed to non-ionizing radiation light intensities above these standard values:

- **Direct Staring** – One micro-watt per square centimeter for direct staring. Direct staring applies when you are required to or are likely to look directly into the beam, towards the source, in order to perform required work.
- **Incidental Observing** – One milliwatt per square centimeter for incidental observing. Incidental observing applies to exposure where looking directly into the laser is not required and is unlikely to occur in the performance of your work.
- **Diffused Reflected Light** – Two and one half watts per square centimeter for diffused reflected light.
- **Microwave Power Densities** – Ten milliwatts per square centimeter for microwave power densities.



Conclusion: Before anyone can install, adjust, or operate laser equipment, they must be trained in the use of the equipment and be proficient in applicable manufacturer's recommendations. Workers must be instructed in the various hazards associated with the use of the equipment and the necessary or recommended control measures for the elimination of the hazards. The training should be conducted by a qualified representative of the manufacturer, or by a knowledgeable individual designated by your employer. When laser equipment is in operation, workers must have proof of qualification in their possession at all times. Follow these requirements for safe laser operations.

Work Site Review

Work-Site Hazards and Safety Suggestions: _____

Personnel Safety Violations: _____

Material Safety Data Sheets Reviewed: _____ (Name of Chemical)

Employee Signatures: _____
 (My signature attests and verifies my understanding of and agreement to comply with, all company safety policies and regulations, and that I have not suffered, experienced, or sustained any recent job-related injury or illness.)

Foreman/Supervisor's Signature: _____

These guidelines do not supercede local, state, or federal regulations and must not be construed as a substitute for, or legal interpretation of, any OSHA regulations.