

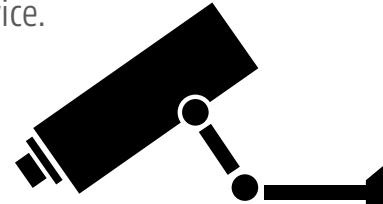


**STEEL
FAB**
MACHINERY
TECHNOLOGY
EQUIPMENT

SAFETY GUIDELINES: LASER CUTTING MACHINES



Laser cutters use powerful lasers for precise cutting and engraving. The hazards associated with a laser cutter include the possibility of fires and the generation of hazardous and/or irritating combustion products. The laser cutter high-powered laser can cause serious damage to eyes and skin, if the beam is not contained within the device.



ALL EXHIBITORS DISPLAYING LASER CUTTING MACHINES & EQUIPMENT SHOULD STRICTLY FOLLOW THE BELOW SAFETY RULES AND GUIDELINES



Laser Cutter Safety

TRAINING AND PPE

- ▶ To prevent accidents and injuries, ensure that only trained personnel have access to the laser cutter.
- ▶ All users must be properly trained on the potential hazards, control measures, lab and manufacturers' operating procedures, fire & emergency procedures and safety precautions.
- ▶ Required PPE includes safety glasses to protect eyes from particles, debris, etc., proper skin protection to reduce burns, and hearing protection (if necessary).

HAZARDS AND PRECAUTIONS

LASER LIGHT

- ▶ The invisible high-energy laser beam can cause severe eye damage, including blindness and serious skin burns.
- ▶ The doors should be interlocked such that the laser beam will be disabled when the doors are opened. This will completely contain the laser beam under normal.
- ▶ The invisible high-energy laser beam can cause severe eye damage, including blindness and serious skin burns. The doors are interlocked such that the use.
- ▶ Improper use of the controls and modification of the safety features may cause serious eye injury and burns.
- ▶ **DO NOT operate the laser unless all covers are in place and interlocks are working properly.**
- ▶ **DO NOT modify or disable any safety features of the laser system.**
- ▶ **DO NOT look directly into the laser beam.**



FIRE



- ▶ The high intensity laser beam can produce extremely high temperatures and significant amounts of heat as the substrate material burns away while cutting.
- ▶ Some materials can catch fire during cutting operations creating fumes and smoke inside the device.
- ▶ Dirt and debris may cause fire and a poor quality cut or mechanical component failure.
- ▶ It is important that users remain with the laser during operation to ensure that any flare-ups/flame are properly contained and extinguished.
- ▶ Obtain the Safety Data Sheet (SDS) from the material's manufacturer when handling or processing the materials.
- ▶ **DO NOT use materials that are highly flammable, explosive or produce toxic byproducts and always use fire-retardant protective flooring cover.**
- ▶ **DO NOT remove material from the cutting bed before it has cooled.**
- ▶ **DO NOT leave an operating laser cutter unattended.**
- ▶ **ALWAYS clean up clutter, debris and flammable materials after use.**
- ▶ **ALWAYS keep a properly maintained fire extinguisher nearby.**

AIR CONTAMINANTS



- ▶ Laser cutters will generate fumes, vapors, particulates, and metal fumes from substrate that can be highly toxic (plastics and other combustible materials).
- ▶ All laser cutter systems must be equipped with a fume exhaust system and filtration system that meets manufacturer specifications.
- ▶ These fumes or air contaminants can damage the machine and harm your health. If the air filter or exhaust system is malfunctioning, immediately stop operating the laser cutter and notify your supervisor.
- ▶ Filters must be changed regularly according to the frequency of use or as specified by the manufacturer.
- ▶ **DO NOT cut a material that has not been approved by the manufacturer.**
- ▶ **DO NOT use a laser cutter with a malfunctioning exhaust system or clogged air filter.**

SteelFab - Safety Guidelines: Laser cutting machines
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