

METU

FACULTY OF ARCHITECTURE

LASER CUTTER MANUAL

Our Faculty has a Universal PLS6.150D laser cutter. Before using the laser cutter, all users should read the guide carefully and make reservation for the laser cutter at least two days in advance. During the peak times of the semester, the reservations should be made at least a week in advance.

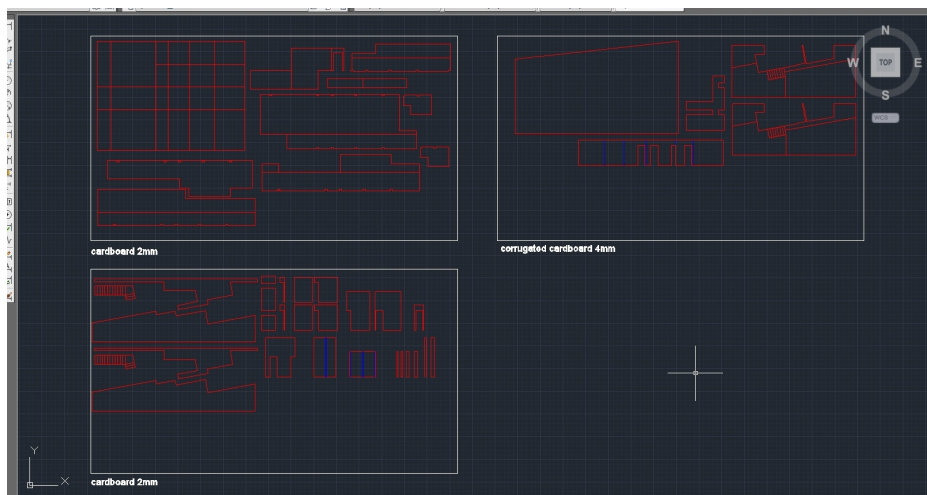
1. File setups

The laser cutter machine cuts and engraves only vector data. You can use different programs such as AUTOCAD, CORELDRAW, ILLUSTRATOR, and RHINO ETC. as long as your files are saved in DXF format.

In order to prepare your drawings for laser cutter, you will need to organize your drawings.

1.1. The drawings should be adjusted to the size of the laser cutter's bed (810 x 450 mm).

A very simple way to adjust your drawing is to draw a frame as a template on model space and to place the parts into this frame (template) to ensure that your drawing is not truncated.



In order to minimize the wasted material, all the pieces should be arranged in the most efficient configuration. Additionally, by labeling each piece, you can make easier to construct your model. Please use only **iso.txt** as text style for your part labels.

- **Please don't forget to remove duplicate lines. Commands for removing duplicate lines are overkill (Autocad) and Seldup (Rhino).**

- 1.2. The drawings should be scaled to the actual size of the model (1 unit=1 mm).
- 1.3. The laser cutter does not recognize layers, but colors. Your drawing should be organized by colors.
- Red (RGB: 255,0,0) for cutting
 - Blue (RGB: 0,0,255) for drawing
 - Black (RGB: 0,0,0) for engraving
- 1.4. The laser cutter does not recognize pen weights,

In AUTOCAD and RHINO, The line weights should be default
 In CORELDRAW, the line weights should be hairline.

- 1.5. The files should be correctly labeled in the following way.

Course code_Name_job number
Arch402_AyseKorkmaz_5

- 1.6. Please submit your files by email to lasercutter@arch.metu.edu.tr or bring them on a CD, flash memories will not be allowed.

2. Materials

The laser cutter is not designed to cut all types of materials. Please use the materials which mentioned on the approved materials list.

Approved Materials	Disapproved Materials
Fabric and leather (max ≤ 3mm) <ul style="list-style-type: none"> • Cotton • Felt • Leather Paper and cardboard (max 4mm) <ul style="list-style-type: none"> • Paper • Cardboard Plastic (max 6mm) <ul style="list-style-type: none"> • Acrylic Wood <ul style="list-style-type: none"> • Balsa (max 6mm) • Plywood (max 2mm) Rubber <ul style="list-style-type: none"> • Natural latex 	<ul style="list-style-type: none"> • PVC • Acetate • Vinyl • Polycarbonate • Masonite • MDF • Foamcore • glass • hardboard • metals • anything toxic when burned • stones • ceramics • materials not mentioned on the approved materials list
If you want to try a new material: first, you must consult with modelling lab staff	

3. Safety

Do not leave the laser cutter unattended while in use.

Do not forget to check exhaust.

In case of fire;

- Open lid to stop the laser cutter
- Turn off exhaust
- Notify the lab staff

4. Cleaning

All users are expected;

- to clean the laser-cutter bed with wet tissues or alcohol
- to throw away their trash into the appropriate recycling bins
- to clean workstations

Please do not forget to bring your double sided tape, masking tape (paper), cutters and wet tissues.

If you have any questions please contact the model making workshop staff.