

# Laser Cutting Materials Guide

## Materials that can be cut in the laser cutter:

*Note: These speeds may vary as each laser cutter is unique. You may need to lower or increase the speeds and powers listed below:*

- Paper
  - Cardstock
    - Speed: 500
    - Min/Max Power: 30/40
  - Thin Paper
    - Speed: 600
    - Min/Max Power: 30/30
- Cardboard
  - Cutting
    - Speed: 40
    - Min/Max Power: 40/40
  - Engraving
    - Speed: 1000
    - Min/Max Power: 30/30
- Styrofoam
  - Cutting
    - Speed: 45
    - Min/Max Power: 30/30
    - Notes: Multiple passes work the best
  - Etching
  - (While I have not done this personally, here are the settings I would try)
    - Speed: 1500
    - Min/Max Power: 30/30
- Corrugated Plastic
  - Cutting
    - Speed: 20
    - Min/Max Power: 80/80
    - Notes: Trace over materials 3 times for a good cut
  - Etching
    - Speed: 1000

- Min/Max Power: 30/30
- MDF
  - Cutting
    - Speed: 10
    - Min/Max: 40/40
  - Engraving
    - Speed: 1000
    - Min/Max: 30/30
- Pinewood
  - Cutting
    - Speed: 12
    - Min/Max Power: 65/75
  - Engraving
    - Speed: 1000
    - Min/Max Power: 30/30
- Plywood

*Note: These contain glue, and this can prevent the wood from cutting all the way through*

  - Cutting
    - Speed: 7
    - Min/Max Power: 70/70
  - Engraving
    - Speed: 1000
    - Min/Max Power: 30/30
- Plexiglass / Acrylic

*Note: Avoid extruded acrylic. Use cast acrylic.*

  - Cutting
    - Speed: 10
    - Min/Max Power: 70
  - Engraving
    - Speed: 1000
    - Min/Max Power: 30/30
- Leather (NOT Pleather!)
  - Cutting
    - Speed: 20
    - Min/Max Power: 70/70

- Etching
  - Speed: 1000
  - Min/Max Power: 30/30
- Rubber (made WITHOUT chlorine)
  - Cutting
    - Speed: 20
    - Power: 80/80
- Marble
  - Etching
    - Speed: 75
    - Min/Max Power: 80/80
- Anodized Aluminum
  - Speed: 90
  - Min/Max Power: 40/40
- Magnetic sheets
 

*Note: this will create magnetic dust in the machine and can get messy*

  - Speed: 40
  - Min/Max Power: 80/80
- Cloth
  - Synthetic Fabrics (will create darker shade when cut)
 

*Note: make sure that the fabric does not contain any PVC!*

    - Speed: 500
    - Min/Max Power: 25/25
  - Natural Fabrics (will create a lighter color when cut)
    - Speed: 500
    - Min/Max Power: 25/25

### **Materials unsuitable for the lasercutter:**

- Any material that contains halogens
  - Releases toxic and corrosive gases
    - PVC
    - Some rubbers
    - Vinyl
    - Neoprene
    - Teflon

- ABS
- Nylon
- Epoxy Matrices
- Polyester
- Carbon Fiber
- Non-anodized metals
  - Can reflect from the laser in the laser cutter
- Glass
  - Can create microshards that will go into the air
- Moist porous, hard materials
  - Can absorb moisture / chemicals that get trapped in the material and then will be released by the laser cutter.
  - Steam can build up in these materials and create a steam explosion. Be sure to let the material dry completely before using the laser cutter.
- HDPE (Milk bottle plastic)
  - Catches fire and melts
- Food
  - Food cut from the laser cutter will not be food safe. It can be done, but the materials that can be cut in the laser cutter (like acrylic) isn't safe to consume.