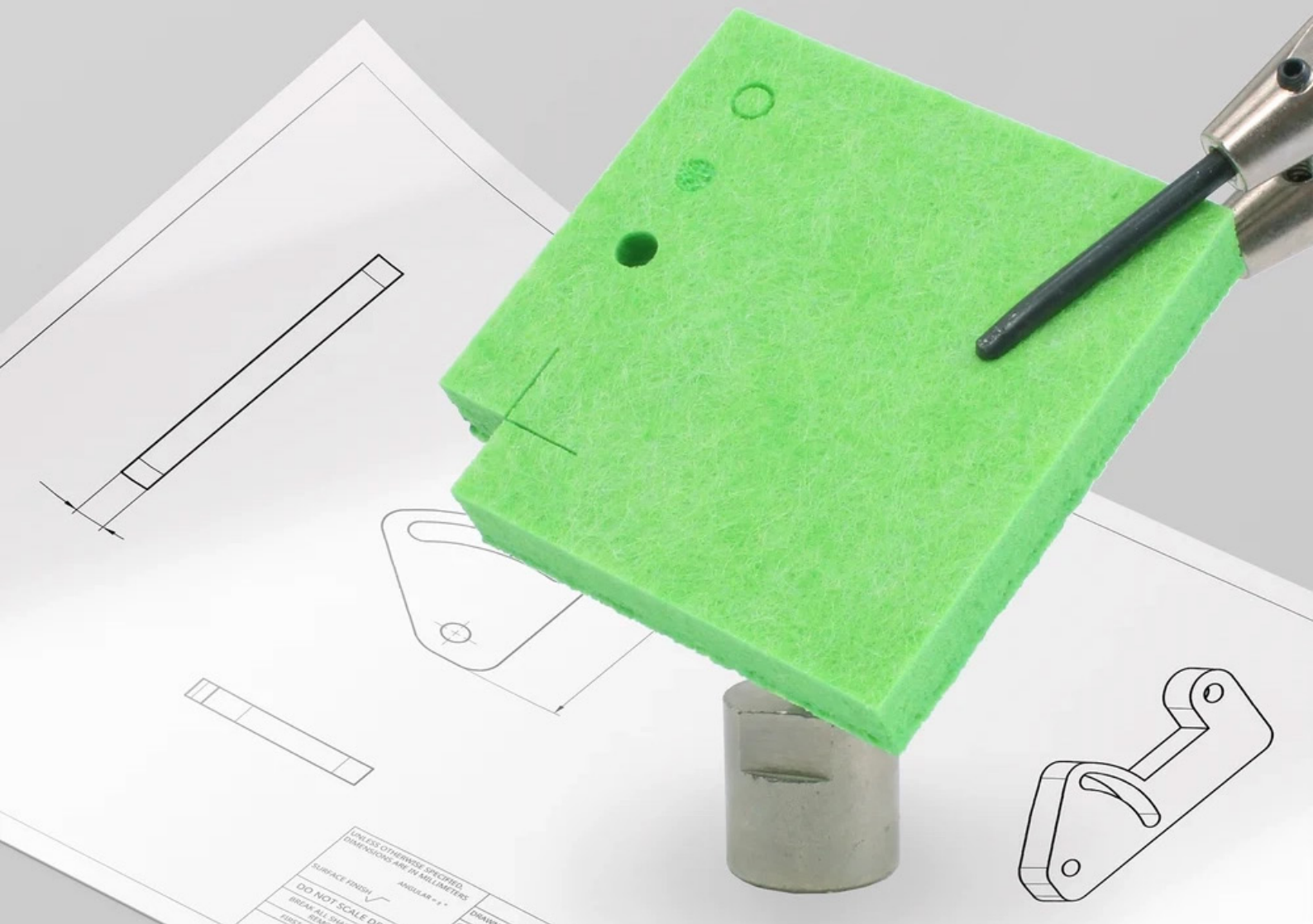


# snijlab

## PET felt

Design Guide for laser cutting



Specifications • Tolerances • Design Manual

### Laser cutting made easy

Produce custom parts at lightning speed using laser cutting. Cost-effective from single units to production runs. Innovate faster and respond more effectively to the market.

#### Questions about laser cutting?

Get in touch

info@snijlab.nl

+31 10 30 70 949

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Up-to-date product information

PET felt

→ <https://snijlab.nl/en/products/pet-felt>

Design Guide **PET felt**

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[www.snijlab.nl](http://www.snijlab.nl)

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Snijlab BV is ISO-9001 certified.

This means we meet the industry standard for repeatable quality.

## Material properties

PET felt consists of densely compressed polyester fibres, made from at least 70% recycled PET, such as plastic bottles. The fibres are arranged in all directions rather than along a grain, as with woven fabrics. As a result, the material does not fray when laser-cut and remains dimensionally stable and lightweight.

The material is commonly used in acoustics, where it serves as a sound-absorbing panel in places such as offices and restaurants. It feels softer than cardboard or wood. The laser-cut edges are slightly fibrous but do not discolour, and the material can be bonded easily with adhesive.

Snijlab stocks PET felt in 26 colours, available in a thickness of 9 mm.

## Available thickness



## Properties

|                  |                            |
|------------------|----------------------------|
| Material         | PET felt                   |
| Abbreviation     | PET                        |
| Structure        | Non-woven polyester fibres |
| Colors           | 64                         |
| Thickness        | 9 mm                       |
| Max. dimensions  | 2400 x 1200 mm             |
| Kerf width       | 0,2 mm                     |
| Thickness toler. | ?                          |
| Density          | $\pm 210 \text{ kg/m}^3$   |
| Sheet weight     | $0,04 \text{ kg/m}^2$      |
| Engraving        | Yes, darker and rougher    |
| Line engraving   | Yes, clearly visible       |

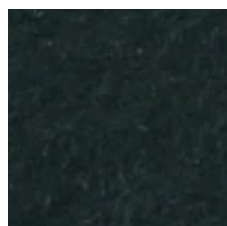
## Resistance

|                        |         |
|------------------------|---------|
| Translucent            | No      |
| Waterproof             | No      |
| Airtight               | No      |
| Chemical resistance    | Low     |
| UV-resistance          | Limited |
| Temperature resistance | Limited |
| Outdoor use            | No      |

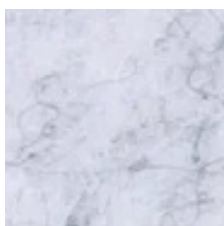


# Available colours

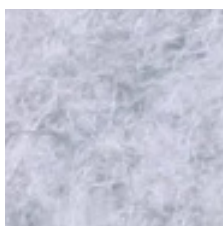
The range includes the following colours. Check the website for availability.



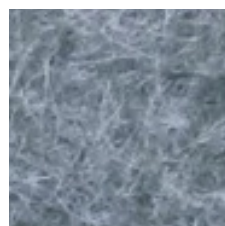
black



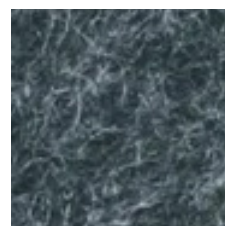
20% grey



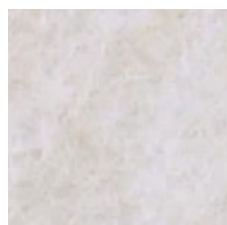
30% grey



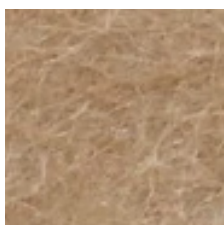
50% grey



80% grey



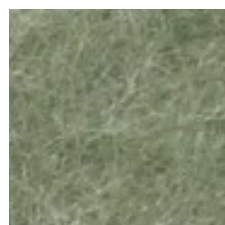
beige



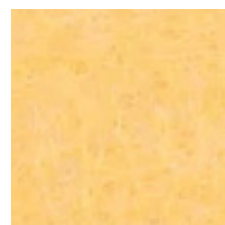
brown



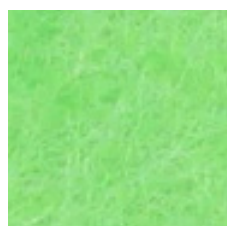
cerulean blue



forest green



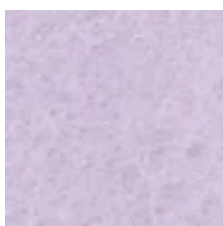
yellow



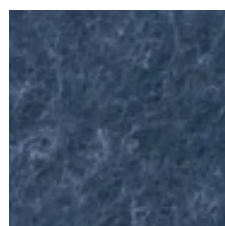
light green



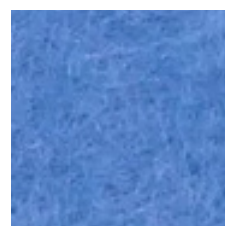
curry yellow



lilac



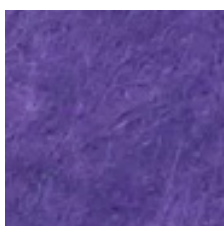
midnight blue



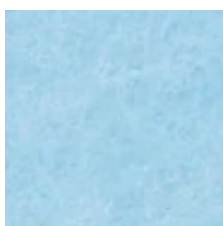
ocean blue



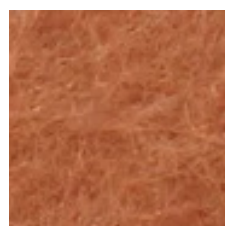
orange



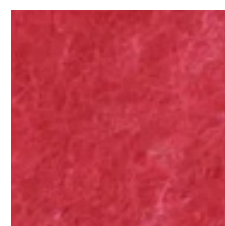
purple



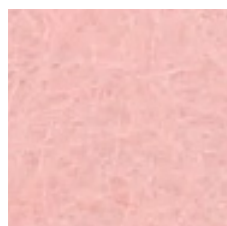
pastel blue



rust brown



red



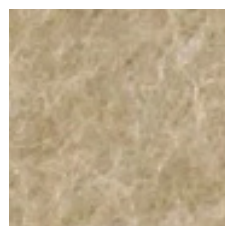
pink



sky blue



anthracite



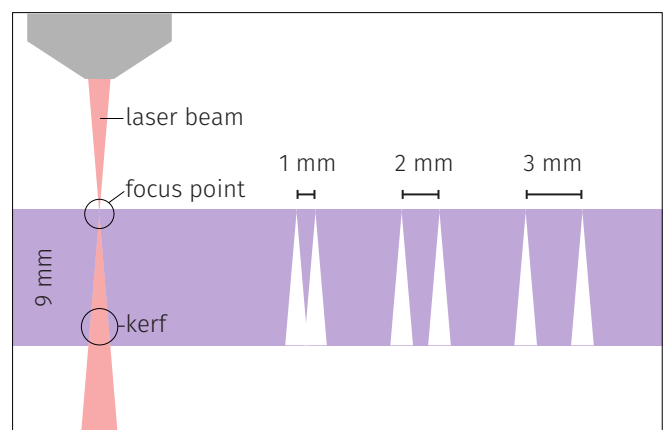
taupe





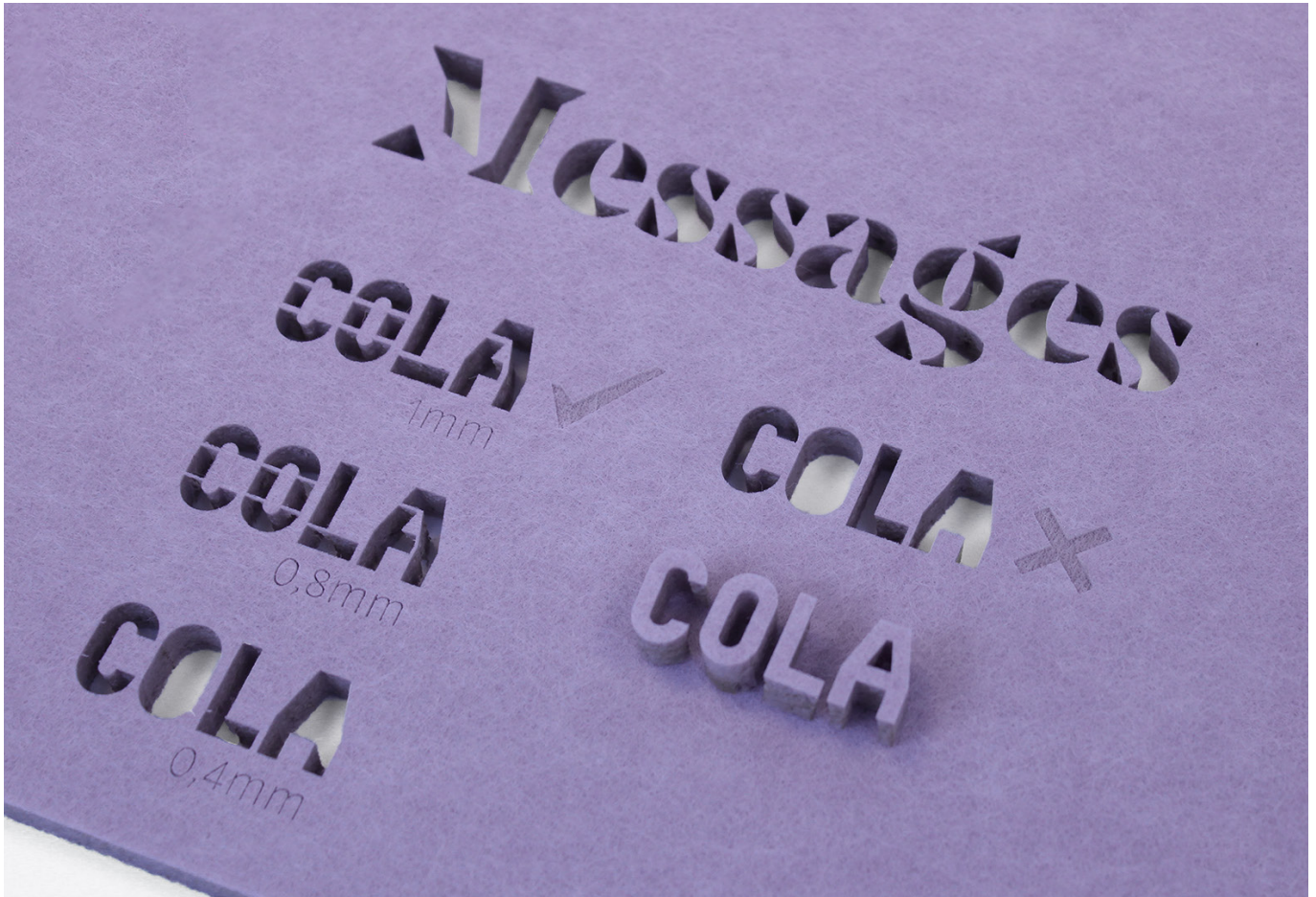
## Use a minimum width of 3 mm, anything less is too narrow

Thin strips of PET felt have too few fibre connections to maintain their shape. They may bend or break during cutting or handling. For straight walls and protruding features, maintain a minimum width of 3 mm. Use 4-5 mm for long, unsupported strips or parts that are frequently handled, such as handles or connectors.



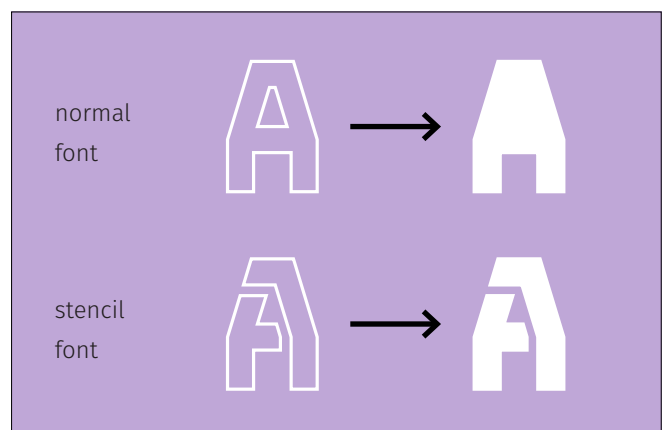
At a width of 1 mm, the material gets scorched by the laser. At 2 mm, the width is still unstable, and only from 3 mm onwards does it remain stable.





## Stencil fonts

Always use a stencil font when cutting out letters. Stencil fonts prevent loose pieces from falling out of the sheet: inner shapes, such as the circle inside the letter “O”, are held in place by connecting bridges. These bridges must be at least 0.8 mm wide to maintain their shape.



On the left, a close-up of what the laser cuts out. On the right, what remains when you lift the sheet.



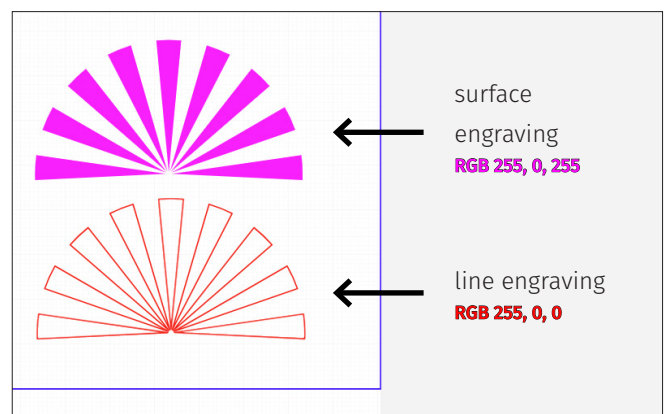


## Surface engraving on PET felt

Surface engraving is possible on PET felt. Large engraved areas become darker and develop a rougher texture than the rest of the material.

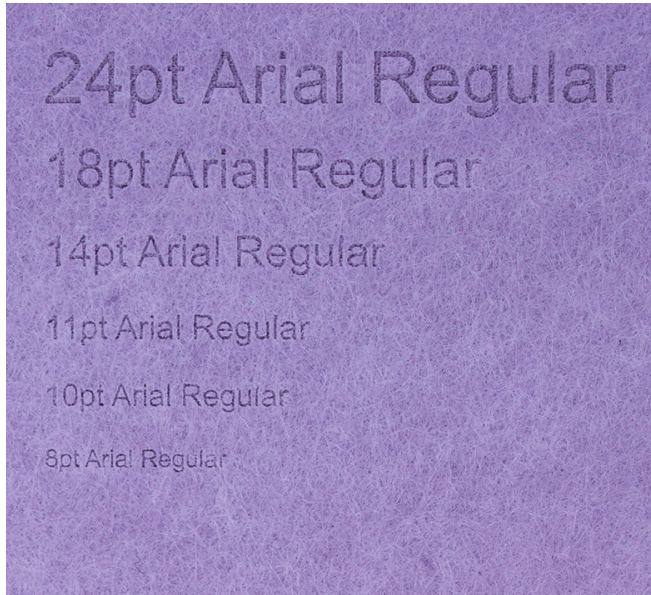
## Line engraving on PET felt

Line engravings become slightly darker and more defined. This creates a clear, legible contrast, making line engraving suitable for logos, icons, and similar designs.



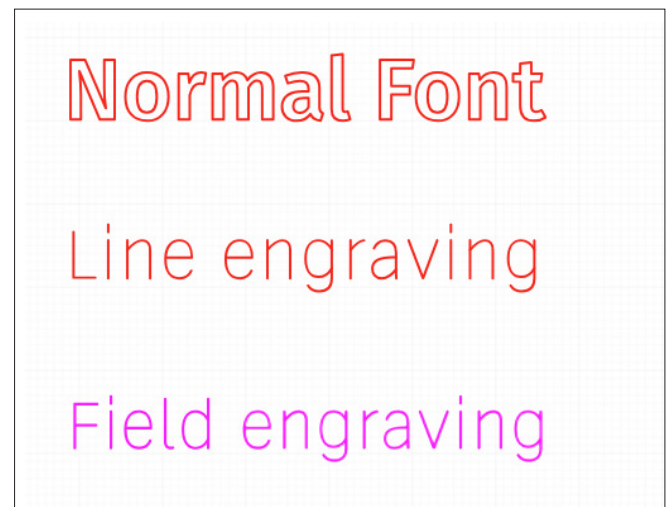
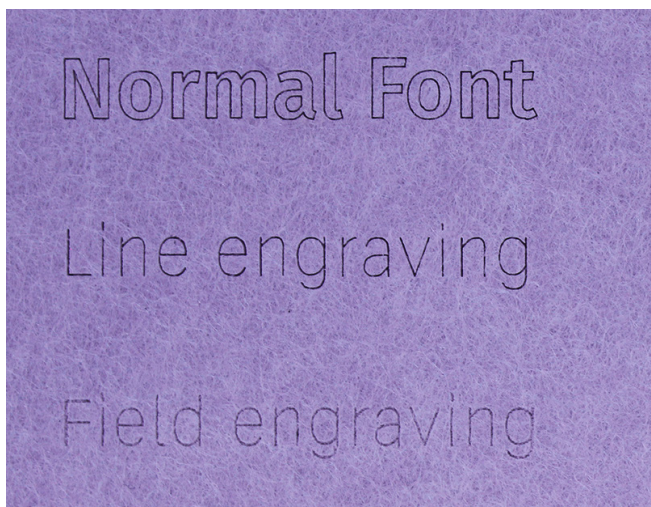
This is how surface and line engraving look in the editor. Top: surface engraving; bottom: the same shape as line engraving.





### Minimum text size: 14pt

Engraved letters provide good contrast, even at small sizes. For optimal readability, use a minimum font size of 14 pt.



### Engraving types for text

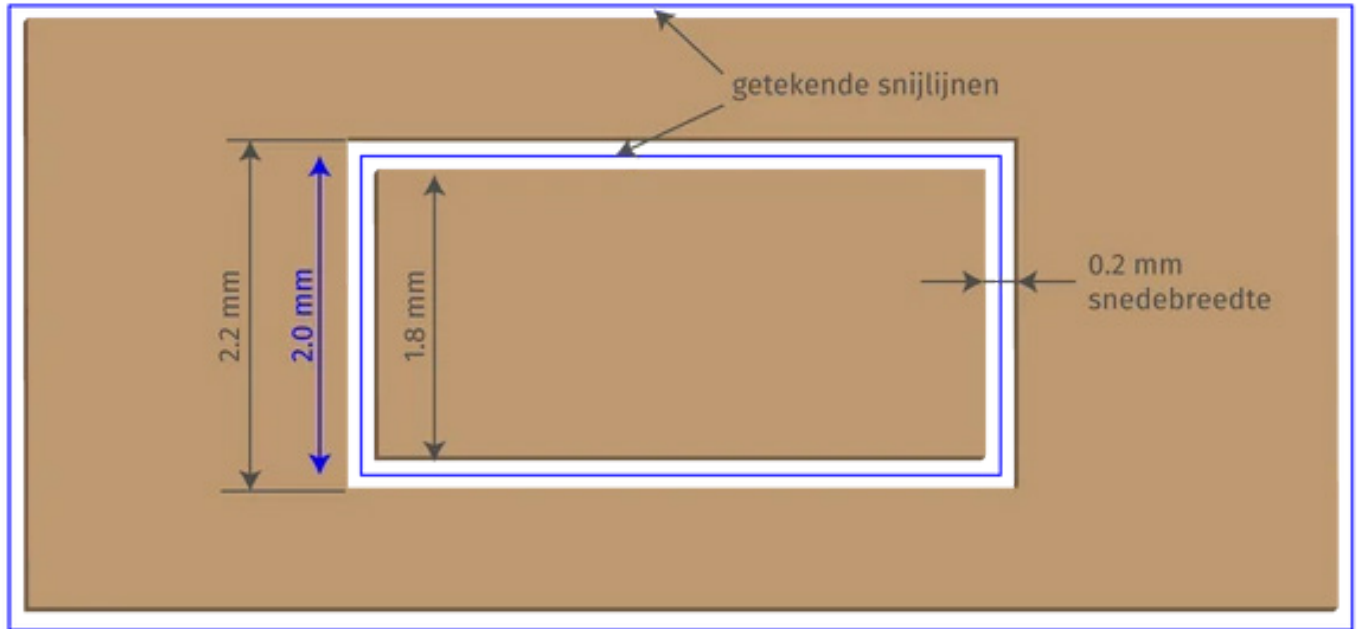
For bold lettering, surface engraving works best. With line engraving, bold letters appear as outlines. For thin lettering, line engraving is the better choice, as surface engraving provides less contrast. Where possible, use a single-line font.

From top to bottom: a regular font with line engraving, a single-line font with line engraving, and a thin font with surface engraving.

**TIP** Relief SingleLine

Single line font from Adobe Fonts' library.





## 0,2 mm kerf width

The kerf width, or material lost during cutting, is 0.2 mm. Due to the thickness of PET felt, the kerf tapers as it passes through the material.

On the following pages, we'll show you how much to compensate for kerf loss to achieve a snug fit for an inlay and a secure slot joint.



# Offset for inserts



The laser beam has a kerf width of 0.2 mm, and the cut tapers through the material. To achieve a perfect fit for inserts, you need to compensate for the kerf width in your design.

In these examples, the outer shape remains unchanged; only the inner shape is adjusted.

## + 0,8 mm - perfect fit

With an offset of 0.8 mm, the insert fits snugly and has a smooth surface.

## + 0,6 mm - loose fit

With an offset of 0.6 mm, the insert stays in place but fits loosely. A visible gap remains, and the insert is more likely to fall out.

## + 0,2 mm - too loose

With an offset of 0.2 mm, the insert falls out of the cutout.



# Offset for press-fit joints



The laser beam has a kerf width of 0.2 mm, and the cut tapers through the material. To achieve a perfect fit for press-fit joints, you need to compensate for the kerf width in your design.

In these examples, the outer shape remains unchanged; only the inner shape is adjusted.

## **+ 0,2 mm - perfect fit**

With an offset of 0.2 mm, the joint fits perfectly. The parts stay firmly in place but can still be taken apart.

## **+ 0,6 mm - loose fit**

With an offset of 0.6 mm, the joint is loose. The parts do not stay firmly in place, and a visible gap remains.

## **+ 1 mm - too loose**

With an offset of 1 mm, the joint no longer holds. The parts come apart freely.





## PET felt

Excellent sheets for visual and acoustic applications.



## PE rigid foam

A relatively rigid foam with a professional appearance.

| Abbreviation        | PET                        | PE                |
|---------------------|----------------------------|-------------------|
| Colour              | 26                         | Black             |
| Thickness           | 9 mm                       | 5, 10, 15 & 20 mm |
| Max. dimensions     | 2400 x 1200 mm             | 1200 x 600 mm     |
| Thickness toler.    |                            | 0,2 mm            |
| Edge finish         | Fused                      | Clean             |
| Surface engraving   | Yes, glossy                | Yes               |
| Line engraving      | Yes                        | Yes               |
| Translucent         | No                         | No                |
| Outdoor use         | No                         | No                |
| Chemical resistance | Limited                    | High              |
| UV resistance       | Limited                    | Moderate          |
| Structure           | Non-woven polyester fibers | Closed-cell       |





## Create your design

Follow our design rules and turn your design into a vector drawing or CAD file.

## Upload & order

1. Upload your drawing
2. Select your material
3. Choose a delivery time
4. Choose postal delivery, courier delivery or collection.

The price is calculated automatically in your shopping cart. Order and pay securely online.

### How much does it cost?

Upload your design to see the price. The cost depends on your design, material, quantity, and delivery time.

### What is the delivery time?

You can choose your preferred delivery date in your shopping cart.

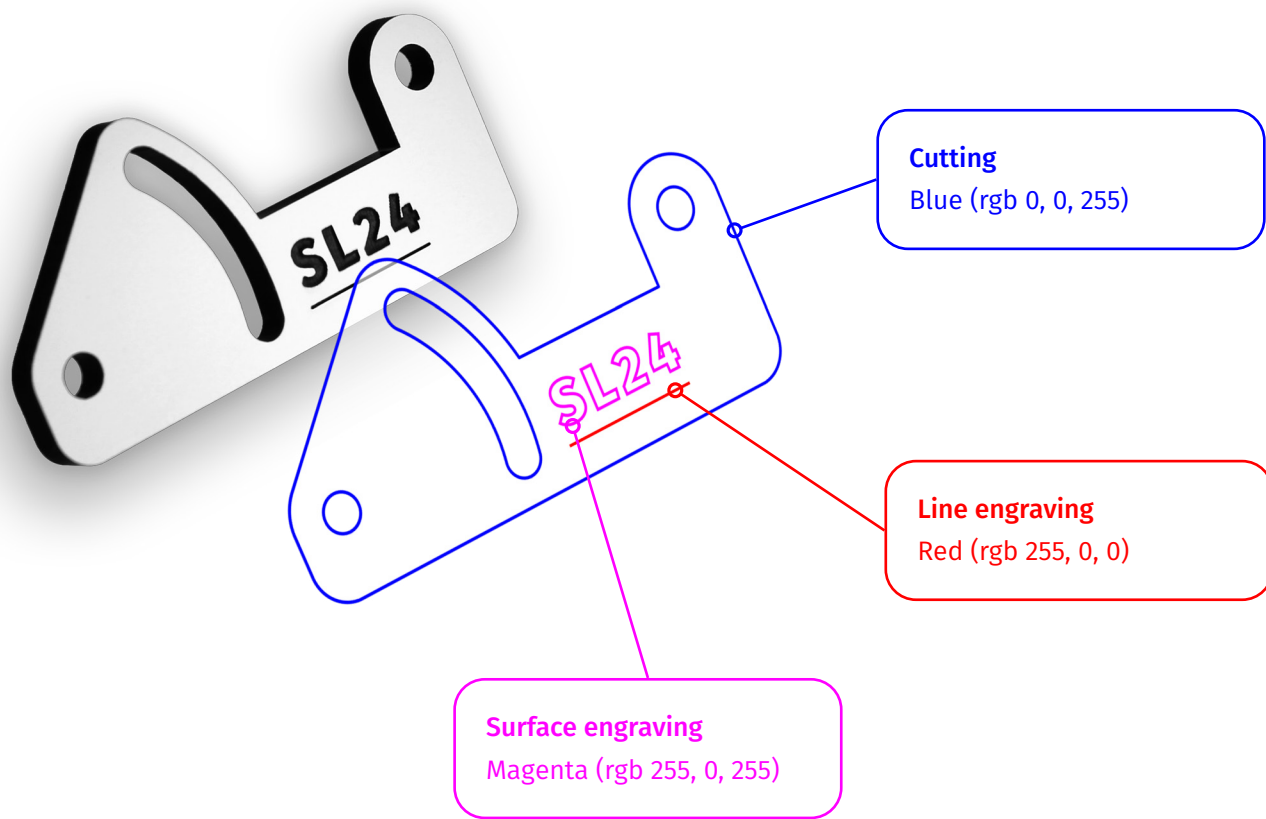
### Ordering as a business?

To order on invoice or using a purchase order, apply for a business account.



Up-to-date information on how ordering works at Snijlab

→ <https://snijlab.nl/en/pages/how-does-it-work>



## Vector or CAD file

For laser cutting, you need a vector drawing or CAD file. You can create one using software such as Adobe Illustrator, AutoCAD, or SolidWorks.

## Line colours

Use the following line colours to indicate what should be cut or engraved:

**Cutting** Blue (RGB 255, 0, 0)

**Line engraving** Red (RGB 0, 0, 255)

**Surface engraving** Magenta (RGB 255, 0, 255)

## Layout

Create your design at full scale in RGB colour mode and use millimetres as the unit of measurement. The file should contain only cutting and engraving lines, with no dimensions or centre lines.

### Formats

DWG, DXF, AI, PDF

### Scale

1:1

### Unit

Millimetres

### Max. dimensions

2400 x 1200 mm

### Outlines

Convert text and filled shapes to outlines.

### Clean files

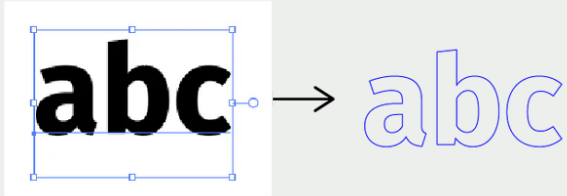
Remove all dimensions, centre lines, borders and 3D views.



Detailed information on the drawing rules for laser cutting.

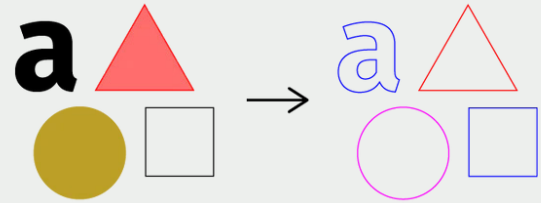
→ <https://snijlab.nl/en/pages/drawing-rules>

### Text in outlines



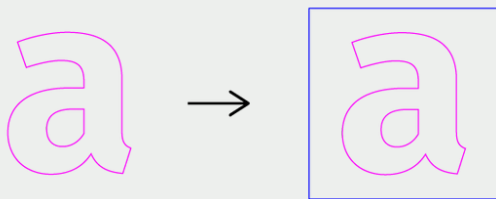
Text must be converted to vector outlines. Always use stencil fonts for templates.

### Shapes to vectors



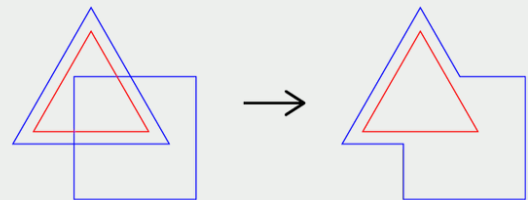
Convert shapes to vector outlines. Use the line colours specified in the drawing rules..

### Bounding boxes



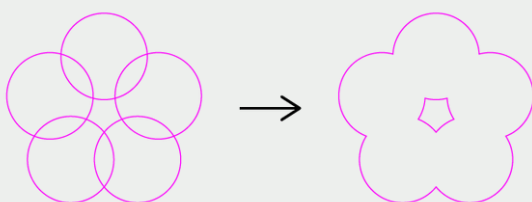
Every drawing must contain cutting lines. Add a bounding box around engravings

### Overlapping cutting lines



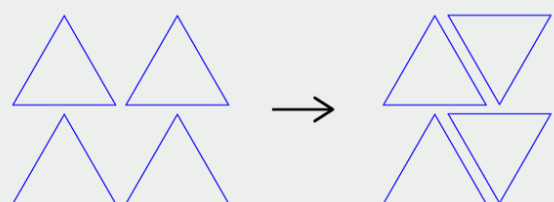
Merge overlapping cutting lines to cut out the outer shape.

### Surface engraving



Combine overlapping surface engravings into a single shape so that the entire area is engraved.

### Nesting



It is more cost-effective to place multiple shapes made from the same material close together.