



POLITECNICO  
MILANO 1863

# Hot wire cutter: file preparation

Labora model making

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## Allowed materials

**Styrofoam** and **expanded polystyrene**

**Polyurethane foam**

Extruded expanded polystyrene **XPS** (styrodur)

## Forbidden materials

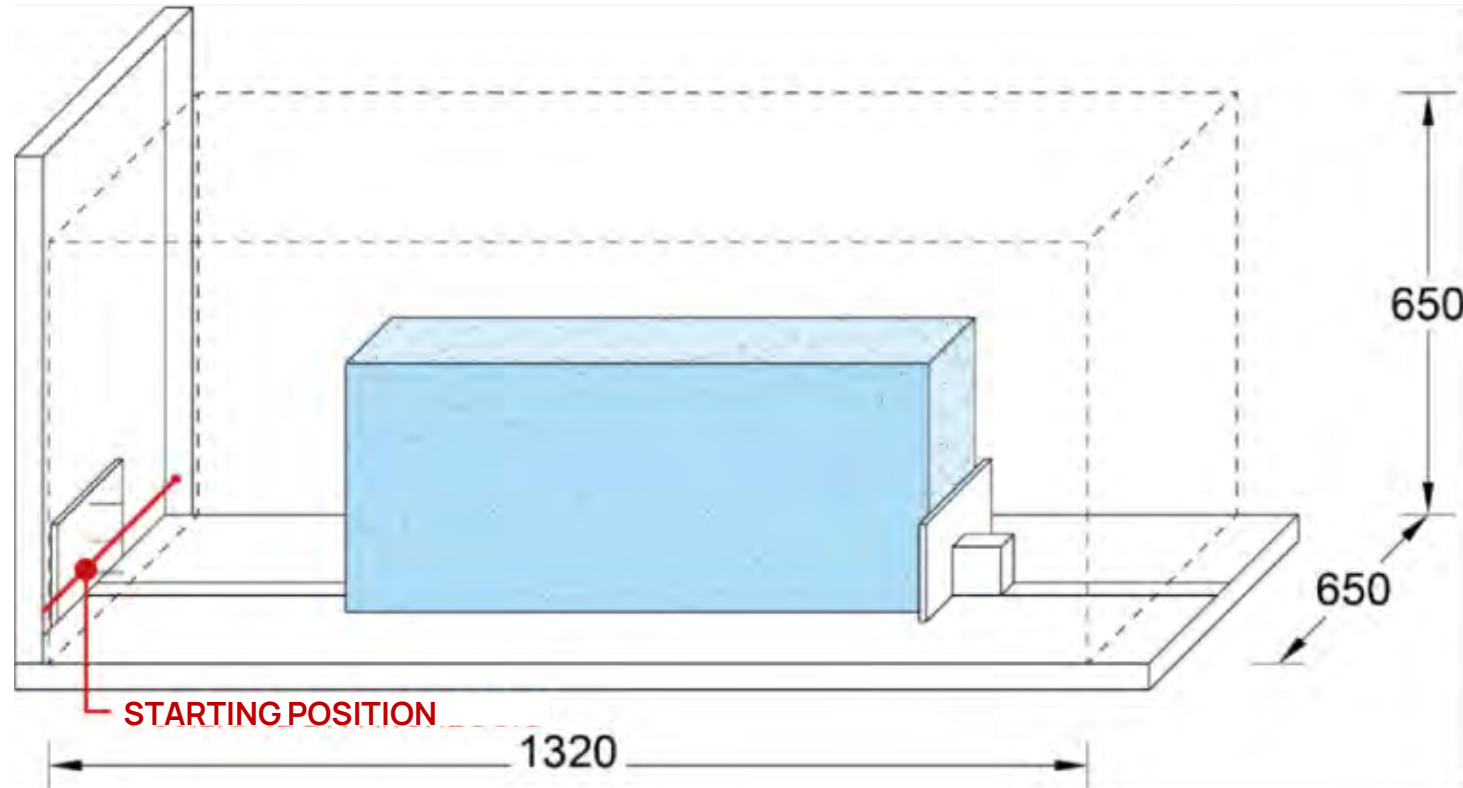
**Rigid plastics** like metacrylate

**Laminated expanded plastics** (Poliplat, Kapa and similar)

**Expanded polyurethane**

# Cutting area

The **maximum dimensions** of the sheet or block that can be cut by the machine are: **1320 x 650 x 650 mm**.



# File preparation

- When preparing cutting files, remember to draw the geometries with the actual measurements **already reduced to the model scale and in millimeters**.
- Place the pieces **inside a frame** with the dimensions of the sheet of material. Rotate the shapes so that the longest side is parallel to the longest side of the material.
- Put the pieces you need to cut at least **10 mm from the frame**, starting from the lower left corner, and at least **5 mm apart from each other**.
- **Remove the frame before saving the file**, which must be exported in **.dxf 2000** to be imported in the software of the machine.

**If you need to cut multiple sheets, remember to separate the drawings and not keep them all in a single file.**

# Useful tips

## Overlapping lines

Before exporting, make sure there are **no overlapping lines**, which could affect the outcome of the process.

Use command ***\_overkill***, if the file was prepared in AutoCAD, to delete duplicate lines.

## Complex geometries

Make sure the file is drawn with simple drawing elements, namely **lines, polylines, arcs**. We recommend using the ***\_join*** command, so you can merge the lines.

In case splines are present, turn them into polylines through the ***\_pedit*** (AutoCAD) command.

Complex entities such as **groups, series and blocks must be exploded**, as they are not recognized by the software.

## Export

The file must contain **only the pieces to be made, the frames and the corresponding layers**. Clear all unused, turned off or frozen layers.

In order to avoid the production of **pieces that are too fragile**, check that there are no elements in your drawings that are **smaller than 5 mm**.

Please inform the staff about the **density of the material in g/cm<sup>3</sup>**, so that they can set the cutting parameters properly.



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