

TIPS FOR PANELS PROCESSING

November 2024



Never give up

Mirror Plus and Kristall Optical and Metallic 3D

PROCESSING TIPS

Mirror Plus, Kristall Optical and Metallic 3D panels must be machined by a qualified person using suitable equipment.

The entire fabrication process is explained in detail in the following chapters on cutting, milling, drilling, edging and gluing.

CUT

Panels should preferably be cut using **tungsten carbide** or **diamond tipped cutting machines**.

Tungsten carbide blades are a very durable solution but must be handled with care as they can be easily damaged if they come into contact with metal surfaces.

The material can produce inert dust during cutting. Cutting personnel must be properly trained and the equipment used to cut the materials to be bonded must be suitable for the purpose, well maintained and calibrated.

Any company working with panels must ensure that proper handling procedures are followed.

MANUAL CUTTING

If it is necessary to work on site, portable circular saws will be used.

The tool must be **well sharpened** so as not to apply excessive pressure, thus reducing the risk of chipping and/or cracking of the material.

Always work in accordance with good engineering and safety practice.

CUTTING WITH BENCHTOP MACHINES

In this case, **circular saws** are used. For best results it is essential to follow these instructions.

First position the **Mirror Plus** or **Kristall Optical** panel with the finishing side facing outwards in relation to the direction of blade rotation. It is essential that the panel is **firmly supported and secured** using a height adjustable clamping tool to prevent movement and vibration.

It is essential to:

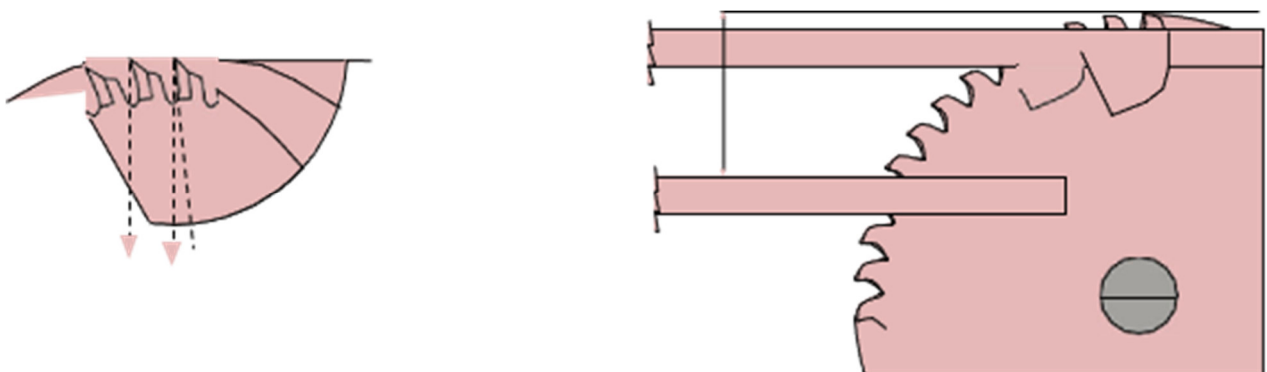
- **Use an accurate guide**
- **Ensure that the blade is aligned with the work surface** and that the projection is correct

Recommended specifications for circular saws:

- Tooth pitch: 10-15 mm
- Cutting speed: 3000-4000 rpm
- Peripheral speed: 60-100 m/s
- Feed speed: 15-30 m/min

It is important that the blades are not too thin: a thickness of less than 2 mm reduces rigidity, causing vibrations and making the cut less precise.

Panel progress profile:



CUTTING THE PANELS

The above also applies to cutting composite panels where the pigmented portion is bonded to one or both sides of the substrate.

Again, **the use of band saws is not recommended.**

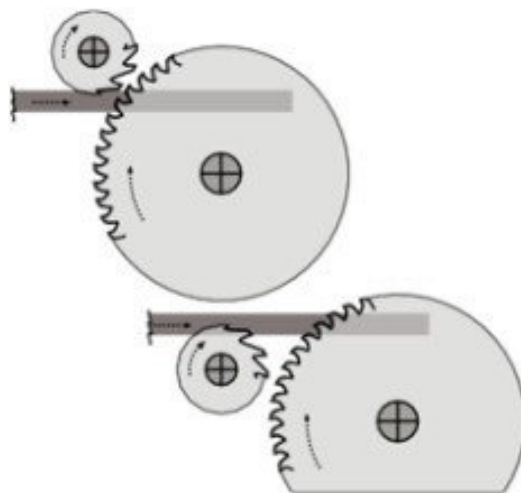
For best results, it is preferable to use **fixed circular saws** equipped with scoring devices, carefully adjusting the height of the blade. The quality of the cut depends on the profile and number of teeth, the peripheral speed, the feed speed and the entry and exit angle of the blade.

For cutting composite panels, we recommend the following:

- Select a **blade suitable for the material**
- Use a **slow feed speed** without exerting too much pressure on the material
- Use a **dust extraction system** during machining

These operations must be carried out in accordance with **good engineering practices and safety regulations.**

Circular saws with blade equipped with scoring invitation:



MILLING

Depending on the circumstances, milling can be carried out in various ways with **portable or stationary tools**.

It is important to use cutters or saw blades with negative rake cutting edges.

This high frequency cutter is equipped with a mirror polished chip groove. Chip removal is perfect. The cutting edges are very sharp and faceted, and the cut is smooth even at high feed rates.

Cutters/cutting blades with negative rake cutting edges:



45 degree bevel edging machine:



45 degree
bevel assembly



SURFACE MAINTENANCE

Immediately after removing the protective film, clean the surface with an antistatic spray by spraying directly onto the surface.

Use a clean microfibre cloth with circular movements to increase scratch resistance and protect against dust.

The protective film should not be removed until the final stage of panel installation.

Ensure that the microfibre cloth is free of grains or impurities that could compromise a perfect and uniform cleaning.

Example of indicated products for cleaning the panel:





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