# Processing and handling guidelines

## Introduction

Our standard lightweight panels and customized panels demand not only a great deal from the modern Design Composite manufacturing technology, but also a comprehensive know-how of processing and handling by our customers.
The following instructions and suggestions should assist you to handle Design Composite lightweight panels according to their properties.

## Machining of Design Composite panels

General
In principle the selection of the cutting tool depends on the type of facing sheet material.
NOTE: In general we recommend wearing protective gloves and safety glasses during mechanical processing of the panels!

Drilling
Any conventional metal drill bit (HSS spiral bit) can be used. Panels should be drilled with high drill speed (50 – 100 m/min, but low feed speed). We recommend a pilot hole if the diameter is more than 5 mm.
Due to the thermal expansion of the thermoplastic facing sheets a hole diameter of at least 2 mm bigger than the screw diameter is imperative.
Lubrication is useful during drilling in order to achieve optimum results.

Sawing
Sandwich panels can generally be cut with standard workshop equipment (e.g. bench saw or hand circular saw, jig saw or band saw). Carbide tipped saw blades with a large number of teeth together with high cutting speed and low feed speed produce optimum results. A support can prevent detachment of the lower facing sheet.

Cutting thermoplastic panels (e.g. clear-PEP®, clear-PEP® color, AIR-board®, AIR-board® satin) requires special saw blades in order to avoid splintering of the cut edges.
Recommendation: Leitz HW circular saw blade WK 871-3 300x3,5/2,5 Z60/ 15.71.
For further information see www.leitz.org

Cutting with laser and/or water-jet is not possible!

Milling
Sandwich panels can be milled with solid carbide milling tools. Note: high cutting speed (15.000 – 25.000 R/min) combined with low feed speed produces optimum results.

Grinding
Grinding is used to adjust minor top surface defects or rough cutting edges. A high grinding speed with low feed speed is recommended. The requested roughness can be adjusted with the grain size of the sandpaper. A belt speed of 10 m/s is suggested.

Burnishing
Manual polishing can either be done with a soft cloth or with a suitable felt together with a polishing paste. Larger surfaces should be polished with a face-polishing machine that is equipped with a cloth, felt or lambskin soaked with polishing paste.