



MACHINNING: Sawing, milling, drilling

Cutting and Milling

MARCRYL FS flat sheet acrylic is easy to saw and cut on standard workshop equipment. It can be machined on conventional milling machines with standard high speed tools. The following recommendations are provided as a guide: with some experimentation and experience good efficiency and a high standard of cut finish can be achieved.

Recommendations:

	Circular Saw	Band Saw	Milling Machine
Clearance Angle	10 – 15°	20 – 30°	2 – 10°
Rake Angle	0 - 5°	0 - 5°	0 - 5°
Cutting Speed	1800 – 2500 rpm	600 – 1000 m/min	1000 – 2000 m/min
Feed Speed	10 m/min	20 – 25 m/min	0.1 – 0.5 mm/rev
Tooth Spacing	9 – 20mm	1.25 – 3.3 mm	-

Before starting to cut secure the sheet against vibration and ensure the saw blade is up to speed. The blades of circular saws should be set to protrude only slightly through the sheet surface. The cut should be kept clear from swarf before starting the cut, and that swarf is cleared from the cut, preferably by an extraction system. Notches adversely affect the mechanical properties of acrylic and should be avoided. . If the feed rate is too low, unwanted heat build-up may occur at the cut edges.

Drilling

For best results when drilling some experimentation is beneficial, as is use of drill bits ground as follows:

Parameter	Value
Clearance Angle	3°
Tip Angle	60 - 90°
Helix angle	12 - 16°
Rake Angle	0 - 4°
Cutting Speed	0.1 – 0.3 mm/rpm
Drill Tip Speed	10 – 60 m/min

The following points should be observed when drilling MARCRYL FS:

- Secure sheets to avoid vibration.
- Thin sheet should be clamped to a flat solid surface.
- The hole should be at least 1.5 x (hole diameter) from the edge of the sheet.
- Avoid notches in the drilled hole as these can lead to breakage.
- If cutting fluids are used first check their compatibility with the sheet.
- Forming threads for fasteners should only be done if there is no alternative.



Brett Martin Ltd. pursues a policy of continuous product development and reserves the right to amend specifications without notice.

Brett Martin Ltd., 24 Roughfort Road, Mallusk, Co. Antrim, N. Ireland, BT36 4RB.
Tel: +44 (0)28 9084 9999 Fax: +44 (0)28 9083 6666 E-mail: technical@brettmartin.com

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