



Foamalux

Foam PVC Sheet

Our Foamalux range can easily be printed, cut, drilled, shaped and bonded allowing flexibility and creativity of design when fabricating everyday objects or one-off items. With bright white, matt and gloss, colours and environmentally friendly products, our Foamalux range offers a wide choice of options.

Within our Foamalux range we have two products. Foamalux Eco and Foamalux Xtra, which contain up to 80% regrind. In addition to the black core containing regrind, Foamalux Xtra has white surfaces suitable for printing made from virgin PVC.

Product Range

Product Range	Foamalux White, Foamalux Light, Foamalux Colour, Foamalux Ultra, Foamalux Xtra, Foamalux Eco, Foamalux Calibre
Colours	Bright White, Red, Yellow, Green, Blue, Grey, Black
Surface	Matt, Gloss
Options	Foamalux Xtra – single sided or double sided, Foamalux Calibre – weatherable UV grade

Applications

- Point of sale displays
- Signage
- Shop fittings
- Shelving
- Furniture and cabinetry
- Vehicle fittings and linings
- Window frames, trims and shutter boxes
- Fascias and soffit boards
- Exhibition stands
- Partitions
- Site hoardings
- Freezer linings
- Backing boards
- Pet enclosures
- Large letters and decorative shapes

Product Features

- Easily machined and fabricated
- Suitable for digital and screen printing plus vinyl application
- Lightweight
- Smooth surface
- White products give excellent colour reproduction
- Strong, rigid, durable
- Moisture, mould and chemical resistance
- Provides acoustic and thermal insulation
- Good fire performance
- Eco options available
- Foamalux Calibre – UV resistant option available
- Foamalux Calibre provides dimensional stability



Product Options & Properties

Foamalux White

Property	Standard	Value	Units
Density	-	0.55-0.75	g/cm ³
Moisture Absorption	ISO 62	<0.25	% by weight
Shore Hardness	ISO 868	>30	-
Tensile Strength	ISO 527	15	MPa
Flexural Modulus	ISO 178	1100-1300	MPa
Impact Resistance (Charpy)	ISO 179-1/1eU	11	kJ/m ²
Thermal Expansion	ISO 11359-2	0.068	mm/m°C
Service Temperature	-	-20 to +60	°C

Sheet Size (mm)	Thickness (mm)
1220 x 2440	1, 2, 3, 4, 5, 6, 8, 10, 13, 19 & 24
1560 x 3050	2, 3, 5, 10, 15 & 19
2050 x 3050	1, 2, 3, 4, 5, 6, 8 & 10

Foamalux Light

Property	Standard	Value	Units
Density	-	0.45-0.55	g/cm ³
Moisture Absorption	ISO 62	<0.25	% by weight
Shore Hardness	ISO 868	>30	-
Tensile Strength	ISO 527	15	MPa
Flexural Modulus	ISO 178	900-1100	MPa
Impact Resistance (Charpy)	ISO 179-1/1eU	10	kJ/m ²
Thermal Expansion	ISO 11359-2	0.068	mm/m°C
Service Temperature	-	-20 to +60	°C

Sheet Size (mm)	Thickness (mm)
1220 x 2440	2, 3, 4, 5, 6, 8 & 10
1560 x 3050	2, 3, 5, & 10
2050 x 3050	2, 3, 4, 5, 6, 8 & 10

Foamalux Colour

Property	Standard	Value	Units
Density	-	0.50	g/cm ³
Moisture Absorption	ISO 62	<0.25	% by weight
Shore Hardness	ISO 868	>30	-
Tensile Strength	ISO 527	15	MPa
Flexural Modulus	ISO 178	900-1100	MPa
Impact Resistance (Charpy)	ISO 179-1/1eU	14	kJ/m ²
Thermal Expansion	ISO 11359-2	0.068	mm/m°C
Service Temperature	-	-20 to +60	°C

Sheet Size (mm)	Thickness (mm)
1220 x 2440	3 & 5
2050 x 3050	3 & 5

Foamalux Ultra

Property	Standard	Value	Units
Density	-	0.60-0.80	g/cm ³
Moisture Absorption	ISO 62	<0.25	% by weight
Shore Hardness	ISO 868	>50	-
Tensile Strength	ISO 527	25	MPa
Flexural Modulus	ISO 178	1600-1800	MPa
Impact Resistance (Charpy)	ISO 179-1/1eU	14	kJ/m ²
Thermal Expansion	ISO 11359-2	0.068	mm/m°C
Service Temperature	-	-20 to +60	°C

Sheet Size (mm)	Thickness (mm)
1220 x 2440	3 & 5

Foamalux Xtra

Property	Standard	Value	Units
Density	-	0.55-0.65	g/cm ³
Moisture Absorption	ISO 62	<0.25	% by weight
Shore Hardness	ISO 868	>30	-
Tensile Strength	ISO 527	17	MPa
Flexural Modulus	ISO 178	1000-1200	MPa
Impact Resistance (Charpy)	ISO 179-1/1eU	12	kJ/m ²
Thermal Expansion	ISO 11359-2	0.068	mm/m°C
Service Temperature	-	-20 to +60	°C

Sheet Size (mm)	Single Sided (S1) Thickness (mm)	Double Sided (S1) Thickness (mm)
1220 x 2440	3, 5 & 6	10
1560 x 3050	-	10
1560 x 3050	-	10

Foamalux Eco

Property	Standard	Value	Units
Density	-	0.50-0.60	g/cm ³
Moisture Absorption	ISO 62	<0.25	% by weight
Shore Hardness	ISO 868	>30	-
Tensile Strength	ISO 527	15	MPa
Flexural Modulus	ISO 178	900-1100	MPa
Impact Resistance (Charpy)	ISO 179-1/1eU	12	kJ/m ²
Thermal Expansion	ISO 11359-2	0.068	mm/m°C
Service Temperature	-	-20 to +60	°C

Sheet Size (mm)	Thickness (mm)
1220 x 2440	3, 5 & 10
2050 x 3050	3, 5 & 10

Foamalux Calibre

Property	Standard	Value	Units
Density	-	0.5	g/cm ³
Shore Hardness	ISO 868	>40	-
Thermal Expansion	ISO 11359-2	0.068	mm/m°C
Service Temperature	-	-20 to +60	°C
Moisture Absorption	ISO 62	<2	% by weight
Screw Pull	ASTM D1761-20	65	N/mm

Sheet Size (mm)	Thickness (mm)
1220 x 2440	10, 19, 24 & 30
1220 x 3050	10, 19, 24 & 30

Processing

- Digital and screen printing
- Vinyl application
- Spray painting
- Fabrication
- Routing, milling, sawing
- Guillotining, die cutting
- Engraving
- Drilling
- Thermoforming
- Welding
- Cold curving
- Laminating
- Bonding

Foamalux Fabrication Guide

Cutting/Machining

Different methods of cutting are appropriate for different thicknesses of Foamalux, ranging from hand tools to power saws. Sheets 1-2mm thick can be cut with shears. Sheets 1-3mm thick can be cut with a craft knife. Sheet exceeding 3mm in thickness should be sawn. See below for guidelines of pitch, clearance angle and feed speed. Guillotines can be used for rough cutting but are not usually employed to finish-cut as their action compresses the sheet and can give a poor edge finish. Water-jet cutting is suitable. Laser cutting is not recommended for use in conjunction with Foamalux PVC sheets.

Recommendations	Circular Saw	Band Saw
Angle	10-15°	30-40°
Rake angle	0-8°	0-8°
Cutting speed	1000-3000m min	1000-3000m min
Feed speed	6-30m min	6-30m min
Tooth spacing	5-15mm	2-8mm

Milling and Routering

All types of milling machines and routers can be used to machine Foamalux if suitable tool geometry and cutting conditions are used.

Vacuum clamping machines are ideal as they are less likely to mark the surface than mechanical clamping. Where sheets are mechanically clamped, load spreading pads should be used to avoid surface marks.

Die Cutting

Flat shapes with complex outlines can be die cut from thinner sheets - up to 4mm thick - using sharp, accurately set, steel rule dies. Best results are obtainable by preheating sheets to a maximum of 35°C to prevent fracturing the edges. Narrow sections and radii less than 3mm should be avoided.

Stamping

Foamalux can be stamped out but this is usually limited to thinner sheets and deformation of the cut edges may be observed. The material temperature should be approximately 20-30°C to obtain the best edge finish.

Drilling

Standard twist bits for metal are suitable for holes up to 12mm diameter in all thicknesses. Holes over 12mm in diameter can be drilled with flat bits, normally used for drilling wood. Above 25mm diameter it is necessary to use hole saws or circular cutters.

Parameter	Value
Tip angle	100-110°
Helix angle	30°
Drill speed	1000-3000 rpm
Tip speed	0.2-0.5mm/rev

Finishing

Sheet edges can be finished by filing, sanding, grinding, planing or using a deburring tool, for example, a flat steel edge scraper. Such finishing operations on the sheet surfaces will expose the inner cell structure which might be undesirable in some applications. Glossy surface finishes can be obtained using soft buffing wheels and applying polishing compound, but avoid abrading the surface.

Forming - general

Components which are relatively simple and shallow can be formed from Foamalux. An elastic state is reached between the temperature range 115-130°C. As Foamalux is a cellular material it is not suitable for forming operations which involve excessive stretching in the elastic state.

Cold bending

Sheets up to 6mm can be cold bent into basic shapes. The recommended temperature for cold bending is at least 20°C, preferably higher. The minimum bending radius is approximately 100 times the thickness of the sheet, for example 300mm for a 3mm sheet. Foamalux sheets should always be bent across the manufacturing direction to reduce the risk of breakage.

In order to cold bend sheets thicker than 6mm, deep parallel scores can be cut along the length of the sheet.

Hot line bending

Foamalux can be folded on a simple jig fitted with a forming tool having a radius of about two and a half times the sheet thickness. Prior to folding, localized strip heating to about 130°C is required.

Prior to bending thicker sheets (10mm or above) it is important that any excess material at the inside of the bend is removed. This can be achieved by milling out a V groove.

Drape forming

Where a specific thickness of Foamalux is to be curved to a smaller diameter than is possible by cold bending, it is possible to do this by softening a panel to an elastic state, draping over an appropriately shaped pattern and retaining it until cooled and rigid.

Thermoforming

Foamalux sheets do not need to be pre-dried prior to forming. As Foamalux foam PVC has a relatively low density, heating and cooling cycles are faster than with solid thermoplastics.

Thermoforming Foamalux sheets at temperatures higher than 180°C, will overheat and discolour and eventually destroy the sheet. The temperature of the sheets is far more important than the temperature set on the machine.

Bonding

Foamalux can be bonded to itself and a variety of materials such as ABS, GRP, Polycarbonate, uPVC and various woods and metals. Recommendations on adhesives used for bonding are made on the basis of tests, following each manufacturer's recommendations on surface preparation, bonding conditions, application of primers and adhesives.

When welding, the same methods and PVC filler rods used for solid PVC welding can be used, achieving a bond strength ratio of 50-90%.

Printing

Foamalux is suitable for digital printing, screen printing and the application of vinyl graphics. Print on the filmed side of the sheet. Film should be removed slowly, in one direction to avoid additional static charge build up.

Installation

It is essential to consider thermal expansion when installing Foamalux sheets both in indoor and short term outdoor applications. This movement must not be inhibited otherwise distortion, warping or localised buckling will occur.

Panel orientation should be considered when mounting, always matching the direction of extrusion in adjacent panels. This is particularly important for coloured Foamalux where the refractive index viewed along the direction of extrusion may vary to that viewed across the direction of extrusion, resulting in a slight optical colour variation.