

richlite.

# Fabrication Guide

# Introduction

Richlite is a versatile surface material suitable for many different applications. This guide details the most common methods of fabrication and troubleshooting advice.

Thank you for choosing Richlite, and please feel free to contact your local distributor with any further questions.

## Material + Delivery

Upon receipt of your order, report any noticeable damage to the pallet to your local distributor on the same day. Richlite is delivered on a flat pallet with polythene sheeting protecting the top and bottom sheets. These protective sheets help the material stay balanced during shipping and storage. We recommend storing Richlite in the way you receive it on the pallet provided. Richlite does not have surface protectors between sheets, so take care when moving material to avoid marking it.

When handling, remember Richlite is exceptionally dense; 6mm material weighs 7.5kg per square metre and 25mm weighs 31.25kg per square metre. Before you begin fabrication, inspect the material, identifying areas of the sheet that should be avoided to reduce the amount of finishing required.

Most sheets will have some marks from shipping and handling. For the most part, these marks can be removed by wiping them with a damp cloth, or sanding if a surface finish has been selected. Deeper, more noticeable marks and other apparent defects can often be avoided by cutting around them or using the reverse side of the sheet.

## Tooling

Richlite is a commercial grade product that requires high quality trade tools for fabrication. Only quality carbide or diamond cutters are suitable for cutting or machining. Richlite is tough on cutters because of its high density. HSS tooling is not suitable for machining Richlite.

### Recommended:

High grade carbide or diamond blades and cutters

## Joints

Mechanical fasteners are ideal for joining Richlite. Edges do not need to be sealed and are not a weak point like other wood based materials. Straight butt joints with mechanical fixings allow components to be installed easily on site.

Epoxy adhesive provides a mechanical bond. Some epoxies have short cure times, which makes seaming time sensitive. Plastic biscuits should be used to keep sheets level. Sand the surfaces for joining with P60 before applying epoxy for better adhesion and a stronger joint. Dry fit seams before application and avoid over sanding during final preparation. Any excess adhesive should be wiped clean before it cures. A good join will have a thin, but visible hairline.

### Recommended:

Lamello Clamex mechanical fasteners, dogbone bolts, Lamello plastic biscuits, ITW Plexus MA310 epoxy, P60 disc

## CNC Machining

| Thickness | Rotation   | Feed      |
|-----------|------------|-----------|
| <18mm     | 18,000 rpm | 5.0 m/min |
| 18mm+     | 16,000 rpm | 4.4 m/min |

Do not cut more than 9mm of Richlite at a time. For finished edges on thicker material, machine the shape 0.5mm bigger than the final size using multiple passes. Use a final finishing pass for a clean, polished edge.

# Surface Preparation

## Mill Finish

The mill finish retains most of the original surface texture from the production process, making it much more durable.

After inspection, select the best side of the sheet. Wipe the selected side with a damp cloth to remove scuff marks from handling. If available, use a compressor to quickly dry the surface. Once the surface is completely dry, use a very fine Maroon Scotch-Brite disc in a linear motion across the width of the sheet. After a complete pass, repeat the same motion, but across the length of the whole sheet. Finish with a circular motion over the entire sheet to achieve an evenly buffed surface. Remove any dust with a damp cloth and allow to dry before applying a finish.

### **Recommended:**

Very fine Maroon Scotch-Brite, cotton or microfibre cloth.

## Polished

The polished finish results in a smooth, slightly reflective surface. As with any smooth surface, general use will show wear sooner than surfaces with a texture. This finish should only be considered for those who enjoy polished wood or stainless steel and appreciate that it will develop a wear pattern over time.

After inspection, select the best side for fabrication and wipe with a damp cloth. To smooth the original surface texture, use a P150 sanding disc with gentle pressure on the sander. Pressing too firmly will result in sanding marks that cannot be removed by buffing.

Sand evenly in a linear direction across the width of the sheet first, followed by the length of the sheet. Finish with a circular motion over the entire surface. Wipe the surface clean with a damp cloth, making sure it is flat and smooth. If, while damp, you find areas with an orange peel texture, then you may need to repeat this sanding process. This is commonly found around the edges of the sheet where it may have been sanded less.

Use a very fine Maroon Scotch-Brite to buff the surface, in the same method used to sand it. This will even out the surface, resulting in a smooth, polished finish. Wipe with a damp cloth and allow to dry before applying a finish.

### **Recommended:**

P150 sanding discs, very fine Maroon Scotch-Brite, cotton or microfibre cloths

## Unfinished

Installing Richlite unfinished will not affect its integrity, but the material will develop a chalky appearance over time. It will also show marks from handling and wear sooner, as it is naturally a very matte surface.

Unfinished material is mainly recommended for vertical or external applications, and only requires a wipe with a damp cloth to remove scuff marks.

## Finishes

### Richlite Color Enhancer

Color Enhancer is the best finish for ease of maintenance. Shake the tin to mix the contents thoroughly. Color Enhancer is a wipe-on, wipe-off finish, so multiple cotton rags will be required for application and removal of excess finish. You must work quickly to avoid streaking as it dries particularly fast. Hot working conditions or circulating air will speed up the drying time.

Apply liberally onto the surface and edges, not worrying about the evenness of the initial application. Follow immediately with a clean rag to remove any excess, buffing quickly to an even finish. As rags become saturated, use fresh ones to avoid adding streaks. Wait at least 20 minutes before applying the second coat and 24 hours before use.

### OSMO Top Oil

Top Oil is a durable hard wax oil finish that will require some additional care and maintenance over time. Apply thinly with a rag, working the oil across the sheet in a circular motion. Do not apply large amounts to avoid wax build-up. This finish can look sticky and patchy if it is not applied correctly. Apply 2 coats with 8 hours between coats, and wait 24 hours before use.

### Teak Oil

The only finish suitable for external horizontal applications, it should be applied thinly with a rag, working the oil across the sheet. Teak oil is only a surface finish, not a material treatment.

#### **Recommended:**

Cotton or microfibre cloths

## Characteristics

Richlite is a paper product with a direction, or grain, in the sheet. This grain may be highlighted by butt joints at 90 degrees. The edges of the material have a different pattern than the face of the sheet. The surface shows the pattern of the paper, while the edges show the layers, which appear darker and more solid in colour.

Richlite is a natural product which varies from sheet to sheet. Like wood, it will oxidise and mature in colour giving greater depth to the surface. This is more apparent in the lighter colours, while the darkest colours show little to no change. Like any dense wood or stainless steel, Richlite will develop a natural patina over time, showing wear in areas of high use.

Richlite is a pressed product, not cast or extruded, and has a thickness tolerance of +/- 4%.

Richlite is a solid paper composite material made of many individual sheets of paper. Over sanding in a single area will create an onion skin pattern, caused by sanding through multiple layers. Be sure to use even pressure across the entire surface to achieve an even tone.

If you have any questions about how to fabricate Richlite, please contact your local distributor.

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