

Sustainable Materials

DESIGN · MANUFACTURE · REFURBISHMENT · INSTALLATION · MAINTENANCE

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Kirwin & Simpson's Environmental Initiative

We at Kirwin & Simpson believe that businesses are responsible for achieving good environmental practices and operating in a sustainable manner.

We are not complacent about our present environmental performance. We are always looking for improved ways of working to reduce the impact we have on the environment. We are committed to compliance with environmental legislation as a minimum requirement, and we follow other codes of practice.

It is our priority to encourage our customers, suppliers, and all business associates to do the same. Not only is this sound commercial sense for all; it is also a matter of delivering on our duty of care towards future generations.

We are constantly working with suppliers to use and source new innovations. Kirwin & Simpson have begun using a variety of environmentally friendly and sustainable products that could be considered in the design process for inters, end panels and upholstery fabric. These new materials include and are not limited to:

- Recycled plastic boards from Stormboard and Stokbord
- Richlite recycled paper composite
- Eleather recycled leather substitute
- Hemp, Harvested Nettle, and Flax woven fabrics from Camira Fabrics

We review all new contracts from the point of view of sustainability and environmental improvement. As far as possible we purchase products and services that do the least damage to the environment and encourage others to do likewise. Specifically, all our timber is resourced from FSC registered and certified suppliers.

Signed:

Alastair Simpson 4th October 2021



Richlite - Recycled Paper Composite

What is Richlite?

- An incredibly durable material made from recycled cardboard and paper products.
- Developed over 70 years ago for industrial tooling, Richlite has evolved into a premium surface material used by aerospace, extreme sports, marine, food prep and the architecture and design community.
- Made from numerous layers of recycled paper/board which are saturated with a thermosetting resin before they are cut to length and built up.
- Each sheet is carefully stacked, alternating the direction of paper.
- The stacks are pressed under even heat and pressure which bonds the layers of paper together and cures the resin. The panels are then slowly cooled to produce a solid, stable sheet material.
- Richlite is manufactured in a Closed Loop Energy System with Little or No (<1%)
 External Energy Consumption.



Colors

Richlite's color comes from a combination of the paper color and the deep amber tone of the resin. Like wood, the colors develop a natural patina as they age. Today, Richlite offers multiple color collections to suit residential, commercial and industrial projects.



Available in colors whose names reflect natural landmarks near the company headquarters in the Pacific Northwest.



CASCADE COLLECTION

Inspired by the Cascade Range, this collection is a 'layered line' including bamboo-embedded Stratum.



R HERITAGE COLLECTION

Richlite's original color, Natural, and the milestone products of Slate and r50 represent the company's rich history.

NORTHWEST COLLECTION





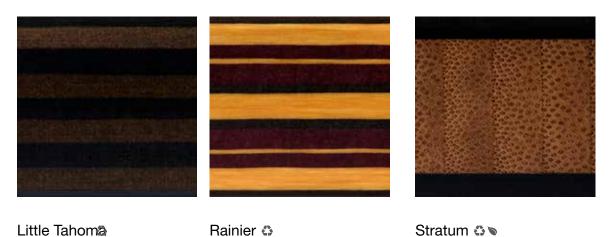
Redstone 😘

Grays Harbor 3



Browns Point







Chocolate Glacier



Contains 100% Recycled Paper

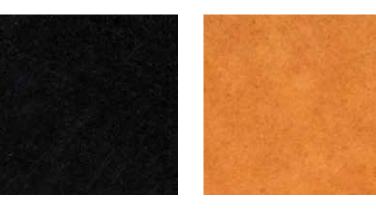
Mso Available in Rapidly Renewable Paper

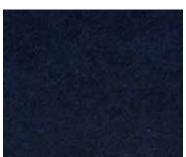


Black Diamond >



CASCADE COLLECTION





Maple Valley (r100)



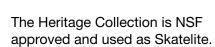
Richlite can be pressed from

Panel sizes range from

1/4" (6mm) to 3" (75mm) thick.

48" x 96" (2440mm x 1220mm) to 60" x 144" (3660mm x 1525mm).

r50 Contains 50% Recycled Paper



All Richlite products are:

Natural



Slate



Blue Canyon

Technical Data Sheet

Richlite Solid Paper Composite

Properties	Standard	Unit	Typical Results 6mm
Flexural Strength	EN ISO 178	MPa	150.5
Flexural Modulus	EN ISO 178	MPa	11079
Tensile Strength	EN ISO 527	MPa	115.0
Tensile Modulus	EN ISO 527	MPa	10150
Thermal Expansion	EN 438-2 modified clause 17	mm/mm°C	0.0013
Dimensional Stability	EN 438-2 clause 17	%	0.11%
Formaldehyde	EN 120	mg/100g	0.000107
Impact Resistance 2100mm drop height	EN 438-2 clause 21	Diameter	4.75
Water Resistance Appearance	EN 438-2 clause 15	Rating	5
Density	EN 323	g/cm3	1.25

Properties	Standard	Unit	Typical Results 12mm
Flexural Strength	EN ISO 178	MPa	163.5
Flexural Modulus	EN ISO 178	MPa	11693
Tensile Strength	EN ISO 527	MPa	138.5
Tensile Modulus	EN ISO 527	MPa	10903
Thermal Expansion	EN 438-2 modified clause 17	mm/mm°C	0.0018
Dimensional Stability	EN 438-2 clause 17	%	0.12%
Formaldehyde	EN 120	mg/100g	0.000107
Impact Resistance 2100mm drop height	EN 438-2 clause 21	Diameter	6.08
Water Resistance Moisture Absorbed	EN 438-2 clause 15	%	4.11%
Water Resistance Appearance	EN 438-2 clause 15	Rating	5
Density	EN 323	g/cm3	1.26



CARE & MAINTENANCE

EXTERIOR

GENERAL PRECAUTIONS

- For Exterior Applications: flashing and proximity to metal or water may require additional attention or maintenance
- Graffiti/Spray Paint: paint and graffiti removal products can be used. Pressure washing can be used for
 extreme situations, but may alter the factory surface slightly. A more matte finish will be left by this
 process. Over time, the variation will blend with the natural oxidation process.
- Applied finishes or sealers are not recommended as they will tend to flake and deteriorate from UV exposure.
- Normal wear and tear due to elements will change the surface over time and oxidize in a similar way to cedar siding.

INTERIOR

GENERAL PRECAUTIONS

- Richlite® is stain resistant to most common substances on interior applications.
- In residential applications, some raw meat juice (such as liver), high-alkaline fruit or vegetables (such as papaya and red beets), red wine and high-alkaline soaps (such as automatic dishwasher powder and oven cleaners) may cause staining when left in contact for a prolonged time.
- The lighter colors of Richlite® will show stains more than the darker colors. Additionally, grout (high alkaline) will lighten darker-colored Richlite® counters and darken the lighter tones.
- Avoid using bleach products or abrasive powdered cleaners. It is good to avoid using the abrasive side of sponges as this may also scratch the surface of a Richlite® countertop.
- Generally speaking, Richlite® resists stains quite well. With stubborn stains, try a non-abrasive household cleaner. A unique stain remover is plain yogurt, applied only on the stain area. Let sit over night for 3-4 applications, wiping away in the mornings, to lighten stains.

MILL SURFACE

- Often requires very little maintenance due to textured surface.
- Wet rag (soap & water) for other applications.
- Cleaning agents may affect the surface which is not protected by an applied finish.
- Repairs very difficult to repair as the textured surface will show any changes and cannot be reproduced.

LEATHERED SURFACE

- Warm water and sponge for daily cleaning. Mild soap can be used if needed.
- Richlite® Care + Maintain can be used to renew the look and feel of the finish.
- Repairs Richlite® Hard Wax Oil is a very good spot repair product that can be applied by the end user. Wipe on a small amount and buff into adjacent areas. Allow to dry for 24-48 hours before full use. It is compatible with Richlite® Care + Maintain and blends very well to a similar finish.
- Do not sand the surface as it will disturb the factory surface which cannot be reproduced.
 Minimal Scotch-Brite® work can be done prior to applied finishes.



CARE & MAINTENANCE

SANDED SURFACE

- Warm water and sponge for daily cleaning. Mild soap can be used if needed.
- Richlite® Care + Maintain can be used to renew the look and feel of the finish.
- Repairs Richlite® Hard Wax Oil is a very good spot repair product that can be applied by the end user. Wipe on a small amount and buff into adjacent areas. Allow to dry for 24-48 hours before full use. It is compatible with Richlite® Care + Maintain and blends very well to a similar finish.
- Refinishing should be advised by the dealer or fabricator who installed the surface. In most cases, it is preferable if the trained installer refinishes the surface.
- Light scratch marks and burn marks can be refinished using a Scotch-Brite® pad (#7447/Red Color) with a random orbital sander.
- It is important to note, spot refinishing will be noticeably lighter compared to the surrounding surface area. Richlite® surfaces are made of layers of paper, which, like wood, will patina or darken over time in most colors (not as much with black material). The area will eventually patina and match the remainder of the counter surrounding it. In order to avoid discoloration in affected areas, sanding and refinishing the entire surface is required.



Stokbord – Recycled Plastic Board

What is Stokbord?

- A tough and durable material made from 100% recycled plastics and pressed into board sheets.
- Reduces who-life costs comparatively.
- Long-lasting and rot-proof which reduces restorative costs and works needed to upkeep over time.
- Stokbord is high-resistance and easy to fabricate. It comes in custom sizes and colours and FR variations available.





Stokbord Ornate End Panel

	Advantages of Stokbord vs Plywood		
Product Features	Stokbord	Plywood	
Material strength	Durable and long-lasting for multiple uses	Typically single-use for individual projects	
Impact resistance	Resistant to impact from tools, rubble and spoil	Easily damaged during general usage	
Professional image	Hard-wearing material supports on-site maintenance and presentation	Easily damaged through general use, creates unsightly appearance	
Branding	Custom branding available, routed directly into material	Branding not typically available	
Chemically inert	Does not absorb liquids or chemicals	Absorbs liquids leading to fast wearing	
Cleaning and maintenance	Easy to clean with water, able to withstand pressure washing	Porous texture can absorb liquids and dirt, compro- mising material strength	
Handling	Can be supplied with hand holes and rounded corners for easy handling, splinter-proof in-use	Does not feature hand holes and high risk of splinters	
Recycling and disposal	Fully recyclable after use	Costly disposal in landfill	
Cost benefits	Lower long term costs due to long product lifespan	Lower initial cost but requires replacement after single usage	
Flexibility	Flexes when bent, does not shatter	Snaps and cracks when bent, will not return to original shape	



Description

Stokbord® Sheet is a high quality extruded plastic sheet is manufactured from recycled Low Density Polyethylene (LDPE) plastic. The recycled LDPE plastic is reprocessed to form a homogenous section of solid LDPE which is extruded through a die, calendar rolled, cooled and cut in a single process.

Stokbord® Sheet may be used to construct highly durable and weather resistant products which will exhibit the following benefits:

- Long life expectancy
- Maintenance free
- Highly resistant to impact and wear
- Non-toxic

- Non-leaching
- Non-sparking
- Unsupportive of organic growth
- Non-absorbent
- Will not rot
- Slip resistant
- Easily cut, machined drilled and fixed

Applications

Stokbord® Sheet us used widely across many industry sectors, such as:

- Agriculture
- Materials handling/ packaging
- Equestrian
- Industrial
- Landscaping
- Fabrication
- Building & Construction

Stokbord Sheet Options

Stokbord is available from stock in the following options:

					THICKNESS	5	
COLOUR	SIZE		3mm	6mm	9mm	12mm	18mm
Grey	2440mm x 1220mm	Approx 8ft x 4ft		/	/	/	
Black	2440mm x 1220mm	Approx 8ft x 4ft	/	/	/	/	/
Grey	3000mm x 1500mm	Approx 10ft x 5ft		/	>		
Black	3000mm x 1500mm	Approx 10ft x 5ft		/	/	/	

Other sizes and colours are available subject to minimum order quantities



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Product Performance

Test results have been obtained using a typical production sample tested at an independent test laboratory. Please note that recycled plastics are, by their nature, variable. The values following should be regarded as indicative of the material. Further guidance is available from Centriforce. Please also see the User Guide.

Stokbord® Sheet

Property	Value	Units	Test method
Compressive Strength	110	MPa	BS EN ISO 604:2003
Compressive Modulus	243	MPa	BS EN ISO 604:2003
Tensile Strength at Yield	10.8	MPa	BS EN ISO 527:1996
Tensile Strength at Break	10.4	MPa	BS EN ISO 527:1996
Tensile Elongation at Yield	176	%	BS EN ISO 527:1996
Tensile Elongation at Break	186	%	BS EN ISO 527:1996
Tensile Modulus	316	MPa	BS EN ISO 527:1996
Flexural Strength	10.8	MPa	BS EN ISO 178:2010
Flexural Modulus	299	MPa	BS EN ISO 178:2010
Thermal Expansion	1.8	Mm/m/10°C	
Impact Resistance	28.6	kJ/m ²	BS EN ISO 179-1
Water Absorption	0.44	Wt %	BS EN ISO 62-1999
Density	0.96	g/cm ²	BS EN ISO 1183-1:2004
Slip resistance (wet conditions)	32	Acceptable	BS 7976-2:2002

Surface Finish

Stokbord Sheet has an embossed surface which provides a good level of Scratch and slip resistance.



Variability

The performance of products manufactured from recycled material is susceptible to variability from the feedstock, therefore the published technical data is offered for guidance purposes only. The data has been obtained from extracting random test samples from the production process and subjecting those samples



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to industry standard test regimes performed by a reputable, independent test house. Variability within the feedstock may also impact upon finish and colour uniformity.

In order to minimise the impact of variability Centriforce operates in accordance with the standards set by our ISO accreditation. In addition, Centriforce has adopted a policy of continuous improvement throughout the entire business.

Manufacturing tolerances

The manufacturing process used to make Stokbord® Sheet may be influenced by external factors and, as such, the following manufacturing tolerances are allowable:

Size	Thickness	Maximum allowable	As specified +5%
		Minimum allowable	As specified -5%
	Width	Maximum allowable	As specified +6mm
		Minimum allowable	As specified -0mm
	Length	Maximum allowable	As specified +10mm
		Minimum allowable	As specified -0mm
	Thread	Maximum allowable	2.0mm
	pattern	Minimum allowable	1.1mm
Straightness	Square	Maximum allowable	10mm per sheet
	Deflection	Maximum allowable	10mm per sheet
		For Machine Direction line which res	ults in bowing or warping

Thermal movement



All plastics are susceptible to thermal expansion and contraction with temperature changes. Allowances for thermal movement should be incorporated into the design and construction of structures using Stokbord® Sheet, to prevent warping and buckling. Allowances within the structure for thermal movement are recommended as shown in the table below:

The following table assumes the following:

- Service temperature range of -10°C to +35°C
- Thermal expansion and contraction up to 2.0mm/ 1m / 10°CProduct is conditioned to ambient temperature prior to installation



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Ambient Temp °C	Potential for Expansion per 1 m	Potential for contraction per 1 m
-10	+9mm	0mm
-5	+8mm	-1mm
0	+7mm	-2mm
+5	+6mm	-3mm
+10	+5mm	-4mm
+15	+4mm	-5mm
+20	+3mm	-6mm
+25	+2mm	-7mm
+30	+1mm	-8mm
+35	0mm	-9mm

Note that detailed information regarding the fabrication of Stokbord Sheet can be found in the User Guide.

Fire conductivity

Stokbord® Sheet is difficult to ignite, however, should the installation be involved in a developed fire, the spread of flame is commensurate with BS 476 Part 7 spread of flame Class 3. Stokbord® Sheet may be extinguished by employing an A, B or C classified fire extinguisher.

Chemical resistance

Stokbord® Sheet has excellent chemical resistance to a wide range of everyday chemicals and cleaning agents at ambient temperature

Materials	Resistance to	chemical attack	Comments
iviateriais	20°C	60°C	
Water	Good	Good	
Sea Water	Good	Good	
Common Detergents	Good	Good	
(liquid)			
Sodium Chloride	Good	Good	
(common salt)			
Diesel oil	Good	Limited	Tests refer to 'full immersion'
Petroleum (Gasoline)	Limited	Not satisfactory	Tests refer to 'full immersion'
Alcohol (40% ethanol)	Good	Limited	Tests refer to 'full immersion'
Alkalis and acids	Good	-	Contact Centriforce for information



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SAFETY DATA SHEET

Product name and company identification

Product name: Stokbord® Sheet
Product type: Recycled plastic sheet

Company Identification: Centriforce Products Limited

14 – 16 Derby Road, Liverpool, L20 8EE Telephone: +44 (0) 151 207 8100 Email: sales@centriforce.co.uk

Composition/information on ingredients

Description: Polymer with encapsulated pigments and stabilising additives

Polymer: Low density polyethylene

Pigments: Nominally 2% polyethylene in granular form, encapsulating high concentrations of pigments

and UV stabilisers

Additives: Nominally 0.5% Calcium Oxide (Quicklime)

Hazard Identification

Low hazard in normal temperatures. Material will start to create fumes at temperatures in excess of 270°C

First aid measures

Inhalation: In case of adverse exposure to fumes formed at temperatures in excess of 270°C, remove

casualty to fresh air and monitor for signs of adverse health effects.

Skin contact: Skin contact will not give rise to first aid other than cuts and abrasions due to poor manual

handling techniques.

Eye contact: In finished form, the product should not give rise for concern. Sheet will produce swarf and

chippings when being cut, in case of swarf or chips entering the eye, remove as foreign

object.

Ingestion: First aid not usually required

Fire fighting measures

Mode of extinguishing: Attack fire using CO₂ or dry powder. Fire may re-start if burning material is not sufficiently

cooled. Fumes may occur with decomposition.

Fire may start if burning material is not sufficiently cooled

Fumes may occur with decomposition

Accidental release measures

Not applicable



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SAFETY DATA SHEET

Handling and storage

Handle materials using recognised manual handling techniques

Store materials away from sources of ignition and away from walkways as loose sheets may form a hazard

Exposure controls and personal protection

No exposure control required under normal conditions.

Hand protection required when manually handling materials.

Other personal protection associated with application (e.g. eye protection when cutting).

Physical and chemical properties

Physical state: Solid

Form/colour: Black or grey (Custom colours are possible)

Odour: None

Melting point: In excess of 120°C
Relative density: 0.65 – 0.95 nominally

Solubility in water: Insoluble

Stability and reactivity

This product is stable in its finished state at normal temperatures

Toxicological information

Inhalation: No hazard at ambient temperatures. Fumes will develop at temperatures in excess of 270°C

which could affect the eyes and respiratory tract.

Skin contact: No hazard at ambient temperatures. Could cause thermal burns at temperatures in excess of

150°C

Eye contact: No hazard in its finished form. Swarf particulate created when cutting or drilling

Ecological information

Material can be 100% recycled

Disposal

Recylced as polyethylene waste material

Transport information

Not classified as dangerous material

Regulatory information

None known



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Advances in Fabrics

ELeather – Recycled Leather Substitute

- Engineered Leather of up to 55% recycled content
- Over 55% reduction in use of natural resources
- Over 60% lower CO2 emissions
- Certified to Recycled Claim Standard
- Higg Index of Sustainability
- Supply sources of Leather Working Group audited



Camira Fabrics – Naturally Sustainable Options

Light Fastness

Cleaning

Guarantee

Fastness to Rubbing

Main Line Flax

A blend of Virgin Wool and Flax.

Application	Task Seating / Soft Seating / Curtains
Composition	75% Virgin Wool, 25% Flax
Environmental	Certified to the EU Ecolabel Certified to Indoor Advantage™ "Gold"
	Rapidly renewable and compostable Made from wool and bast fibre
Width	140 cm minimum
Welght	437 g/m2 ±5%
Abrasion Resistance	Heavy duty / 10 year guarantee. Independently certified to ≥50,000 Martindale cycles
Flammability	EN 1021 - 1&2 (cigarette & match) BS 7176 Low Hazard BS 5852 ignition Source 5 BS 7176 Medium Hazard NF D 60-013
	ÖNORM B 3825 & A 3800-1 (58kg/m3 CMHR Foam) UNI 9175 Classe 1 IM
	BS 5867-2: Type B Curtains & Drapes IMO FTP Code (Part 8)
	The Furniture and Furnishing (Fire) (Safety) Regulations 1988 (Domestic Cigarette and Match)



5 (ISO 105 - B02)

10 Years

Wet: 3, Dry: 4 (ISO 105 - X12)

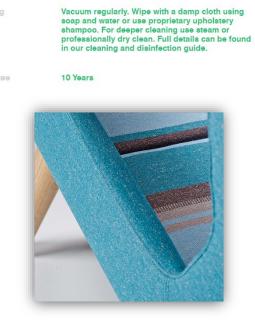
Vacuum regularly. Wipe with a damp cloth using soap and water or use proprietary upholstery shampoo. For deeper cleaning use steam or professionally dry clean. Full details can be found in our cleaning and disinfection



Nettle Aztec

A blend of Virgin Wool and Harvested Nettle.

Application	Task Seating / Soft Seating	Light Fastness
Composition	83% Virgin Wool, 17% Nettle Fibre	Fastness to Rubbing
Environmental	Certified to Indoor Advantage™ "Gold" Rapidly renewable and compostable Made from wool and bast fibre	Cleaning
Width	140 cm minimum	
Weight	495 g/m2 ±5%	Guarantee
Abrasion Resistance	10 year guarantee. Independently certified to ≥40,000 Martindale cycles	
Flammability	EN 1021 - 1&2 (cigarette & match) BS 7176 Low Hazard BS 5852 Ignition Source 5 BS 7176 Medium Hazard UNI 9175 Classe 1 IM The Furniture and Furnishing (Fire) (Safety) Regulations 1988 (Domestic Cigarette and Match)	



5 (ISO 105 - B02)

Wet: 4, Dry: 4 (ISO 105 - X12)

Hemp

A blend of Virgin Wool and True Hemp.

Application	Task Seating / Soft Seating / Curtains
Composition	60% Virgin Wool, 40% True Hemp
Environmental	Certified to the EU Ecolabel Certified to Indoor Advantage™ "Gold" Rapidly renewable and compostable Made from wool and bast fibre Nicht schwermetallhaltige Farbstoffe
Width	140 cm minimum
Weight	460 g/m2 ±5%
Abrasion Resistance	Heavy duty / 10 year guarantee. Independently certified to ≥50,000 Martindale cycles
Flammability	EN 1021 - 1&2 (cigarette & match) BS 7176 Low Hazard BS 5852 Ignition Source 5 BS 7176 Medium Hazard UNI 9175 Classe 1 IM BS 5867-2: Type B Curtains & Drapes The Furniture and Furnishing (Fire) (Safety) Regulations 1988 (Domestic Cigarette and Match)



5 (ISO 105 - B02)

Wet: 3, Dry: 4 (ISO 105 - X12)

Vacuum regularly. Wipe with a damp cloth using soap and water or use proprietary upholstery shampoo. For deeper cleaning use steam or professionally dry clean. Full details can be found in our cleaning and disinfection guide.

Light Fastness

Fastness to Rubbing

Cleaning