

Function	Material	Sustainability			Cost			Durability			Comment
		Yes	OK	No	High	Med	Low	High	Med	Low	
Structural Framework	Aluminium			X		X		X			Extremely high energy use in production. Significant creator of GHG (Green House Gas) especially in China where 3/4 of the aluminium plants are coal fired and there is much greater release of CF ₄ and C ₂ F ₆ which is toxic and 6500% & 9500% respectively more GHG potent than CO ₂
	Bamboo	X					X		X		Highly sustainable. Regrows when cropped. Requires no treatment: natural silica content makes it resistant to insects. Most dimensions available NZ grown. Lightweight and strong but prone to splitting. Needs binding to mitigate splitting.
Panel	Ecoply (Carter Holt Harvey)	X				X		X			NZ pine sustainably grown. No shipping miles. FSC (Forestry Sustainability Council) certified. E0 rated. (This means it has the lowest formaldehyde emission. Formaldehyde is carcinogenic.) Only available in CD (one side without knots) or DD grade. Requires sanding for smooth paint finish. Not suitable for clear finish furniture. CD is 2x cost of MDF.
	Untreated European Birch Ply (Nicholls & Maher)		X				X	X			Pine core with birch veneer. FSC certified. E1 rated. (low formaldehyde). NZ pine + European birch made up in China. High shipping miles. Blond smooth finish both sides. Suitable for clear finish furniture, or painting without sanding. Comparable cost to MDF.
	MDF			X			X		X		Highest formaldehyde content and emission of all wood panels. Not as structurally strong as ply.
	Untreated 100% Russian birch ply.	X			X			X			Prohibitively expensive. 4x cost of MDF.
	ACM composite			X				X			Unrecyclable. Made from PET plastic sandwiched between aluminium. Non-biodegradable.
Translucent panel	Glass		X					X			Lasts well if handled with care. High energy use in production. Can be repeatedly recycled. No emissions. Expensive to cut to irregular shapes. Can be UV glued commercially. Made from sand (silica).
	Acrylic (Perspex)			X						X	Prone to scratching in display environment. Can be cut to irregular shapes, bent with heat, and glued. Production is polluting and high energy. Non-renewable petrochemical. Recyclable. Non-biodegradable.
	Polycarbonate			X				X			The only clear panel that can be bent into place. More resilient than acrylic. Non-renewable petrochemical. Non-biodegradable. Not easily recycled. Can release BPA (hormone mimicking chemical) into the environment.
Banner Fabric	PVC		?	X			X	X			Sustainability dependant on production. Emits phthalates. Phthalates used as softeners are harmful to health. Highly volatile low molecular weight phthalates and the use of lead in the production process are being phased out in Canada, USA and EU. High energy use in production but reduced in recycling. 43% from non-renewable petrochemical. Recyclable 7 times. Non-biodegradable.

	Used Dacron Sails	X					X	X			Limited availability especially for larger pieces. Crinkled appearance. Self adhesive lettering will stick to it. Obtain from sailmakers. A form of PET.
	Canvas			X		X		X			Made from cotton. High water and pesticide use in production. Pollutant chemicals in dyeing process. Made from renewable fiber. Will not stick to adhesive lettering.
	Polyester (PET)		X				X	X			A form of PET plastic. Low toxicity in production. Recyclable. Non - biodegradable. Non-renewable petrochemical. Will not stick to adhesive lettering.
Velcro Receptive Fabric	Vertiface (Autex Industries)		X			X		X			100% polyester. Return to factory for recycling. Non-renewable petrochemical.
Other fabric	Hemp	X			X			X			Prohibitively expensive due to the illegality of growing it. Renewable strong fiber.
Finishes	Acrylic paint			X			X	X			Polluting and energy intensive production process. Ongoing toxic and carcinogenic chemical and GHG emissions. Non-renewable petrochemical.
	Low VOC acrylic paint			X			X	X			Polluting and energy intensive production process. Significantly reduced emission of harmful chemicals. Non-renewable petrochemical.
	Recycled Paint		X				X				Recycling of unused "waste" paint. Less toxic and energy intensive than manufacturing new paint. Not necessarily low VOC. (Volatile Organic Chemical) Limited colours available.
	Natural Paint	X			X					X	Manufactured from plant and animal products (renewable). Interior white "Biopaint" approx 3x more expensive than acrylic. Long drying time. Prone to marking.
	Oil-based Polyurethane			X			X	X			VOC emissions. Isocyanates (carcinogenic) and GHG's released in production and drying. Non-renewable petrochemical. Forms a hard non-porous surface, which eventually fails so that the entire surface has to be sanded back and reapplied.
	Water-based polyurethane			X		X		X			Generally lower levels of VOCs than oil-based polyurethane. Isocyanates (carcinogenic) and GHG's released in production and drying. Non-renewable petrochemical. Forms a hard non-porous surface, which eventually fails so that the entire surface has to be sanded back and reapplied.
	Tung Oil	X			X			X			Natural product. Beware of purchasing "tung oil finishes or blends" that contain solvents and may contain no real tung oil. Allows timber to breathe thus mitigating relative humidity fluctuation in interior environment. Can be reapplied where needed without redoing whole surface.