

GCC

Material Waste Streams Table

Produced by GCC
Waste and Recycling Research Group
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Material Waste Streams Research

Waste is one of the most visible aspects of the growing ecological crisis.

We must minimise waste, rather than rely on recycling. The GCC Waste and Recycling Research Group has worked in tandem with the Packaging and Materials Research Group to provide actionable recommendations based on the principles of the 5 Rs of the waste hierarchy – **refuse, reuse, reduce, repurpose and recycle**. To find out more about waste management, visit galleryclimatecoalition.org/waste-and-recycling

When managing waste, it is important to be aware of the different types of materials and their recyclability. GCC recommends making a list of all the art handling materials that are in current use and their waste streams. The GCC Waste and Recycling Research Group have begun this research by producing the below list of materials in common use for art handling and packing.

GCC also recommends conducting a waste audit. This involves reviewing the waste created in your organisation, recording and analysing the findings. By doing this, you can understand the waste you produce, identify areas for improvement, set goals for reduction and track results. For a How to Guide, see [Ki Culture's Waste and Materials Ki Book](#) (p. 55).

Please note, the below advice is a work in progress and will be continuously updated. It aims to be largely international, but some of the specific recommendations of local recycling facilities are UK or London-focused. GCC's International Volunteer Groups are working on adding further region-specific findings and guidance to this resource. If you would like to contribute further research or tips on waste management: info@galleryclimatecoalition.org.

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Packing Material	Uses	Characteristics	Waste Streams
Acid-free tissue paper	Interleaving between unframed works on paper/ cushioning material when made into balls.	Meets conservation standards for packing certain objects. If rolled in balls will crush over time and lose cushioning properties. Acid-free kraft paper can become acidic over time and should not be used for the long-term storage of acid sensitive materials.	Recycle in paper/card waste stream.
Polythene	Wrapping framed artworks, often as an under-layer to card wrapping. Wrapping for transit frames.	Provides a moisture barrier and microclimate if sealed with tape. Offers protection against abrasion for stored objects. Attracts dirt and dust due to static and creases once used, hence can be difficult to re-use.	London - Recyclable at Martinspeed
Dartek (unsustainable)	Wrapping artworks with delicate surfaces e.g. unframed paintings, sculptures where other materials might be abrasive.	Good release (non-stick) properties. Is slightly moisture permeable, so not a full moisture barrier, but is water resistant. Softer than polythene but not as strong.	Needs further research.
Glassine (sustainable)		Glassine can become acidic over time and should not be used for the long-term storage of acidsensitive materials. Cellulose paper manufactured by 100% fresh Cellulose.	Recycle in paper recycling stream.

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<p>Tyvek</p>	<p>Widely used for wrapping framed 2D and 3D artworks as a first layer, sometimes only packing.</p>	<p>Soft, strong and versatile. Can leave a pattern on some materials e.g. polished bronze. Available in conservation standard.</p>	<p>UK recycling program – post to: Tyvek Recycling Spenic Converters LLP. Unit 11, Caker Stream Road, Mill Lane Industrial Estate, Alton, Hampshire, GU34 2QA More information: https://www.dupont.com/</p>
<p>Tyvek pillows</p>	<p>Polystyrene balls or chips inside a Tyvek bag, sewn closed. Similar use to tissue paper balls, ideal for packing and supporting irregularly shaped 3D objects inside crates and boxes.</p>	<p>Versatile and good insulation. Shock absorption properties but less than packing foams.</p>	<p>As above, separate polystyrene balls.</p>
<p>Corrugated card</p>	<p>Short and mid-term packing for storage and local shipping.</p>	<p>Good shock absorption and a low -cost adaptable temporary packing. Not acid free so should not be used long term.</p>	<p>Recycle in card/paper waste stream.</p>
<p>Foam core board</p>	<p>Mid-term packing for storage and local shipping, or longer-term use if used in a sculpture crate as internal box or support. Useful to make a rigid temporary folder for transporting unframed works on paper etc.</p>	<p>More rigid than corrugated card and offers better shock and moisture protection.</p>	<p>Purchase thermoplastic foam core made with wood fibre. Always use as little foam board as possible and try to reuse it. Biodegradable option: https://artdiscount.co.uk/products/whitebiodegradable-5mm-foamboard</p>

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Correx (thermo-plastic called polypropylene)	A corrugated plastic material with similar uses to foam core. Often used as panels in T frames.	Similar properties to foam core, but better water/ moisture protection. Tends to attract dust due to static build up. Cut edges are sharp.	Needs further research.
Polystyrene packing chips	Rarely used now, but recommended occasionally e.g. for very fragile crated sculptures.	Awkward and messy to use. Can attract and incorporate debris and other materials if not carefully managed. Artwork is not easily visible when submerged in chips.	Needs further research.
Ethafoam (closed-cell polyethylene foam)	Foam lining for insulating and cushioning 2D and 3D artworks in crates.	Closed cell structure, inert and retains shape well. Good shock and insulation protection. Available in different densities. Can be carved to conform to shape of 3D objects offering maximum support.	UK – Recycled option: https://sealedair.co.uk/en-gb/product-care/product-care-products/recycled-contentfoam-1
Plastazote LD45	Same uses as above, considered more archival friendly.	As above, acid free.	Not recyclable due to the high energy requirements for re-melting.

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<p>Jiffy foam rolls</p>	<p>Thin foam supplied in rolls. Useful for providing an improved cushioning layer for 3D objects offering protection in transit.</p>	<p>Similar properties to Ethafoam. It can tear easily, especially when taped and it is difficult to re-use.</p>	<p>Not recyclable.</p>
<p>Bubble wrap</p>	<p>Creating an improvised cushioning layer for packing objects. Available in single or double sided versions (where the bubbles are sandwiched on the inside).</p>	<p>Once used for temporary art packing, has fallen out of use as the singled sided material leaves marks on surfaces. The bubbles tend to burst under impact, so the material loses cushioning properties.</p>	<p>Not recyclable.</p>
<p>Furnisoft (Polyethylene laminated bubble wrap)</p>	<p>Related to bubble wrap, but the bubbles are sandwiched between layers of jiffy foam. Useful for wrapping items such as furniture and plinths.</p>	<p>A strong material with a soft surface and good cushioning properties.</p>	<p>Reusable because of durability.</p>
<p>Tulip foam (polyethylene foam)</p>	<p>U shaped lengths available in different sizes as well as corner pieces. Useful for creating an improvised edge protection for furniture and framed artworks.</p>	<p>A dense foam, providing good cushioning. Should not be used on unglazed paintings as it can 'pinch' and put pressure on the surface.</p>	<p>Needs further research.</p>

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<p>Timber</p>	<p>Widely used for transit frames and in the construction of crates (combined with plywood).</p>	<p>Strong and relatively light. Good insulating properties as well as offering some shock absorption. Is not acid free, so is sometimes lined for archival storage. Must be ISPM stamped for shipping.</p>	<p>Yes, but the variety of materials used in crate construction makes the process difficult.</p>
<p>Plywood (and composite wood-pulp materials).</p>	<p>Widely used for constructing transit frames and crates, often used as panelling, in combination with timber battening.</p>	<p>As above, although composite wood pulp materials are less strong than timber or plywood. Tends to split and fragment more easily than timber, so less good for re-screwing. Does not require ISPM stamp.</p>	
<p>Plastic backed self-adhesive tape</p>	<p>Widely used for securing and sealing polythene wrapping, card, Tyvek and other packing materials.</p>	<p>Strong, with good adhesive properties. Good moisture barrier when combined with polythene. Tape and glue get brittle with age. Difficult to remove from polythene, making the poly hard to reuse.</p>	
<p>Paper backed masking tape</p>	<p>Widely used for securing and sealing packing materials, usually the 'inner' packing layer e.g. Dartek, tissue and Tyvek.</p>	<p>Strong, with good adhesive properties. Tape and glue get brittle with age. Difficult to remove from packing materials, making them hard to re-use.</p>	