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UNIVERSITY OF CANTERBURY

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SAFETY OF CERAMICS

Editor: Lynn Campbell

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The Safe Handling and Storage of Ceramics

Rose Evans

Objects Conservator

Museum of New Zealand

HANDLING

common sense rules:

Problem - ceramics are hard/brittle and break on impact, therefore storage / display should be designed to minimise unnecessary handling.

Prior to picking up

1. **Examine condition.**
Are there any repairs as these may have weakened over the years.
2. **Do not use handles or spouts.**
3. **Remove loose lids prior to movement.**
4. **Avoid applied decorations or labels (especially gilding).**
5. **Use TWO hands.**
6. **Have clean, dry hands with no jewellery.**
7. **Do not wear gloves as you need a good grip. Gloves make hands slippery.**

RH / TEMPERATURE LIGHT

Avoid temperature / humidity extremes (rapid changes). Therefore keep out of sunny spaces or spot lighted displays.

Some glass and glazes are affected by ultra-violet so do not display in direct sunlight - always use ultra-violet filters on the windows.

STORAGE

Store in cupboards or shelves with no vibration / jarring.

Line shelves with soft, non - fibrous padding such as PE foam, sheeting.

If a ceramic is unstable on its base, it should be supported i.e. use a polyethene or cotton covered polystyrene bead doughnut.

Storage should provide protection from dust. Use clear plastic drop sheets where no closed storage is possible.

CLEANING

Keep handling to a minimum - this also means routine dusting and cleaning. Organise storage systems and display so that dust and dirt does not settle.

Ceramics should only be cleaned when deemed absolutely necessary, i.e. prior to exhibition. Conservation advice should always be sought when able.

Remove surface dirt using a soft bristle brush. Do not use clothe as this may snag fragile surfaces. Make sure glazes or decoration are stable (not flaking before using the brush. If the ceramic, glaze, decoration and joins / previous mends are stable in water then a light cleaning may be undertaken. Never immerse ceramics in water. Only distilled or deionised water should be used. Never use hot water, detergents or bleach. Always apply using a swab.
CONSULT A CONSERVATOR.

**Guidelines to Packing Materials for
Ceramics**
Compiled by Rose Evans,
Objects Conservator
Museum of New Zealand

This information was given at a seminar that took place in Christchurch in November 1993 Organised by the Canterbury Disaster Team.

The next workshop will take place in November 1994 and will be a Disaster Workshop on Flooding. There will be a recovery exercise with lectures and practical applications.

Should anyone require further information please contact:-
Lynda Wallace, Liaison Officer, Canterbury Museum, Rolleston Ave, Christchurch.
Tel (03) 3668379.

ARCHIVART	
Other Names	Multi-use board, plyboard
Chemical Composition	Both outer liners and corrugated medium are made from material above pH 7.0 - is buffered - strong and durable - resists shocks and bumps - comes in a variety - single or double
Suppliers	Ransons
Manufacturers	Archivart Products for Conservation and Restoration, Process Materials Corp.
Usage	In making containers for storage and support of objects. Backing board, shelf lining, boxes, trays.
Working Information	Developed to provide strong, rigid panels, acid free quality, good strength characteristics.

BUBBLE PACK	
Other Names	Polybubble
Chemical Composition	A barrier coated polythene with air bubbles on one side.
Suppliers	Packaging House Ltd
Manufacturers	CONFORM NZ Ltd
Usage	For short term cushioning interleaving and protective wrapping of objects: - excellent edge protection (buffering) - prevents movement * should not be used in permanent contact with object as polythene deteriorates after a process of time.
Working Information	(See above) Available in 3 standard sizes: Rolls: 440 mm x 60 m(0) 870 mm x 60 m(0) 1300 mm x 60 m(0) As well as in paper bubble rolls, polythene sheets and bags. - Bubbles should always be on outside of packing as indentations caused by inverted bubbles on object surface have been noted.

CALICO	
Other Names	
Chemical Composition	100% cotton, fine/even weave, white or unbleached. Wash to remove sizing.
Suppliers	Ackmead Holdings (Wholesale) Haberdashery
Manufacturers	Ackmead Holdings (See Dacron Wadding Notes) Price: Calico unbleached white, per metre 122 cm (w) \$1.65 per metre 137 cm (W) \$2.25 per metre
Usage	To support buffering material (Dacron, polystyrene beads, cotton batting) in use of pillow, doughnut cushions and dust sheets.
Working Information	

COTTON TAPE	
Other Names	Linen tape - linen different to cotton! Also very expensive and not necessary.
Chemical Composition	100% cotton plain weave.
Suppliers	Ackmead Holdings Group Haberdashery supplies
Manufacturers	Ackmead Holdings Group (see Dacron Wadding Information) Price: Cotton linen tape unbleached 9 mm (w) x 1000 m \$81.20 per reel
Usage	To secure objects, fragile, portable during transport, storage etc.
Working Information	Available in varying thickness and colour, cut to length needed.

DACRON WADDING	
Other Names	Tutlon wadding
Chemical Composition	Fibre material made from layers of bonded polyester (<u>not</u> to be used directly on objects).
Suppliers	Ackmead Holdings (Wholesale) Maberdashery
Manufacturers	Bills Fibre, Dunedin Autex Ackmead Holdings Group Ltd 55 Sydney Street, Paines, Wellington Phone: 568-5822 Fax: 568-5820 Price: Dacron roll 15 metre (1) \$137.70 \$9.18 per metre, weight - 9oz.
Usage	Effective for padding out objects and forms. When used with textiles etc are buffer material advisable. Storage support pillows, cushioning, buffering of objects and textiles.
Working Information	Very lightweight, good tensile strength, mildew and insect resistant, is hydrophobic. Melting point 249-290°C. Comes in varying weights 1-9 oz. - Must have isolating layer between Dacron and object as may catch, i.e. calico, Rheem cell-air, tyvek.

HOT MELT ADHESIVE	
Other Names	Thermogrip #6363, Bostik 3 m #3764, Evo-Stick 7702.
Chemical Composition	Main component ethylene/vinyl acetate co-polymer suitable for constructing storage support.
Suppliers	Hardware or contact manufacturer for worldwide distribution.
Manufacturers	Bostik, 3M Company Evode Ltd.
Usage	Should <u>not</u> be used directly on objects. Making supports especially with polyethylene foams. Use with paper board, textiles, polyethylene foams and rods, Tyvek. To make containers, supports for storage, display and travel.
Working Information	

EVAZOTE	
Other Names	EVA foam
Chemical Composition	Cross-linked closed cell foam EVA co polymer, therefore not as stable as Plastazote.
Suppliers	Thorndon Rubber (Lower Hutt) Ultralon (Christchurch)
Manufacturers	BXL Plastics (Eng)
Usage	See Plastazote
Working Information	See Plastazote

POLYETHYLENE BACKER ROD	
Other Names	Plastic tubing
Chemical Composition	Extruded, closed cell polyethylene foam. Hercules Backer Rod has been conservation tested CCI, however other brands should be tested before use. Do <u>not</u> use polyurethane backer rods.
Suppliers	D M Figley Co Inc. 10 Kelly Court Menlo Park, CA, Tel: 415-329-8770 800 292-9919 Fax: 415-329-601
Manufacturers	Applied Extrusion Technologies Inc. - maker of Hercules Backer Rod (HBR)
Usage	Doughnut support. Gasketing for exhibit cases and storage cabinets. Collars for support of objects.
Working Information	Variety of diameters 1/2" - 2 1/2". Flexible, strong cushioning support. Cut with knife - do not use heat cutting equipment. Can attach using hot melt adhesives, or heat gun.

HICORE CORRUGATED BOARD	
Other Names	
Chemical Composition	Polythene/polypropylene co-polymer.
Suppliers	Matra Plast 420 Notre Dame CP 600 Berthierville (Quebec) CANADA Tel: 514-836707 Fax: 514-8362315
Manufacturers	
Usage	Large, strong boxes and storage drawers. Use as flat support with a polyethylene foam for cushioning, i.e. pack foam and Rheem cell-air.
Working Information	Varying thicknesses - up to 14.0 mm thick. Stable, flat board, very strong support, smooth finish. Cut to ideal size.

POLYURETHANE FOAM	
Other Names	Chip foam
Chemical Composition	
Suppliers	Wiggins Teape (Paper House) Wellington Ultralon (Christchurch) Thorndon Rubber (Lower Hutt) Vita NZ Ltd (Upper Hutt)
Manufacturers	Vita NZ Ltd
Usage	Short term packing/storage for objects, cushion against vibration, impact.
Working Information	Available in varying sizes and thicknesses, over a long period of time becomes embrittled and leaches acidic properties. - must use isolating layer between polystyrene balls and object, i.e. calico, tyvek, Rheem cell-air.

MYLAR	
Other Names	
Chemical Composition	Pure polyester, transparent film.
Suppliers	Ransons
Manufacturers	Dupont
Usage	Encapsulation. Windows on storage boxes (use double-sided tape to attach on interior). Temporarily enclose specimens for exhibit. Exhibiting documents. May be used to prevent acid migrating in wooden drawer units (blotter placed over Mylar sheet).
Working Information	Lightweight, stable, clear sheet film. Varying thicknesses. Creates static - do not place adjacent to fragile medium, i.e. pastel, charcoal surfaces.

RHEEM CELL-AIR	
Other Names	Tapex
Chemical Composition	Polyethylene
Suppliers	Packaging House (Wellington)
Manufacturers	
Usage	Packing material/isolating barrier for Packfoam, Dacron, polystyrene storage supports.
Working Information	(1990) Contains no volatile substances manufactured from food grade LDPE resin, etc plus extrusion processing. * (minor percentage which is non-toxic and U.S.F.D.A approved)

PACKFOAM	
Other Names	Jiffy foam, Jiffy pak, Rigid foam, Ethafoam.
Chemical Composition	Cross linked, rigid, closed cell polyethylene foam.
Suppliers	Dunlop Flexible Foams (Importers)
Manufacturers	EXL Plastics (Eng) Dunlop Flexible Foams (Importers) 87-89 Harris Road, East Tamaki, Auckland P O Box 58-136, Greenmount, Auckland Phone: (09) 274-5789 Fax: (09) 274-4721 Ethafoam 220 E Plants 100 mm (W) Price: 2750 x 600 x 30 = \$49.30 2750 x 600 x 100 = \$165.30 F.C.L. Lots
Usage	Packaging, storage mounts, display supports.
Working Information	Lightweight, strong, easily malleable using cutting utensils to specific forms: - stable material - available in two thicknesses 50 mm, 100 mm planks - not to be moulded using heat apparatus - should have non-abrasive isolating layer such as Rheem cell-air, calico.

PLASTOZOTE	
Other Names	Polyethylene foam, P.E. foam
Chemical Composition	Low density, cross-linked polyethylene foam (closed cell)
Suppliers	Thorndon Rubber (Lower Hutt) Ultralon Products (Christchurch) *Dunlop Flexible Foams (Auckland)
Manufacturers	EXL Plastics (Eng)
Usage	Packaging/Storage - cushioning/shock absorption material, ideal support/buffer of heavy or dense objects.
Working Information	Conservation stable material preferable to Polyurethane, Evazote foams. Available in varying thicknesses from 3-30 mm and differing length. Easily cut with sharp knife to suited dimensions. Variety of colours.

POLYPROPYLENE FLUTE BOARD	
Other Names	Corflute, flute board, Coroplast, cor-x, polyflute.
Chemical Composition	Polypropylene/Polyethylene co-polymer.
Suppliers	Conservation Supplies (Wellington) Gratel Systems Ltd (Lower Hutt)
Manufacturers	Gratel Systems Ltd (Dannevirke)
Usage	Packaging/storage supports, containers, backing boards, Display mounts (?)
Working Information	Lightweight stable, flat board, strong support, smooth surface, cut to size suited, ideal for storage of heavier objects (portable)

POLYSTYRENE	
Other Names	Bead balls, polystyrene blocks, polyballs
Chemical Composition	
Suppliers	Beta Interspan (Taita) Golds Craft Shop
Manufacturers	Beta Interspan, 5 Paga Grove, Wingate Phone: 567-1465 Polystyrene manufacturers Price: \$40.00 per bag (large) 15.03.93
Usage	Short term packing/storage material of large objects.
Working Information	Expanded foam - good moulding characteristics, polystyrene easily cut with sharp knife or hot wire - lightweight packing material to fill voids and cushion against impact, however should only be used short term as material is unstable and at high temperature gives off noxious fumes. - must have isolating layer between polystyrene and object, e.g. calico, Rheem cell-air, tyveck, etc.

3M #415 DOUBLE COATED TAPE	
Other Name	Double-sided tape
Chemical Composition	Transparent double-sided tape with acrylic based adhesive on a polyester carrier.
Suppliers	Conservation Materials Ltd Light Impressions
Manufacturers	3M
Usage	Used with Mylar sheeting to encapsulate labels. For long or short term storage, display, packing materials, i.e. windows in storage boxes.
Working Information	Inert, non-yellowing, reversible with solvents. Pressure sensitive. Available in 36 yard rolls, 1/4", 1/2", and 1" widths. Do not use directly on objects.

TYVEK	
Other Names	
Chemical Composition	Spun-bonded olefin is 100% polyethylene fibre, corona treated to improve ink adhesion and coated with anti-static agent.
Suppliers	Paper House Fabri-Cell
Manufacturers	Dupont
Usage	Covers interleaving between materials, over objects protection against dust, certain amount of water absorption. Isolating layer for storage supports.
Working Information	Strong, lightweight, flexible, smooth anti-static available in sheet and rolls. Limited resistance to water, chemicals and abrasion.

VELCRO	
Other Names	
Chemical Composition	
Suppliers	Acknowled Group Ltd (Wellington) Haberdashery Stores
Manufacturers	Velcro NZ Ltd
Usage	Support fastening of textile materials and containers, archival boxes.
Working Information	Woven nylon and loop fastenings consists of pairs - one strip with minute hooks, the other loops, available in strips and dots. Also purchased with or without adhesive backing.



GUIDELINES FOR HANDLING CERAMICS

BY LYNN CAMPBELL
CONSEVATOR
MCDOUGALL ART GALLERY

General Guidelines

Keep working areas neat and clean.

Never be in a hurry

Always have clean hands or surgical gloves to handle ceramics.

Do not handle or carry more than one object at a time.

ALWAYS USE BOTH HANDS.

Prepare the passageway ensuring that doors are open and that a resting place for the object has been prepared.

Understand exactly what is to be done with the object before you move it.

Be aware of special requirements of the material involved.

Never walk backwards in the vicinity of other objects.

Handle works as little as possible.

Keep a lookout for damage.

Keep a watch for objects left in a potentially dangerous position and try to rectify the situation.



Handling Decorative Arts eg Ceramics

Lift objects by sliding one hand underneath the object and steadying the body of the object with the other.

Never lift by handles or edges. These can be the weakest parts despite being designed for being carried.

If the ceramic is carried in a box or tray stand the object in its most stable position before moving. For example, bowls are often wider at the rim than the base and should be transported in the inverted position.

Ensure that the objects are in good condition and not likely to fall apart when picked up.

Unpacking Notes

Do not hurry.

If packing is damaged or inadequate a photograph may be useful for insurance claims.

Take careful notes of all labels and do as they instruct.

Cut or undo fastenings. Do not rip.

Make sure that the object is unwrapped on a stable surface to ensure safety should the work fall.

Retain packing materials if they are to be reused and are reusable.

If the work is in a crate do not damage the crate getting into it.

Take poloroids of works inside to ensure you are repacking correctly.

It is always safer to pack individually in separate boxes and which can then be placed into a larger communal crate. In this way there is no risk of shifting packaging damaging the object.

All objects should be completely covered with a piece of acid free tissue. **DO NOT TAPE.**

If there are protrusions make soft rolls of dacron covered with unbleached cotton to cover these areas.

After this cover with a material such as bubble pack this can be secured with one small piece of tape.

The pulling off of large pieces of tape can cause extensive damage when being unpacked.

When being packed / unpacked only one item at a time should be on the working surface.

Clear labelling of the outside of the box is essential. A diagram showing the method of packing on the outside is a good idea with a drawing of the object to describe its form.

When unpacking fragile objects all the packing must be removed from around the object before trying to release it from the box. Do not attempt to pull the object out.

In storage ceramics should be covered to prevent dust settling and where possible displayed in a dust free environment.

Reading List

Conservation and Restoration for Small Museums (1981)

Western Australia Museum, Francis St, Perth
Western Australia 6000.

M Taylor, *A Manual for the Handling and Packaging of Museum Objects*. AGMANZ
C/O MONZ, P.O. BOX 467, Wellington.