

HOW TO RECYCLE YOUR WINDOW WASTE

A PRACTICAL 'HOW TO' GUIDE

Introduction

This booklet provides a practical 'how to' guide to recycling window waste and has been developed to be used by anyone directly involved in the installation of replacement windows and the demolition and segregation of window waste.

WINDOW WASTE PRODUCERS – WINDOW INSTALLATION OPERATORS

General guidance

Five key points to remember when trying to keep your window waste segregated for recycling:

1. Use the correct tools for the various tasks and material types to make your work easier
2. Keep your vans clean and tidy to help prevent mixing and contamination of the waste during transportation
3. During transportation, secure deglazed glass panes to prevent breakage
4. Where possible, use different containers or areas for storage
5. Use the appropriate skips for the different waste materials to help prevent contamination which will reduce the value of the waste



WRAP

Creating markets for recycled resources

HOW TO RECYCLE YOUR WINDOW WASTE



Transportation

A clean and tidy van will make off-loading quicker and easier and will help prevent the various waste materials becoming mixed together. By keeping the wastes separated, you can prevent contamination which reduces the value of the waste. A clean and tidy van should have:

- organised racks with tools and dust sheets stored securely
- plywood boards and ratchets to secure glass for transportation

Storage

Proper storage of window waste materials at the yard is vital to maintain the value of the waste and to help prevent accidents, especially those related to broken glass.

Properly stacked waste windows at a depot will:

- help prevent accidents
- provide easy access to the window waste for demolition and segregation by the yard personnel
- help to keep the whole depot operation tidy and ordered as tidy stacking will encourage others to follow suit
- save you time in the long run

Keeping glass waste clean is vital for it to be recycled, as reprocessors will only accept materials that are free from contamination by products such as sealant, masonry or other types of waste. Contaminated waste will be rejected by the reprocessor and sent to landfill, which will then incur landfill charges and have wasted the time and effort you spent trying to separate the waste for recycling.

WINDOW WASTE PROCESSOR – YARD PERSONNEL/GROUND STAFF

General working practices

It is important that everybody handling the window waste understands the importance of keeping the waste separated and free from contamination to help retain value.

Work with the installation staff to help them off-load vans to ensure that materials are separated correctly. By clearly labelling storage areas you can help ensure that wastes are separated correctly.





Compounds and skips

Waste separation and preventing contamination

Stockpile all window wastes for deconstruction in clearly signed, secure areas to keep trespassers out and help to prevent contamination by fly-tipping. Skips themselves can also be made secure through the use of locking lids to further guard against fly-tipping.

To prevent the temptation to use the recycling skip for waste to be landfilled or as an overflow skip, make sure the recycling skip is placed further away from the unloading area than the general waste skips.

It is also important to ensure that you have the right size skip for the amount of waste you are likely to generate. Smaller skips are recommended, as they are easier and safer to fill as they do not require waste to be lifted above eye level. To maximize the use of the void space within the skip, reduce the size and volume of waste by deconstructing frames.

Health and safety

Keeping the yard clean and tidy will help to prevent accidents when moving around. If a yard looks clean, people are more likely to keep it clean.

When handling the window waste itself, especially during the deconstruction of glass, it is important to wear suitable personal protective equipment (PPE) such as high visibility vests, steel toe-capped boots, gloves and safety glasses.

Handling

During wet and cold weather, consider working indoors when deconstructing waste to prevent materials becoming wet and slippery and to guard against handling problems due to cold hands.

Machinery and tools

Use the correct tools for each task and ensure that they are in good condition. Where possible, use power tools to reduce physical exertion and to speed up the deconstruction process. Machinery should be used instead of manual labour for any hazardous activities.



PVC-U WINDOW DECONSTRUCTION METHODOLOGY

Product	Material	Separation Methodology	Storage	Quality Specific	Health & Safety
Gasket	PVC-U	Lever/scrape off with an appropriate tool, such as a screwdriver, filler knife or Don Carlos knife.	Cut into even lengths, if appropriate, to maximise space in removal receptacle. If possible, use some form of size reduction machinery.	Different composition of gasket material is a potential barrier to recycling.	Working with a sharp tool requires the appropriate safety measures. Also, working area needs to be properly managed.
Beading	PVC-U	Lever off with an appropriate tool, such as a screwdriver, guarded chisel, filler knife or Don Carlos knife. Tool must have a sharp, flat end. May require a lump hammer to prise the beadings apart.	Either cut to fit the storage receptacle, or store lengthways in racking. For the purposes of size reduction, a chipping machine is advantageous.	Most beading is composed of two different materials, plastic and rubber.	Working with a sharp tool requires the appropriate safety measures.
PVC-U Frame	PVC-U	Break the frame at the corners either using a mounted saw with a frame/fastening clamps to hold the bar in place or a pressurised cracker that exploits the weakness of the weld at the corner. Frames need to be broken into straight lengths to allow access to reinforcement bars. The cleaner the break, the easier it is to gain access to the reinforcement bar.	Either cut to fit the storage receptacle, or store lengthways in racking. For the purposes of size reduction, a chipping machine is advantageous. Remove Transom Mullion and reinforcement bars for size and weight reduction as well as material segregation.	Contaminants such as mastics and other fillers/ cements may need to be removed as well as other general dirt.	Training for the usage of machinery and safety equipment specific to that apparatus is essential.
PVC-U Crucibar (Transom Mullion)	PVC-U	Use a mounted saw with a frame/fastening clamps to hold the bar in place. If a bench mounted saw is not feasible, then a handheld version may be used. However, this may entail extra protective equipment to be supplied. The crucibar weld is the weak point and may be exploited by applying pressure or force to break the crucibar's welds with the main bar length.	Crucibars should be reduced to short, straight lengths to maximise storage space in the receptacle. For the purposes of size reduction, a chipping machine or mounted saw are advantageous.	General quality of the material may require cleaning of some form prior to reprocessing.	Must be compliant to general Health and Safety practices. The working area also needs to be properly managed.
Fixtures and Fittings	Various	Remove all fixtures and fittings such as hinges, locks, brackets and screws using standard tools (screwdriver, hammer, guarded chisel etc) . Also remove any plastic wraps and labels with scraping tool or peel where possible.	Separate good quality fittings from misorders/unused frames for reuse. Store poor quality fittings separately. Dispose of labels/wraps appropriately. All fittings should ideally be stored in covered area or a covered receptacle.	Separate good quality and unused fixtures and fittings from those either used or of poor quality. If fixtures conform to current industry standards, they should be kept separate again for possible reuse.	Safety equipment specific to the job is essential.
Reinforcement Bars	Steel or Aluminium	Remove fastening screws if necessary and, where possible, slide out the bar. If the bar is secured in another manner, it may be necessary to crack the PVC-U frame lengthways if appropriate or use a specialised chipping machine and chip both materials together, then separate.	Cut into even lengths if appropriate to reduce wasted space in removal receptacle. A covered skip is recommended to prevent water contaminating the metal.	If any of the metal is contaminated, then some form of cleaning or decontamination may be necessary.	Proper glass handling PPE is required eg slash and puncture resistant gloves, Kevlar arm protectors, tinted visor and steel toe-capped work boots.
DGU	Glass	Comes free once beading and gaskets are removed. Remove as a single intact unit where possible. Remove single glazed units as above, but more care must be taken as they are a lot less robust and break easier.	Store whole in specialist glass receptacle.	DGU's conforming to the latest industry specifications can possibly be reused.	

TIMBER WINDOW DECONSTRUCTION METHODOLOGY

Product	Material	Separation Methodology	Storage	Quality Specific	Health & Safety
Timber Frame	Wood	<p>Use a mounted or manual saw to dissect the frame into straight lengths once the glass has been removed.</p> <p>If timber is jointed, it may be possible to cut half-way through the corner with a hand saw and knock the bar length out with a lump hammer, exploiting the joints.</p> <p>If the frame has wooden beadings, it may be necessary to remove these with a guarded chisel and lump hammer. Tap the chisel into the join and lever the beading off.</p> <p>Frame bar lengths and beadings in particular may contain nails, removal of these may be necessary if the material is to be stored whole and not chipped. If using chipping machines that cannot handle nails, then they must be manually removed.</p>	<p>Cut timber lengths to size so they fit the storage receptacle or further reduce using a wood chipper.</p> <p>This material should be stored in a covered receptacle or covered area to prevent water infiltration and potential leaching of contaminants.</p>	<p>Timber frames can be contaminated with a vast range of preservatives, fillers, cements, paints and solvents.</p> <p>The presence of nails may be an issue if the final market requires whole bar lengths.</p>	<p>Training for the usage of machinery and safety equipment specific to that apparatus is essential. The working area also needs to be properly managed.</p> <p>Potential for leachate generation and correct storage of potentially hazardous contaminants must be considered.</p> <p>Splinters and nails are problems for timber – proper handling training may be necessary dependant on the nature of the timber.</p>
Fixtures and Fittings	Various, mainly metal	<p>Most fixtures can be removed with a standard tool (screwdriver); those that cannot may require a guarded chisel and lump hammer, or even a manual saw in certain circumstances.</p> <p>Weak casement fixings may be snapped-off manually.</p>	<p>Separate good quality and unused fixtures and fittings from those either used or of poor quality, especially if there are some which conform to current industry standards.</p> <p>Fixtures from timber windows must be treated similarly to the timber itself in terms of contaminant control and stored appropriately.</p>	<p>Separate good quality and unused fixtures and fittings from those either used or of poor quality. If fixtures conform to current industry standards, they should be separated for possible reuse.</p> <p>Some timber fixtures are subject to the same contaminants as the frames.</p>	<p>Must be compliant to general Health and Safety practices. The working area also needs to be properly managed.</p> <p>Potential for leachate generation as with timber frames.</p> <p>Fixtures may have been painted with lead-based paints and a variety of combinations of preservatives – ensure proper breathing apparatus is available for any work on such frames.</p>
Glazing	Glass	<p>Remove entire glass sheet intact if possible over a suitable receptacle in case the glass breaks. Practical methods include the direct approach of laying the window over a receptacle at waist height, or on the floor of a receptacle, and smashing out the glass with a hammer or large pole-type implement. Remove glass shards remaining in the frame using pliers or a hammer.</p> <p>For jointed timber frames, it may prove more practical to remove one bar length, then “knock-off” the remaining three lengths from the glass with a wooden block and lump hammer (dependant on the presence of sealants holding the frame together), so the glass pane comes away whole.</p>	<p>Store in a covered receptacle designated for glass. Lockable cover is necessary for safety, protection from rain and to discourage fly-tipping.</p> <p>Covers are highly important if skip is not held in a secure compound.</p>	<p>Glass contaminants such as mastics, fillers and adhesives need to be cleaned.</p> <p>Other contaminants such as lead strips from leaded glass may need to be removed.</p>	<p>PPE including slash and puncture resistant gloves, Kevlar arm protectors, tinted visor and steel toe-capped work boots. Must be compliant to general Health and Safety practices.</p> <p>Due to the nature of light refraction from broken glass (particularly shattered toughened glass), any people suffering from epilepsy may not be able to undertake these tasks. Tinted eye-wear is suggested to prevent eye damage and attention lapses that may result from glare.</p> <p>At any point where glass is broken, consideration must be given to glass dust – appropriate dust masks may be necessary where applicable.</p>

RECYCLE FLAT GLASS HERE



- ✓ Clear flat glass
- ✓ Patterned glass
- ✓ Laminated glass
- ✓ Wired glass
- ✓ Double glazed units

**Yes
please!**



- ✗ Leaded glass
- ✗ Bricks or ceramics
- ✗ Putty or silicone
- ✗ Wood, plastic or metal
- ✗ General rubbish

**No
thanks!**