

Glazing Buildings

There are three main ways of representing windows in buildings:

- * Printed on paper, with the “glass” dark
- * Clear plastic with glazing bars and window frames printed or painted on the plastic
- * Representation of window frames and glazing bars stuck onto clear plastic. The frames might be paper, card, plastic, or etched metal.

The first is probably the least realistic in appearance, and the last usually looks the best close up. However, for a building towards the rear of the layout they might look equally good, and unless very close to the front the difference between the second and third will be difficult to tell.

If you want to add interior lighting to the building the first method is no use, and you will need to build at least a basic interior to be seen through the windows. This is also true for modern industrial and commercial buildings with large windows and plenty of light in the interior.

A danger with clear windows is that you can sometimes see things you should not be able to see. For example, if you glaze both front and back, you don't want to be able to look in at an upper front window and out of one on the ground floor at the back. So if you are using clear windows, you need to think about putting in floors and partitions to block the view, though these can be very basic.

You can mix the different types up according to the building and what is available. While you would normally be consistent on one building, you need not be as the photo opposite shows.

The brewery windows left and centre are printed photographs with the “glass” cut out, leaving the glazing bars, and clear plastic mounted behind. The windows on the right are simply printed on paper.

The main issue when buying commercially produced windows is whether anyone makes the design, size, and colour you need. If it is a standard sash window or a GWR station you may have a choice, but often you will have to compromise.

You can however make your own windows of any of the types if you can't find what you want.



Windows Printed on Paper

The window and glazing is simply printed on thick paper, with the glass a very dark colour. Printed paper/card buildings are often done this way.

All these windows are simply printed as part of the building, from photographs taken of the original building.

You can make your own: take a photo of the window you want to model (square on) and print it out correct size. When taking the photo you need to be careful of lighting and reflections – you don't want the glass catching the light, better if it looks dark, and make sure any reflections are appropriate. The Brewery office on Wickwar is done this way, several of the windows show reflections of trees which add to the realism, and the upper right one shows a shadowy image of the interior – which can make a photograph rather better a drawing.



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The windows look better if you cut a hole in the building side and mount the printed window on the back so you get the relief of the sides of the window opening (assuming it is not a modern flush-glazed building).

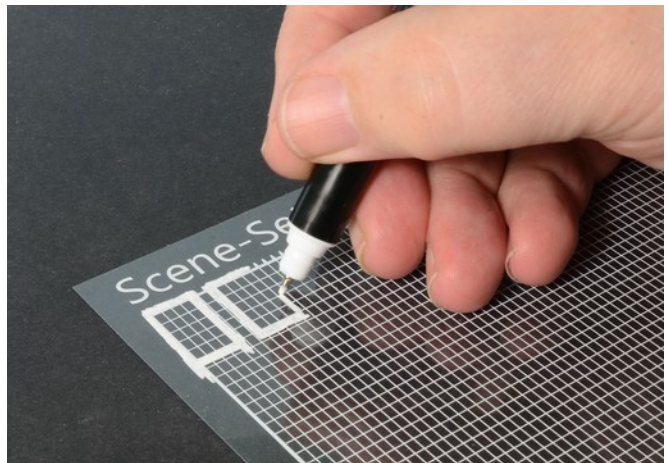
Windows Printed on Clear Plastic

Many kits are provided with sheets of clear plastic with the windows printed on them in white. These are sometimes available separately, or you may have some left over from kits you have bought.

Freestone Models sell sheets (Scene Setters) with white glazing bars printed in a regular grid. You cut out a rectangle with the number of panes you need plus an overlap round each edge, and thicken up the edges for the outside frame using a paint pen (it is easy to do this as the printed line forms a stop for the pen and paint, resulting in a straight edge).

Printed windows are typically only available in white. You can add a little colour to some with a water based felt-tip or watercolours, but you will only get pastel colours at best. Fortunately most windows are white.

You can draw windows in a suitable computer package (say a table in Word) and print them onto overhead projector slides. However coloured inks rely on a white background so this only works for black; yellow for example will come out as a faint smudge. Laser printers are better than ink-jet.



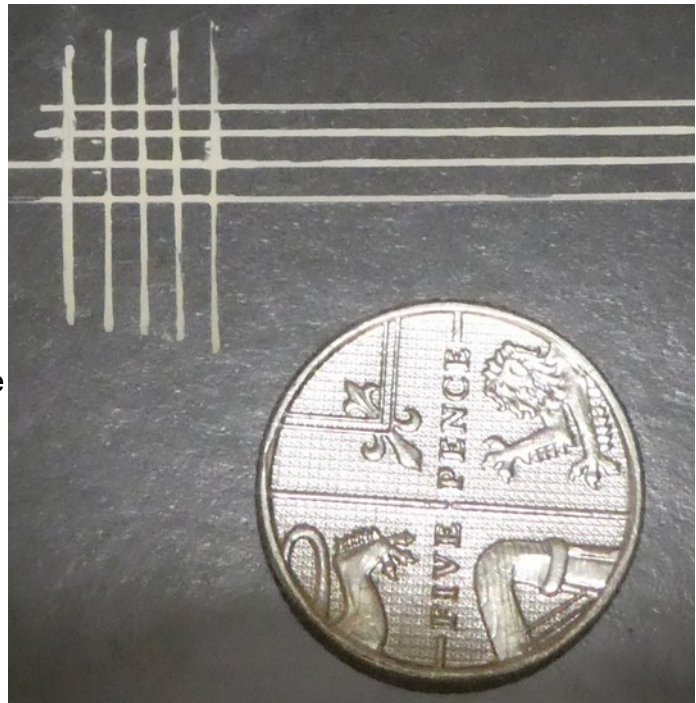
It is possible to draw directly onto a clear plastic with a suitable pen - overhead projector slides take ink well. First draw the window scale size on paper (possibly by computer – a table the right size in Word for example), put the paper under the acetate, then trace over the lines.

You can buy white gel paint pens from most art shops, although it is difficult to get a uniform line with them. Uni-Posca pens contain acrylic paint and come in a range of colours, they need to be shaken before use to mix the paint. For black I find Faber Castell fine artists pens (very black ink) work well. Any art shop will have a range of different pens in different colours you could try.

If you have a lining pen (bow pen) these are ideal, and you can use any colour of paint with them. The photo shows a very quick attempt that only took a couple of minutes – if doing it for real I would let the lines on one direction dry before doing the cross ones, this would avoid the smudges.



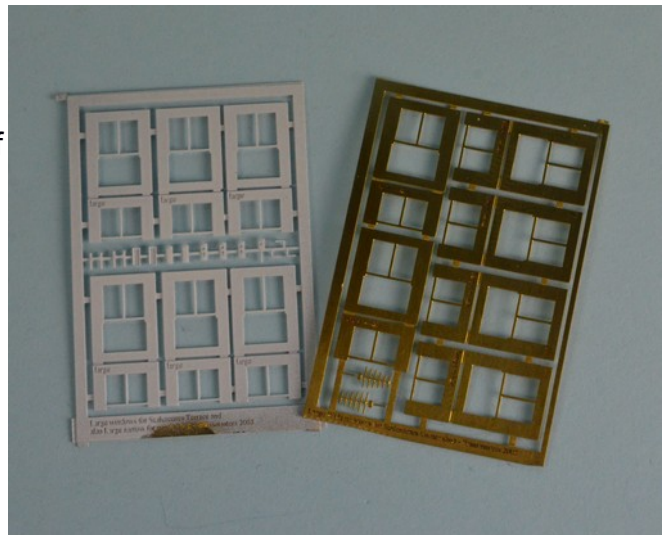
The horizontal lines are drawn with a Uni-Posca pen



Separate Frames

The final method is to have separate frames with clear glazing stuck behind. A big advantage is you can paint the frames first, any colour you want. They also provide relief between frame and glass, so can look better viewed close-up. For windows with complex curved patterns like church windows they are almost essential.

Right, Brassmaster etched windows, the ones on the left after spraying with Halfords primer.



There are numerous suppliers producing frames in different materials: moulded plastic; laser cut plastic sheet; etched brass. Etched brass possibly produces the best effect but your choice is likely to be determined by who makes the type you need.

The signal box windows are etched metal, glazed with glass microscope slides for maximum clarity of the interior.

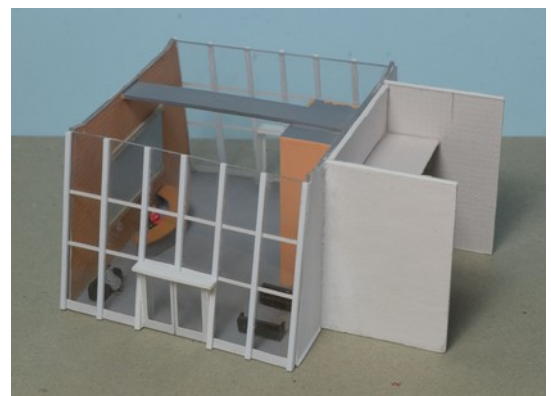
You can make your own. A simple (if fiddly) way is to take a printed window (first type) and carefully cut out each frame of glass – 2 cuts into each corner of each frame. The key is to use a very sharp blade and magnification like an Optivisor. A variant on this method is to print the window onto a self-adhesive label and cut the panes out. The windows on the left in the photo of the brewery are done like this.



Another way is to use self-adhesive address labels. Cut the labels into thin strips using a straight edge and scalpel. Try to only cut through the paper, not the backing sheet. Take strips and lay them onto clear plastic to form the windows. I usually do all the horizontal ones first and then the verticals. Again it helps to draw the window on paper first and put this under the clear plastic as a guide.



Don't worry if the strips you cut are not all uniform width – throw most away and use just the best ones. Bars not quite square can be pushed to a better position with the end of a scalpel blade. The method is best for white frames, though it is possible to colour the frames with water paint. The house windows are plasticard strip for the frames with painted address label for the glazing bars.



Two buildings with large areas of glass enabling you to see the interior. Both use a mix of plastic strip for the main frames and strips of address label for the thinner bars.

Glazing Sheets

Sheets of clear plastic are readily available from model shops and the internet. There are two main types: styrene sheet and acetate sheet. Another source of acetate sheets is overhead projector slides. Styrene can be glued with standard plastic glues, but is more easily scratched and fogged by glues; on the whole I prefer acetate.

You can buy plastic sheets with patterns printed on them. York Model Rail have several different sheets of "Stained Glass", and Scene Setters from Freestone Models includes sheets printed with a grey grid to represent leaded glass (though the spacing is a little large for N). ScaleModelScenery do a sheet with protective blast tape as used during WW2.

The best glazing of all is in fact glass which you can see through more clearly than plastic. It can be bought in thin sheets as microscope cover slides: a hundred 25mm x 50mm slides 0.17 mm thick cost less than £4 on ebay including postage (they come in various sizes). You can cut them to smaller rectangles using a diamond tipped glass cutter and steel rule.



Attaching the Glazing

A lot of people recommend using an impact adhesive such as UHU or Bostic Clear to avoid any danger of fogging the windows. However, both Grahame Hedges and myself prefer a superglue, I use a gel one, and have had no problems with fogging. Other people prefer a clear drying PVA based glue.

Whatever glue you use, the important thing is to use it very sparingly and keep it away from the visible parts of the glazing. A small dot in each outside corner will usually be sufficient – it does not need a lot of strength (though I always prefer to make buildings removable in case of problems or for when I decide to add an interior or lighting). Apply the glue to the wall around the aperture with a cocktail stick or sharpened match from a small pool/puddle of the glue on a poly bag. Hold the window glazing (with bars) with long nose tweezers and manoeuvred in to position while looking at the front of the building to ensure accurate placement – don't 'slide' it in to position otherwise you will get glue on the glazing in the see-through window area.

Suppliers – Printed on Clear Plastic

Scalescenes do a range of printed windows that fit their kits.

Freestone Models sell the Scene Setters range of printed glazing bars (cut to size):
<http://www.freestonemodel.co.uk/page20.htm>

At exhibitions they have a collection of printed widows from different kits, these are not available via the web site.

Scale Model Scenery do a sheet of large sash windows:
<https://www.scalemodelscenery.co.uk/shop/wx001-n-large-sash-window-sheet-n2mm1148-2/?v=79cba1185463>

Many building kits contain printed widows, you may be able to use left over ones from an old kit.

Suppliers – Separate Frames

York Model Rail have an extensive range of windows laser cut from 0.75 mm white plastic, including church windows:

<https://www.yorkmodelrail.com/n-scale/windows-templates-and-headers-2>

Smart Models also have a range of 15 window styles in laser cut plastic sheet:
<http://www.smartmodels.co.uk/laser-cut-parts.html>

Peedie Models have a wide range of etched brass windows.
<https://www.peediemodels.com/products.php?cat=25>

Brassmasters have about 20 different sets of etched windows. They are designed to match various Scale Scenes kits, but obviously could be used for other buildings:
http://www.scalescenes.info/resources/brassmasters_windows.pdf

N-Brass have 15 different etches of windows:
<http://www.nbrasslocos.co.uk/nline2.html>

Langley have 3 different etches of assorted windows:
http://www.langleymodels.co.uk/acatalog/Online_Catalogue_Building_accesories_window_door_frames_hoists_etc_68.html
They also have church windows with matching printed stained glass.

Scalelinkfretcetera have 2 etches, one of GWR station windows and the other industrial/Georgian:
<https://www.scalelinkfretcetera.co.uk/>

Ratio do an etch of domestic windows and another of industrial windows.

Dornaplas do a set of 12 plastic sash windows, available from many model shops.

Many building kits include widows you could re-use, for example Kestrel, and you may be able to find them separately or pick up a kit cheaply on a second-hand stall.

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