

Roof construction in 4mm scale.

I believe that roofs are one of the more important aspects of model construction and sadly one of the items most frequently modelled badly. We spend most of our viewing time looking down on our models so a little time spent here is well worthwhile.

Experience has shown that there is no quick way of building roofs and the Southwark Bridge Group has tried many techniques and come to the eventual conclusion that an almost solid roof provides the best solution. Kits from Southwark Bridge Models provide the means to fit roofs satisfactorily unlike most kits on the market where the modeller is left to his or her own devices.

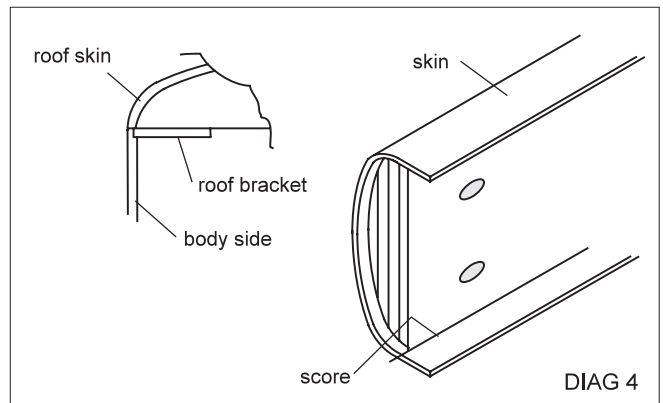
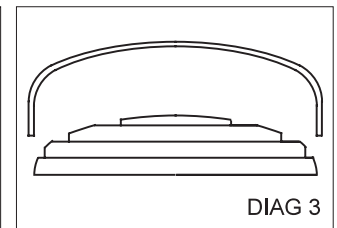
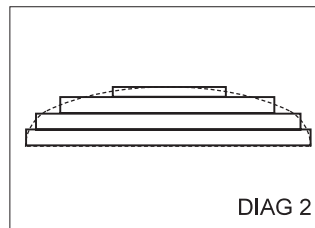
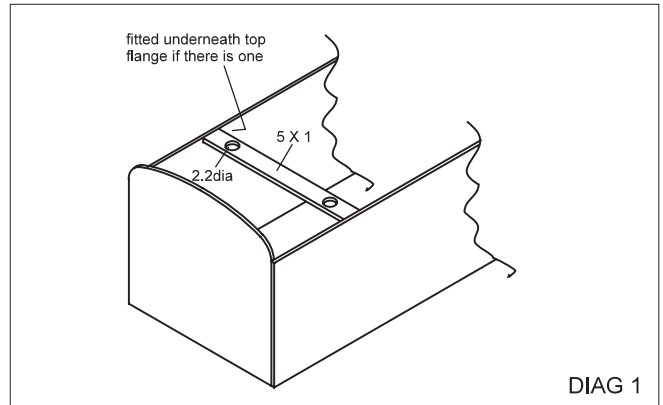
The basic technique consists of laminations of plasticard filed/scraped to profile and then covered with a preformed plastic roof. The solvent for joining the laminations has caused much research and problems. Plastic solvents such as MEK etc have to be used very sparingly as they cause distortion of materials, particularly in the long term. Impact adhesives such as Evostick are good, but again, have to be used very sparingly. A recent article by Gordon Gravit1 spurred me to try 'thin' cyanoacrylate (Superglue). I was very impressed with the results and all roof construction now uses this adhesive. Reference to DIAG 2 shows how the laminations are cut. The laminations must be a nice snug fit between the ends of the vehicle. Due to the amount of handling of the vehicle that is about to take place I strongly recommend that the roof be made before painting.

When sufficient laminations are cut, spread the Superglue on a lamination, even out with a cocktail stick, and assemble on a sheet of glass or similar flat surface. One of the benefits of superglue is that you don't have to wait days for solvents to dry out.

Now locate the roof carcass carefully in the correct position on the body and mark through the bracket bolt holes. Remove and drill, through all the laminations, 1.8mm and tap 8BA. Reassemble the roof on the body, checking that the fixing bolts do not protrude through the roof. It is also very important that the fixed down roof is not introducing any bowing or other stresses. Elongate holes in fixing brackets if necessary.

Now comes the messy bit. Using a scalpel, scrape the protruding edges of the laminations to the roof profile (see photo to right) – this is not difficult, but it does take time and needs care. Use a straight edge across the ends of the vehicle to check that the profile of the roof matches the body. Kits from Southwark Bridge Models provide an etched brass profile plate (or fully dimensioned paper template). If the laminations have been cut correctly then the amount of scraping will be minimal! When you are satisfied that the profile is absolutely correct – no bumps or dips – the outer skin can be fixed in place.

With the skin upside down and coated in superglue, press the laminations down onto it, applying pressure for a few moments. Ensure that the edges of the bottom lamination are firmly fixed to the skin. I've often resorted to vices or clamps to ensure this happens.



The overlapping edges of the skin must now be trimmed off (see DIAG 4). Refit the roof to the coach body and ensure it fits perfectly – if it doesn't adjust until it does!

Next the roof furniture needs to be fitted. The positions can be marked out directly onto the roof using the template provided in the kit. Mark, with pencil, a centre line at each end of the vehicle and lightly fix the template down onto the roof with Pritt Stick (just a narrow strip along the middle is sufficient) and then prick the various positions through with a pin. Note that the templates also show the positions of roof grab handles and rain strips. These should also be marked through.

Remove the roof and drill the holes for gas/oil lamps, ventilators etc. Do this in a couple of stages to avoid any distortion of the roof skin. Since plasticard is very soft, and drill bits can wander easily, it is best to start with a very small drill to locate the centre accurately.

Gas pipes need to be as thin as possible and 10 thou plastic filament is suitable. The pipe runs must be straight (although the prototype is often far from straight!). Start at the end furthest from the end steps and carefully solvent weld a very short (4 or 5mm) length to the roof. Wait a few minutes for the solvent to grab and then gently pull the filament into a straight line and weld in place. Keep taught for a few minutes for the solvent to grab.

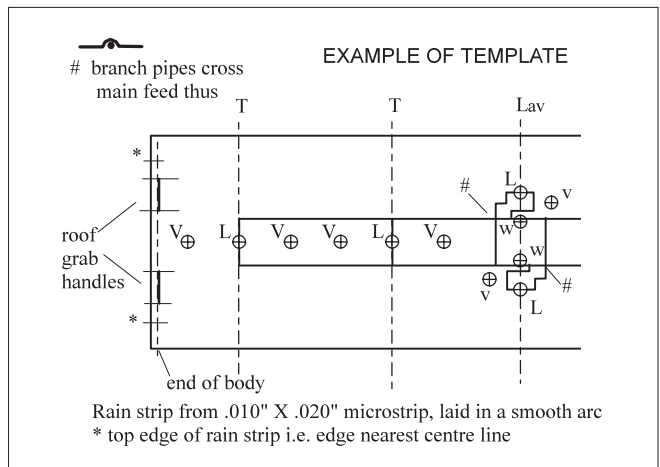
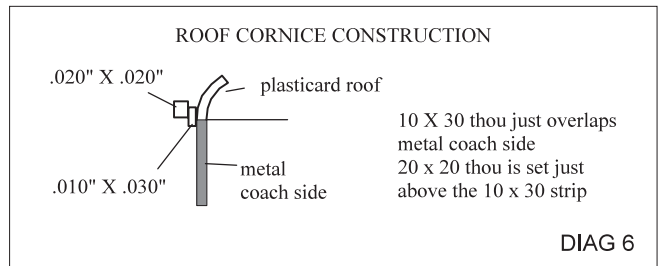
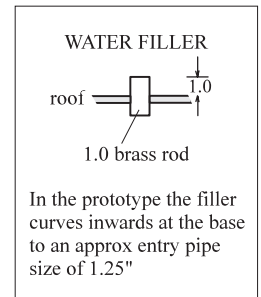
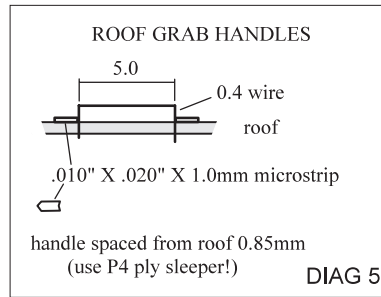
Rain strips are now added from 10 X 20 thou plasticard. These must follow a gentle curve. Position the strip and solvent weld a short length in the middle. Gently pull the plasticard into a curve making sure it follows the marks pricked through from the template and solvent weld at the ends. If satisfied that the curve is correct (examine from ALL directions), solvent weld along its length, making sure the brush/solvent doesn't push the strip out of position.

Add roof grab handles from 0.4mm wire (see DIAG 5) and little fillets of plasticard for the fixings. I use a P4 sleeper for the spacer – it's exactly the correct thickness!

Finally the cornice needs to be constructed as shown in diag 6. It is vital that this feature is perfectly straight and hides any gap between body and roof.

Spray the finished roof with several coats of your desired shade of white, rubbing down in between, and weather appropriately. Ventilators, lamps and grab handles were originally painted black, but some photos show the ventilators and lamps white so perhaps subsequent repaints weren't quite so fussy. The vertical edge of the cornice is painted brown to match the lower body colour.

Ivan Smith, 14 May 2005



Note: These construction notes are based on an article that appeared in The South Western Circular Vol 13/6 p184

1. Model Railway Journal No140 P27
2. Roof skin available in arc or elliptical styles and different widths from the South Western Circle Sales Officer.
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