

## Re-cladding T&G Carriages With Plywood

### Introduction

Grooved plywood is a simple, sturdy and cost effective alternative when replacing T&G cladding on carriages. Taieri Gorge Railway Ltd has used this material for years with good results and this paper describes the methods used.

### Advantages

- Stronger – If properly fastened the ply makes the carriage more rigid and reduces racking.
- Cheaper – no need to have T&G specially run.
- Quicker and simpler.
- More weatherproof.

### Disadvantages

- Not original.
- Surface finish - Construction ply does develop fine surface cracks as the plies shrink. This can be reduced (but not eliminated) by treating with Resene Timberlock exterior preserver/conditioner followed by Resene X-200 acrylic waterproofing membrane before painting with enamel paint. Restorers who want a better finish than construction ply make like to experiment with sign ply, which has a very smooth face for sign writing. No guarantees are given, as this material has not been tried.
- Damage repair – more cladding may need to be removed to repair damage but, again, the replacement is easier.

### Technique

The material used is 17 mm construction ply, CD, H3.

The ply is cut into panels so that the joints lie on framing timbers. Each joint is overlapped by 10 mm and sealed with a flexible sealer. Panels are screwed to the car, not nailed (nails will work or shear as the car racks). The plywood is grooved using a router to simulate the edges of T&G. It is important to adjust the groove spacing so that each joint in the ply is grooved to disguise it. Otherwise the joint becomes apparent as the ply sheets move relative to each other with travel. (See fig 1.)

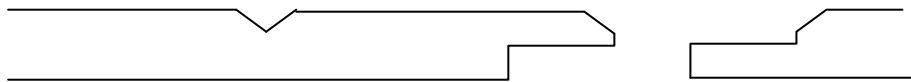


Fig 1

After the initial treatment outlined above painting is done with a second coat of Resene X-200 followed by one undercoat and two topcoats of enamel paint.

### Description

- Remove old T & G and repair framing, windowsills and fascia boards. If necessary fit packing strips to the frames so they form an even plane for the ply panels.
- Decide how you want to cut the ply. We find that using separate panels between the windows and under the windows is a good compromise between number of joints to seal, ease of assembly and ease of repair after damage, etc.  
The long panels between the windows are fitted first and are then overlapped by the under window panels.



- Cut the ply into panels to fit between the windows and behind the windowsills. Leave panels slightly long.
- Rout a 10 x 8.5 mm rebate in each side up to the windowsill level. These are on the outside face of the panels and will form an overlap with the square panels. (The end of the rebate is hidden behind the windowsill.)
- Temporarily fit the panels to car. (A small nail partially driven in will hold them.)
- Cut the square panels to the correct width to fit the rebates in the long panels. Again leave slightly long.
- Rout a 10 x 8.5 mm rebate in each side
- Again temporarily fit the panels to car. (Note that the top of these should fit behind the windowsills – see fig 2.)
- Mark the bottom edge of the panels and remove. Repair any defects in the panels using a flexible automotive type filler (eg CRC Mendent)
- Cut panels to length.

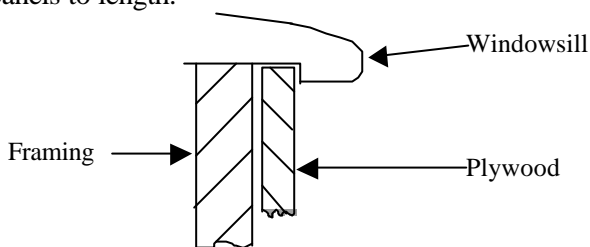


Fig 2



- Rout the grooves in the panels using a clamped straight edge as a guide. Rout each edge first to form 1/2 of a groove and then evenly space the grooves in between. Grooves are 5 – 6 mm wide and approx one ply deep (2.5 mm). (Note that the grooves need to be large enough to allow for filling by several coats of paint.)

- Sand the grooves.
- Repair any 'deliberate mistakes'.
- Sand the panels.





- Paint panels all over with one coat of Resene Timberlock exterior preserver / conditioner followed by one coat of Resene X-200 acrylic waterproofing membrane. (Note – the X-200 is quite thick but do not thin it or it won't fill the cracks. The X-200 does give a slightly textured look to the finished paint scheme but this is not unacceptable.)



- Screw panels to carriage with flexible sealer (e.g. Bostik Fillergap or similar) between the overlapped joints in the panels. (Note - as the windowsill holds the top edge of the panel, no screws are needed in this area.) Again a small nail will hold the panels in place before the screwing.
- Fill screw holes and sand.
- Paint with second coat of Resene X-200.



- Fill any gaps between the ply and window surrounds with filler.
- Shape and fit 1/2 round beading (D moulding) around windows to cover the edges of the ply.
- Run a small bead of sealer along the edges of the D moulding and along the top edges of the windowsills where they overlap the ply panels.
- Sand and paint with Resene X-200 or other appropriate primer.



- Paint with one undercoat and two topcoats of enamel paint, with a light rub down after the first topcoat.

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