

Peel-ply is the most common brand of special release-fabrics, which have a variety of uses in epoxy laminating. Peel-ply is a tightly woven nylon fabric, weighing approximately 55 grams per square metre, treated with a finish to which epoxy and polyester\* will not bond.

*\*Peel-ply can be used with waxed or un-waxed polyester resins, as in either case, the uncured or waxed surface is removed.*

A layer of peel-ply laid over a wetted fibreglass laminate is easily smoothed with a plastic squeegee. It is porous, so excess resin will pass through and wet it out, leaving the laminate with a higher fibre-to-weight ratio.

Whether bonding, laminating, filleting, fairing or applying fabrics, the success of the application depends not only on the strength of the epoxy, but also on how well the epoxy adheres to the surface to which it is being applied. Unless you are bonding to partially cured epoxy, the strength of the bond relies on the epoxy's ability to mechanically "key" into the surface.

Peel-ply is used in conjunction with fibre-reinforced laminates as a sacrificial layer that is applied over the surface of fresh epoxy. Once the epoxy cures, the peel-ply is pulled away, shearing the resin at the release fabric interface, and taking the resin layer that had impregnated through it, away with all the surface contamination. The surface of the laminate will be textured and clean, leaving behind a matte finish, facilitating excellent secondary bonding characteristics with little or no sanding. The release fabric also removes amine blush\*\*, irregularities and trapped air from the surface.

*\*\*Amine-blush is a by-product of the epoxy curing process and may begin to form during the initial cure phase. The blush is water soluble and can easily be removed, but can clog sandpaper and inhibit subsequent bonding if not removed.*

### **Peel-ply can be used in a variety of situations;**

1. To remove excess resin and to provide a fair surface with little hand finishing.
2. No weave filling is required after glassing, saving two sanding and one filling operation.
3. The preparation of local areas of a laminate's surface which is to have bulkheads, furniture, etc., bonded to it.

4. Used in conjunction with glass tape joints to fill fibre weave and face-in tape edges to the surfaces being joined.
5. On the last lamination prior to final fairing. The surface left behind is extremely smooth and requires much less labour to sand.
6. By applying a piece of peel-ply fabric to the wet fibreglass, but before final squeegeeing, allows the squeegee to move smoothly over the cloth without creating wrinkles or bubbles. Once the glue is properly dispersed, the peel-ply is left in place until the epoxy cures.

### **Directions for use**

Wet the reinforcing laminate out as normal and lightly remove excess resin with a rubber squeegee. Hold the squeegee at 45 degrees and apply enough pressure to ensure the laminate is sitting against the core or substrate, but leaving a slightly resin rich surface, ensuring enough resin is left to wet out the peel-ply and fill in between the fibres of the laminate.

Lay the peel-ply over the laminate in as close to the final position as possible. Some wrinkling is likely at this stage, but these can be worked out with a roller or squeegee. Typically apply the peel-ply to the laminate as soon as it is wet out, while the resin is fluid and not nearing gel. Large areas of the peel-ply will naturally wet-out at this time. It will become quite apparent where excess resin is laying and where the laminate is a little dry. The object now is to completely wet out the peel-ply, ensuring it is lying firmly against the laminate and all gaps in the reinforcing fibre beneath the peel-ply are filled with resin.

Three tools are used to wet-out and ensure the peel-ply is applied correctly. A surfboard type rubber squeegee, a grooved metal compaction roller and a foam resin application roller.

Start in the centre and work towards the edges. If using a squeegee, hold at approximately 45 degrees, using a light to medium pressure. This causes a certain amount of downward pressure that forces resin into the reinforcing laminate improving fibre wet-out and filling any voids existing between the fibres. Avoid applying too much pressure to the squeegee, as it locally over-compacts the cloth weave and after the squeegee has passed, the cloth weave relaxes increasing the space it occupies and air is sucked into it to fill the void created.

## Trouble shooting

The beauty of working with peel-ply is that you can see everything that is going on in the laminate, excess resin or air entrapment.

### For example:

After squeegeeing the release fabric too hard, a mass of white dots will appear under the surface of the peel-ply. These white dots are air bubbles sitting between the fabric weave. To rectify, find an area that is resin rich and move resin over with the squeegee to fill voids, or if it is too late for that, work more resin in from the outside surface with a roller.

When using a squeegee move it slowly, because you are forcing the resin through a multitude of fibres which can cause the resin to foam if you try to move it too fast, which induces air into the resin.

Grooved metal rollers work well on heavy laminates such as double-bias and triaxial knitted fabrics.

Foam rollers are useful on concave surfaces such as the inside of hulls as they apply pressure without pulling the cloth as the squeegee's do, resulting in the peel-ply lifting off the laminate elsewhere. When the peel-ply is wet-out correctly, it will have a semi-gloss look with no visible air bubbles under the cloth. Air bubbles will result in small craters that have to be filled later.

Let the resin cure fully, at least overnight, before you remove the peel-ply. Its effect will spoil if released too soon. This surface is now ready to be bonded to, or painted over, with little or no sanding.

If you are caught with the resin close to gel as you are near to completion, use forced hot air from a hair dryer or fan heater (not heat gun) to cause the resin to re-flow for a few minutes to enable the peel-ply to be properly wet-out, but time is limited, once cooled, the resin is likely to have gelled and will no longer be workable.

Order Code	Description	Width	Roll Length
CP00500	Peel ply	1500 mm	50 Lm
CP050T250	Peel ply tape	250 mm	50 Lm

## STORAGE

Peel ply products should be stored on packaging roll, and kept dry and clean.

NOTE Our products are intended for sale to industrial and commercial customers. We request that customers inspect and test our products before use and satisfy themselves as to contents and suitability. Nothing herein shall constitute a warranty, express or implied, including any warranty or merchantability or fitness, nor is protection from law or patent to be inferred. All patent rights are reserved. The exclusive remedy for all proven claims is replacement of our materials and in no event shall we be liable for special or consequential damages. 3/12/13



**ATL composites Pty Ltd**  
 Tel (+61) 7 5563 1222  
 Fax (+61) 7 5563 1585  
 info@atlcomposites.com  
 www.atlcomposites.com