

Composite Decking

The ins and outs

PART TWO

For those who missed the previous edition of Building Contractor, Wood and Plastic Composite (WPC) Decking is a growing phenomenon as the technology gets discovered by the southern hemisphere. WPC decking is an extruded mixture of plastic resins, wood fibre and secret ingredients to produce a high durability and low maintenance decking solution.

The practical side to WPC decking is to be reviewed this time as previously the technical aspects of composite decking were discussed.

Preparation

This is the most critical part of installing any composite deck as the requirements from product may vary substantially. Now that the research is complete and product and colour are selected, the finish worked out and the product is ordered. The most important part is about to begin, installation. Stop now and read the installation guide again especially if you have not handled WPC decking products before to ensure you know it inside out. As one little mistake could burn big holes in the back pocket.

Things to consider

1. Handling - Carrying, Cutting, & Personal protective equipment?
2. Substructure - What changes between using steel and timber?
3. Joist spacing - May vary somewhere between 300-600mm
4. Fixings - What kind and where do they go?

Handling and storage

Like all premium timber decking products WPC decking should be handled with care, but due to WPC decking being a little more prone to marking and damage it is important to adhere to the manufacturers recommendations for handling and storage. If they are not followed be prepared for the worst consequences as it may void any warranty claim.

Handling considerations start when the truck pulls up at the gate. Most manufacturers detail that the decking is to be unstacked off the truck rather than be tripped off and they go as far as stating all WPC decking boards are to be carried on their side to avoid the risk of breakage.

Storage is as important as the installation procedure because

if any part of a board is exposed to the sun and rain the weathering process will commence. Therefore the surface colour may start to change and irreversible marks or stains may be left on the board's surface, thus increasing the volume of wastage. If the WPC decking is stacked in a dry and well ventilated area and is covered by a UV resistant tarp the risks are minimised.

Substructure

This is not timber vs steel, but how WPC decking is fixed down as the both substructure options have different fixing requirements. Timber is the traditional substructure which most installation guides are based upon.

Timber is a natural product that allows for natural expansion and contraction of WPC decking occurring as climatic conditions change. In most cases the WPC decking may be fixed tight (via screw or nail) to a timber bearer and joist set up given they decking board is pre drilled (3-4mm pilot holes).

Steel can be very different as it can be quite rigid depending of the section used. If the joist and bear set up does not allow for the expansion and contraction of WPC decking it may result in Screw sheer or Tear out on the ends. 'Z' and 'C' sections may



flex a little giving WPC decking room to move as it expands and contracts, but the 'box' section is very rigid especially if the steel is thicker than 1.6mm. In general to get around the screw sheer and tear out it is recommended when fixing to steel it is advised that a large pilot hole (4-6mm dependent of the gauge of the screw) are used with screw placement further back from the end. Do not forget steel piecing screws are required. Check with the manufacturer for specific details, and this includes the steel substructure manufacturer.

Joist spacing is critical. This is defined in the fixing instructions of the chosen product as it may vary anywhere between 300-600mm. If the project has an existing substructure, be sure the product selected can span the required distance. An error now could be very costly if there is a failure in years to come.

When putting in the substructure for a project ensure the minimum ground clearance specified by WPC manufacturer is met if not exceeded. Ground clearance are specified to aid ventilation around the decking board to give them a chance to completely dry out. Commonly hollow boards require greater ground clearance as moisture may enter the empty cambers in the centre to board and drying out is more important as they have greater surface area for moisture uptake.



Fixings

Time to read the fixing instructions again. Marketing literature will confuse any reader as it may state that nailing can be done, coloured screws are available, hidden fixings allow for a screwless finish, but what should be used?

Based on the substructure used on the project our options are limited either way. Some fixing instructions do not comprehend a steel substructure even though it is becoming more popular. In this case the manufacturer must be contacted to define the means of fixing otherwise the warranty may be void. Many boards on the Australian market use a traditional square profile allowing for simple face fixing, but more high tech solutions are becoming available as designers want a hidden fixing system.

Face fixing is fairly simple but must be thought through before the first board is cut, as a hollow board may only have certain places the board may be pieced. Some manufactures have incorporated screw placement indicator line into the decking board's surface to aid installation. If the not review installation guide again.

A Solid WPC decking board is the simplest to work with as they are closet cousin to traditional timber, but still has restrictions where the pilot holes can be placed (decking spacers and pilot hole guides can be purchased). Depending on the product selected screws or nails may be used given the WPC decking boards are pre drilled if not counter sinking, yes pre drill nails. Short cuts may only damage to finish or cost time and money. For example, if screws are not counter sunk a mushrooming effect may occur or a nail gun may blow the board apart.

Hidden Fixing systems are readily available as some WPC decking manufacturers have a groove placed in the side of the boards for a clip system and sell them as an accessory. Other hidden fixing systems may be purchased off the shelf and applied to solid decking boards by creating a groove with a router or biscuit jointer. When reviewing various systems consider if the boards will be held tight for the life of the deck. Does it squeeze the boards together? As the traditional 'T' shape clip can be questionable depending on the time taken when they are installed, but now there are

some excellent shaped clips to secure the board. Initially hidden fasteners were used to allow decking boards to expand and slide along the clip as some products had expansion rates as high as 1mm every 4oC increase in temperature. Adhesives may be required with some hidden fixing systems, thus adding time and effort to complete the project. Therefore, do your homework as there are great systems out there. It is just a matter of finding them to save time and money.

A requirement for all decking products is spacing between each board. This is not just side to side spacing but includes end to end spacing. You may ask why? Side to side spacing (normally 3 or 4mm) give space for air flow to aid ventilation, whilst giving a space for water and debris to pass through. End to end spacing is essential as this gives room for natural expansion to occur. Be sure you read and understand the fixing instructions prior to fixing a board in place.

Warranty

Most warranties are limited to manufacturers' faults over the life of the product. This may include cracking, splitting and dimensional movement and not include fading, installation errors or stains. Therefore, read and fill in the warranty card and advise clients accordingly to avoid headaches in years to come.

Conclusion

WPC decking products are excellent for almost every decking situation (given they are installed correctly) as they come in a range of colours, shapes and sizes, whilst being paint and stain free. They are a low maintenance decking solution for today's high speed world giving the home owner more time to relax and enjoy the area created. So get out and discover the world of WPC decking options available. There are many great web pages and documents you can get your hands on without too much trouble and remember you can never do too much research. 