

WOOD PLASTIC COMPOSITES

©Copyright Cosset Industries Australia Pty Ltd

What are Wood Plastic Composites?

Wood Plastic Composites (WPC) are a group of materials that have been developed and refined over the past 12 years that are now generating high levels of global interest. Over recent years the market has exploded with demand for a new generation of high performance products, with the added benefit that they are manufactured predominantly from post consumer recycled HDPE plastic and timber.

Cosset's EVERTUFF™ and DuraComp™ WPC products represent the new generation, having good mechanical properties, high dimensional stability and can be used to produce complex shapes. They are tough, stable and can be extruded to high dimensional tolerances.



What are the benefits of WPCs?

WPCs can produce the final shape through extrusion processing. This maximizes resource efficiency and gives design flexibility for improved fastening, stiffening, reinforcement, finishing and joining. WPCs are like wood products – but they need no further processing. WPCs are weather, water and mould resistant for outdoor applications where untreated or chemically treated timber products are unsuitable. **WPCs are plastic products with exceptional environmental credential and performance.**

- They are true hybrid materials and combine the best properties of both wood and plastic products.
- The use low cost and plentiful raw materials – wood waste and recycled plastics become assets instead of liabilities.
- They are competitively priced and are competitive with traditional materials.
- They are easily fabricated using traditional wood processing techniques.
- They are available in a broad range of finishes and appearances.



What are the properties of WPCs?

WPCs are true composite materials and have properties of both materials. They have stiffness and strength between those for plastic or wood, but the density is generally higher than either. The properties of WPCs come directly from their structure: they are intimate mixes of wood particles and plastic. The plastic effectively coats / encases the wood particle as a thin layer. The high moisture resistance of WPCs (water absorption of 0.7% compared to 17.2% for pine) is a direct result of this structure. Water can only be absorbed into the exposed sections of wood and is not transmitted across the plastic boundaries. The result is that WPCs are extremely water resistant, have little thickness swell in water and do not suffer from fungal or insect attack. WPCs have:

Cosset's WPCs are manufactured using state of the art equipment.

- Good stiffness and impact resistance.
- Dimensional stability.
- Resistance to rot.
- Excellent thermal properties.
- Very low moisture absorption.

WOOD PLASTIC COMPOSITES

WPCs and the Environment

One of the main reasons for using WPCs is environmental. The environmental pressures on industry in terms of recycling and sustainability are growing daily. There is clear need to extend the life of traditional building materials such as wood. This resource efficient use of materials that are currently seen as waste supports the urgent concept of sustainable development. For users of plastic products there is a need to reduce the dependence on petrochemicals with their rising and cyclical raw material costs. For users of wood products there is a need to improve the recourse efficiency and to recycle the raw materials waste that inevitably occurs. WPCs increase the efficiency of wood usage by up to 40% compared to traditional wood processing.

Further environmental benefits of WPCs include:

- There is negligible waste and any that is produced is reused.
- WPCs contain no toxins or volatile organic compounds.
- WPCs are recyclable and can be reground and reused after their service life.
- WPCs are considered non-hazardous waste and can be disposed of by standard methods.
- The basic material structure of WPC means that leaching from WPCs is nonexistent.

Cosset Wood Plastic Composite Test Data Summary Sheets Available

- Chemical Resistance
- Compressive Strength
- CRF Flame
- Fatigue
- Flexural Strength
- Immersion Flexural Strength
- Heat & Humidity Aging
- Screw Pull Out
- Tensile Strength
- Coefficient of Thermal Expansion
- Water Absorption
- EverDeck Flexural Strength
- EverDeck Slip
- EverDeck Commercial Flexural Strength
- EverDeck Commercial Slip

Complete test details available by request. Specifications or results are likely to change due to continual improvement. All tests performed by NATA accredited laboratories.

Working with EVERTUFF™ & DuraComp™ Recycled Wood Plastic Composites

Cosset's Recycled Wood Plastic Composites are made up mostly of recycled plastic and recycled timber. Given its timber content, EVERTUFF™ & DuraComp™ can be cut, drilled, planed and routed with the same bits, blades and routing tools as timber. When cutting with a circular saw, try to use a blade with as few teeth per inch as possible. A hand saw can also be used. Cosset recommends that when using power tools always wear eye and hearing protection and ensure that all tools are sharp at time of use.

Wood Plastic Composite Fixings for EVERTUFF™ & DuraComp™

When fixing Cosset's WPC products to timber or another WPC section, Cosset recommends to use only the Simpson Strongtie® Composi-Lok™ screw. These are a screw designed to be used only with WPCs and when used ensure that the best fix is achieved. Composi-Lok™ screws also can be installed using the Simpson Strongtie® QuickDrive® installation tool to save time and money. All Composi-Lok™ screws are available through Cosset and its national dealer network. For further information on the Composi-Lok™ fixings contact Cosset National Customer Service on 1800 COSSET (1800 267 738) or visit www.strongtie.com.

Non Slip Coatings for EVERTUFF™ & DuraComp™

Although the surface of Cosset's WPCs are suitable for almost any application as it is, in some cases, be it on mining sites or steep inclines or declines, some organisations require, or just prefer, a more rigid surface. Occupational Health & Safety is top of mind around Australia for all Companies and the importance of non-slip surfaces around worksites is paramount. Cosset offers its customers the option of having a non-slip coating applied to any of our WPC profiles. This coating is available in a number of different non-slip grades and colours and is applied as soon as the product is manufactured.

©Copyright Cosset Industries Australia Pty Ltd