

# EcoTuff™ Test Results

EcoTuff's wood plastic composite material has undergone rigorous testing in National Association of Testing Authorities (NATA) laboratories in the following categories:

- Dry flexural testing - how much the product bends before breaking when dry
- Wet flexural testing - how much the product bends before breaking when wet
- Compression testing - how much the product compresses under strain
- Water absorption - how much moisture the product absorbs
- Chemical resistance - the absorption of chemicals and the effect it has on dry flexural strength
- Screw withdrawal testing - how much force is required to pull a screw vertically outwards
- Tensile testing - the degree to which the product stretches
- Flammability testing - the product's resistance to fire

**Profile tested was a 75 x 45mm. Testing performed on the 75mm depth.**

## Dry Flexural Testing

Loading speed: 30mm/min Support span: 900mm  
**Maximum Flexural Strength: 3.86kN // 393.6kgf**

This test shows that EcoTuff™ products have a very high capacity to flex without breaking. What's more, this capacity actually increases when wet, making them ideal for both dry and marine environments.

## Wet Flexural Testing

Loading speed: 30mm/min Support span: 900mm  
**Maximum Flexural Strength: 3.88kN // 395.6kgf**

## Compression Testing

Test method: ASTM 6108  
**Maximum Stress face: 27.95 MPa**

It takes a large amount of force to dent or damage the surface of an EcoTuff™ product!

## Water Absorption Testing

Test method: ASTM D570  
**Water absorption after 21 days: 4.87%**

EcoTuff™ products absorb very little water when fully submerged, and what water is absorbed actually makes them stronger!

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## Chemical Resistance (28 days' exposure)

Test method: ASTM D543

Chemical	Absorption (%)	Peak Load (kN)
<b>Blank</b>	0.2	24.25
<b>Oil</b>	1.07	23.72
<b>Acid</b>	6.8	22.55
<b>Alkali</b>	28.55	15.3
<b>Chlorine</b>	7.6	22.5
<b>Oxidising</b>	5.39	22.15

EcoTuff™ products are highly resistant to most external chemical influences, and retain their flexural strength particularly well in most conditions.

## Screw Withdrawal Testing

Test method: ASTM D6117

Maximum Force face: 1741 MPa

Few natural forces can exert the amount of force required to remove a screw once it's been screwed into an EcoTuff™ product.

## Tensile Testing

Test method: ASTM D6117

Sample dimensions 49.75 x 44.3 mm

Failure load: 25300N

UTS: 11.5 MPa

Elongation: 1.5%

Essentially, EcoTuff™ products will not stretch!

## Flammability Testing

Test method: AS/ISO 9239.1-2003

Critical Radiant Flux: 1.1kW

Smoke value: 610% min

The combination of recycled plastic and recycled wood makes the material far more resistant to fire than wood or plastic individually.

Complete test details available by request.

All figures indicated in this summary sheet are the average results from multiple test samples

Specifications or results are likely to change due to continual improvement.

All tests performed in a NATA accredited laboratory