

# Technical Specifications

## Test Results Summary

APR's 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.

### DRY FLEXURAL TESTING

Loading speed: 30mm/min Support span: 90mm

Maximum Flexural Strength: 3.86kN // 393.6kgf

### WET FLEXURAL TESTING

Loading speed: 30mm/min Support span: 90mm

Maximum Flexural Strength: 3.88kN // 395.6kgf

*This test shows that APR's composite 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.*

### 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 APR composite product!*

### WATER ABSORPTION TESTING

Test method: ASTM D570

Water absorption after 21 days: 4.87%

*APR's composite products absorb very little water when fully submerged, and what water is absorbed actually makes them stronger!*

### 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 APR composite product.*

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### CHEMICAL RESISTANCE (28 DAYS' EXPOSURE)

Test method: ASTM D543

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

CHEMICAL	ABSORPTION (%)	PEAK LOAD (kN)
Blank	0.20	24.25
Oil	1.07	23.72
Acid	6.80	22.55
Alkali	28.55	15.30
Chlorine	7.60	22.50
Oxidising	5.39	22.15

### 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, APR composite 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.