

Mechanical Properties Data Sheet (MPDS)

This is a compilation of independent test results performed on Integrated Recycling's Envire range of products and collated for ease of use.

Please see our website or contact us for more technical data and analysis.

Date: 18th of October 2010

1. TEST RESULTS FOR MECHANICAL PROPERTIES OF IR PRODUCTS

NYA= Not Yet Available

	Specific Gravity	Density	Ultimate Tensile Strength	Elongation at Break	Flexural Strength	Modulus of Elasticity	Hardness	Screw Pullout Force	Screw Pullout Force	Nail Pullout Force	Nail Pullout Force
	ASTM D 792	ASTM D 792	ASTM D 638	ASTM D 638	ASTM D790	ASTM D 790	ASTM D2240	ASTM D 6177	ASTM D 6178	ASTM D 6179	ASTM D 6180
		(kg/m3)	(Mpa)	(%)	(Mpa)	(MPa)	(Shore A Units)	(Newtons)	(Kgs)	(Newtons)	(Kgs)
PRODUCT TYPE											
Bollards – Round	0.7586	756.7	14.3	2.5	25.2	934	58	3603	368	950	97
Bollards – Square	0.7586	756.7	NYA	NYA	NYA	NYA	58	2815	287	618	63
Round Posts or Poles	0.7586	756.7	9.1	2.7	19.3	609	58	3603	368	950	97

Square Profiles	0.7586	756.7	NYA	NYA	NYA	NYA	58	2815	287	618	63
Rectangular Profiles	0.7586	756.7	15.5	4.6	19.7	829	58	2815	287	618	63
Garden & Tree stakes	0.7586	756.7	6.3	3.2	15.1	420	58	2815	287	618	63
Planks/Decking	0.9859	983.4	15.8	5.8	18.7	537	62	NYA	NYA	NYA	NYA

2. EXPLANATION OF TESTS

General comments:

The tests were conducted by independent NATA certified laboratories Bureau Veritas (Amdel limited) and ALS Laboratory Group. The tests were conducted to the ASTM (American Society for Testing and Materials) methodology and the relevant Australian Standard, where applicable. Testing is an ongoing commitment of Integrated Recycling as it continues to develop and improve its products.

Specific Comments:

Specific Gravity/Density/Hardness: These tests were conducted on a variety of profiles made from the same or virtually the same composite mix, other than the decking profile which is made from a different composite mix and hence shows a different result.

Ultimate Tensile Strength/Elongation at break/Flexural Strength / Modulus of Elasticity: These tests were conducted on three different round profiles (125mm diameter bollard, 75mm diameter pole and 50mm diameter garden post)

The results will vary directly with the diameter of the profile. The results of the narrowest diameter have been used for the garden stakes.

The test for the rectangular profile was conducted on the 70mm x 50mm profile and for the decking on the 100mm x 25mm profile.

Screw and Nail force: The tests were conducted on two profiles (100mm diameter round post and 90mm x 40mm rectangular profile). In the case of the rectangular profile the tests were conducted on both the wide and short sides of the profile. The above results are from the wide side tests.