

DuFLEX® panels are specifically designed to reduce construction time and to optimise structural weight in high performance composite structures. Timeconsuming laminating, coring and vacuum bagging steps normally required to fabricate high performance composites are avoided, and material waste, labour and tooling costs are greatly reduced.

DuFLEX® panels are 2400mm x 1200mm with multiaxial E-fibreglass or carbon fibre skins, laminated with a high performance epoxy resin. Fibre orientation and ply schedules are based on design or engineering specifications to best meet weight targets, stress and impact loads, and other design parameters.

The laminates are finished with peel ply to protect the laminate from contamination and to reduce preparation of the surface prior to secondary bonding or laminating.

Coosa Bluewater cores are a high density, closed -cell polyurethane foam reinforced with woven roving and continuous strand fibreglass. Coosa Bluewater core adds additional flexural strength for demanding applications where structural integrity and /or greater span lengths are appropriate. Bluewater cores have excellent moisture and rot resistance, and are 40 – 60 % lighter than plywood, depending on the density ordered.

Typical applications include refrigeration units, building walls and facades, walls and flooring in industrial high moisture areas, and will meet design demands for public transportation, emergency and utility vehicles, and high load trucks and trailers.

TYPICAL LAMINATE PROPERTIES

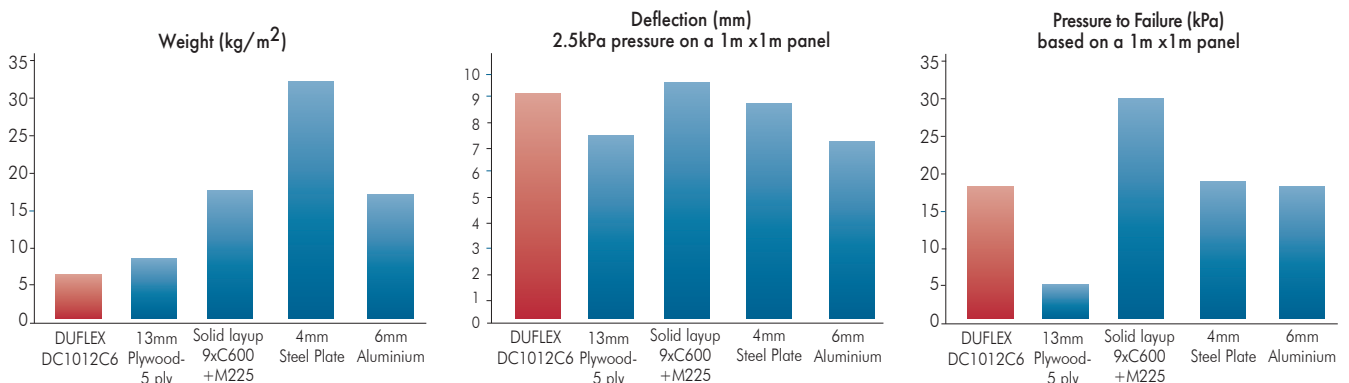
Laminate thickness 0.53mm per 600gm

Fibre Fraction 62-64% weight fraction

	Test Method	Biaxial - Warp (0°)	Biaxial - Fill 90°
Tensile Strength	ASTM D3039	371.9 MPa	327.6 MPa
Tensile Modulus	ASTM D3039	21.27 GPa	18.22 GPa
Compressive Strength	ASTM C-273	293.8 MPa	255.5 MPa
Compressive Modulus	ASTM C-273	21.27 GPa	18.22 GPa

MATERIAL COMPARISONS

	Weight (kg/m ²)	Deflection (mm)	Pressure to Failure(kPa)
DuFLEX Coosa – DC1012C6	6.48	9.4	18
13mm Plywood- 5ply	8.1	7.4	5
Solid Layup 9x C600+M225	16.9	9.5	30
4mm Steel Plate	31.4	8.6	19
6mm Aluminium	16.2	7.1	18



COOSA PROPERTIES - BLUEWATER 20 - 12.7mm			
Nominal Density	(ASTM C-271)	20 lb/ft ³	315 kg/m ³
Compressive Strength	(ASTM C-365)	834 psi	5.75 MPa
Compressive Modulus	(ASTM C-365)	7,050 psi	48.60 MPa
Shear Strength	(ASTM C-273)	463 psi	3.192 MPa
Shear Modulus	(ASTM C-273)	8,432 psi	58.14 MPa
Flexural Strength	(ASTM D-790)	3,693 psi	25.46 MPa
Flexural Modulus	(ASTM D-790)	115,000 psi	792.92 MPa

PROCESSING

Excellent bonding characteristics can be achieved with a variety of marine resins, and the panels can be attached to other materials using screws, staples or adhesives, and the panels can be machined with standard wood working tools.

Dust needs to be removed prior to additional lamination or bonding.

Gloves, dust mask and safety glasses should be worn when cutting Coosa products.

CUTTING

Diamond-coated fiberglass tooling is recommended for best tool life. The best edge finish is achieved with circular saws running aluminium cutting blades, however blade life is greatly reduced.

KITS

ATL Composites offers in-house CAD and CNC cutting services, and can produce pre-fabricated DuFLEX kits from electronic design files.

Example - Order code for a 12mm panel with 1 layer of 600grm biaxial is DC1012C6 – Alternative core thicknesses and skin laminates available on request.

Sheet size – 1200 x 2400mm

STORAGE

DuFLEX® panels should be stored flat, out of direct sunlight, and kept dry and clean. Panels supplied with fibreglass skins have peel-ply on the surface, which should be left in place as long as possible, to protect them from surface contamination.

ATL Composites reserves the right to alter specifications without prior notice. Weight may vary due to variations in core density.

NOTE Our products are intended for sole to industrial and commercial customers. We request that customers inspect and test our products before use and satisfy themselves as to contents and suitability. Nothing herein shall constitute a warranty, express or implied, including any warranty or merchantability or fitness, nor is protection from law or patent to be inferred. All patent rights are reserved. The exclusive remedy for all proven claims is replacement of our materials and in no event shall we be liable for special or consequential damages. 11/06/20

