

DRY REINFORCEMENT / TENSILE <small>(source: CIRIMAT)</small>	YOUNG MODULUS (GPa)	ULTIMATE STRENGTH (MPa)	DENSITY (kg/dm ³)
RIBBON 81.108.03.03	13	230 - 280	1,35
	10	200 - 225	0,9
FIBRE	33	400 - 600	1,55

MASS REDUCTION X2 VS GLASS

UD / RTM6 1F VIBRATION <small>(source: MECANO ID)</small>	REINFORCEMENT VOLUME FRACTION	DAMPING Q FACTOR	DAMPING COEFF. $2 \times \xi$
CARBON HIGH – MODULE	60%	80	1,3%
S-GLASS	60%	60	1,7%
BAMBOO 101.100.03.03	70%	26	3,8%

DAMPING x3 Vs CARBON (note: Carbon resonance frequencies = bamboo damping peaks)

WATER AGEING <small>(source: IFREMER)</small>	IMMERSION (DAYS)	Tensile PROPERTY LOSS AFTER IMMERSION	
		YOUNG MODULUS	ULTIMATE STRENGTH
FLAX / EPOXY	30	-58%	-42%
BAMBOO / EPOXY (OPEN EDGES)	100	-21%	-30%

LIMITED LOSS IN PROPERTIES • SIGNIFICANT PROPERTIES RECOVERY AFTER DRYING
(note: **no swelling** of the reinforcement when taking in water)

LIFE CYCLE ASSESSMENT (LCA) <small>(source EXPLEO)</small>	FLAX	GLASS	BAMBOO
Abiotic resources depletion (kg Sb eq./kg)	1,70E-03	1,90E-02	7,32E-07
Acidification (kg SO ₂ eq./kg)	2,20E-03	1,60E-02	1,49E-03
Eutrophication Potential (kg PO ₄ eq./kg)	1,40E-03	1,20E-03	2,05E-04
Global warming potentials (kg CO ₂ eq/kg)	-1,40E+00	2,65E+00	-2,10E+00
Ozone Depletion Potential (kg CFC-11 eq [kg])	2,40E-08	2,00E-07	3,99E-11
Human Toxicity (kg 1 4-DB eq l/kg)	2,15E-01	9,10E+00	6,94E-02
Freshwater aquatic ecotoxicity (kg 1.4-DB eq/kg)	5,90E-02	1,70E-01	1,05E-02
Photochemical oxidation (kg C ₂ H ₄ eq/kg)	7,30E-05	6,00E-04	5,34E-05
Terrestrial ecotoxicity (kg 1 4-DB eq/kg)	8,70E-03	4,20E-02	3,59E-04

BAMBOO ABSORBE CO₂ ≈ GLASS EMISSIONS • X1,5 CO₂ ABSORBED BY FLAX
AVERAGE GAIN OTHER POLLUTIONS : X100 VS GLASS • X3,5 VS FLAX