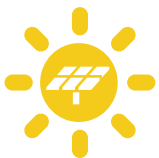


2020
LIFESPAN™ ARCHITECTURAL BEAMS
TECHNICAL DATA SHEET
Eva-Last®



MADE WITH SOLAR ENERGY

www.eva-last.co.za

Identification

Date of Publication:
 05/06/2020

Product name: Eva-last® Lifespan™ architectural beams.

Product description: Tri-extruded aluminium 6063-T5 core and cellulose-polymer composite cap.

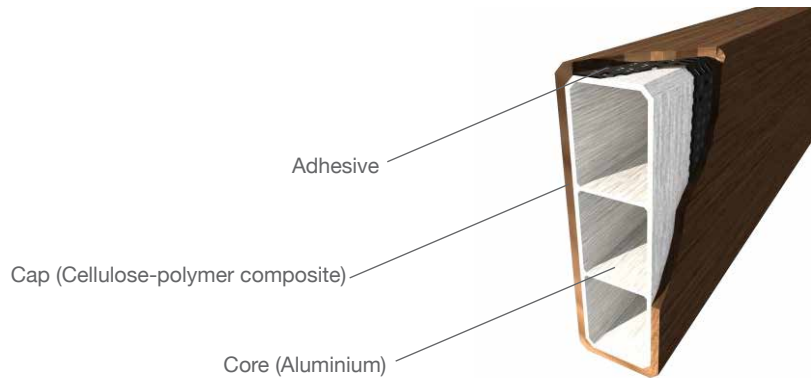
Product Use: As an architectural or decorative beam used for screens, shutters, facades, gazebos and pergolas or similar structures and applications.

Manufacturers information: Eva-last® Distributors, Room 1203, 12/F Tower 3, 33 Canton road, Tsimshatsui, Hongkong, China.

Contact Number: +27 10 593 9220

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Composition

Cap – Cellulose-polymer composite					
Substance name	Approximate weight %	CAS Number	Agency	Exposure limit (mg/m ³)	Comment
High density polyethylene (HDPE)	35 – 40	9002-99-4	N/A	N/A	Thermoplastic
Bamboo fibre	55 – 60	N/A	OSHA OSHA ACGIH ACGIH	15 5 3 10	Total dust (PEL-TWA) Respiratory dust fraction (PEL-TWA) Respiratory dust fraction (ACGIH) Inhabitable particles (ACGIH)
Additional additives - Anti-mould agents, Coupling agents, Anti-UV agents, Colour pigments, etc.					Information withheld

Adhesive – Co-polymer resin					
Substance name	Approximate weight %	CAS Number	Agency	Exposure limit (mg/m ³)	Comment
Adhesive - Co-polymer resin.					Information withheld

Core - Aluminium alloy 6063-T5					
Substance name	Approximate weight %	CAS Number	Agency	Exposure limit (mg/m ³)	Comment
Aluminium (Al)	≤ 97.50	7429-90-5	OSHA OSHA ACGIH ACGIH	15 35 15 5	Total dust (PNOR) Respirable fraction (PNOR) Metal dust Welding fume
Chromium (Cr)	≤ 0.10	7440 - 47 -3	OSHA ACGIH	1 0.5	(Cr) (Cr)
Copper (Cu)	≤ 0.10	7440-50-8	OSHA OSHA ACGIH ACGIH	0.1 1 0.2 1	Fume (as Cu) Dusts & mists (as Cu) Fume Dusts & mists (as Cu)
Iron (Fe)	≤ 0.35	7439-89-6	OSHA ACGIH	10 5	Iron oxide fume Iron oxide dust & fume
Manganese (Mn)	0.45 – 0.90	7439-96-5	OSHA ACGIH	5 0.2	Fume & Mn compounds Fume
Magnesium (Mg)	≤ 0.10	7439-95-4	OSHA ACGIH	15 10	Fume Fume
Silicon (Si)	0.2 – 0.60	7440-21-3	OSHA OSHA ACGIH	15 5 10	Total dust Respirable fraction
Titanium (Ti)	≤ 0.10	7440 - 32 -6	OSHA ACGIH	15 10	(TiO ₂) (TiO ₂)
Zinc (Zn)	≤ 0.10	7440-66-6	OSHA OSHA OSHA ACGIH ACGIH ACGIH	5 15 5 5 10 10	Fume Total dust Respirable fraction Fume STEL Dust
Other	≤ 0.20				

Material properties

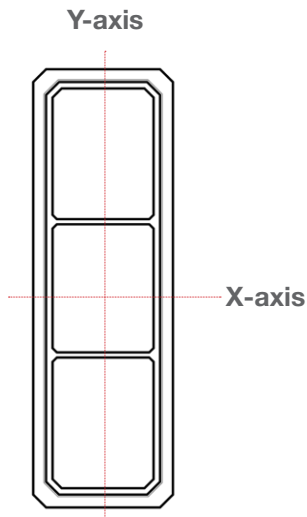
The aluminium core provides all the structural strength to the beam. The beam should therefore be considered as an aluminium beam, when considering material properties during design.

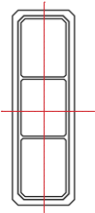
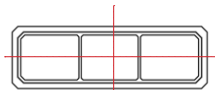
Core – Aluminium 6063 – T5		
Property	Value	Note
Tensile strength (MPa)	75.83	
Tensile modulus (GPa)	41.54	
Modulus of elasticity MOE (MPa)	64.47	
Linear thermal expansion coefficient (mm/m/°C ⁻¹)	23.4 x 10 ⁻⁶	
Bulk density (kg/m ³)	2 710	

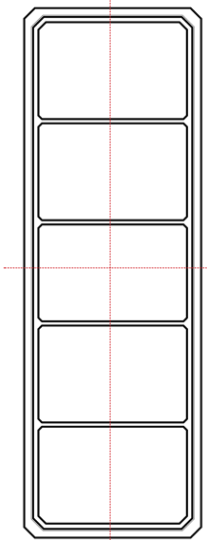
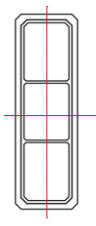
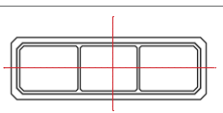
Cap Material - Cellulose – polymer composite		
Property	Value	Note
Linear thermal expansion coefficient (mm/m/°C ⁻¹)	40.1 x 10 ⁻⁶	
Bulk density (kg/m ³)	1 390	

Surface properties (including cap and adhesive)		
Property	Value	Note
Shore hardness (HD)	75.00	
Scratch resistance (N)	6.90	
Delamination resistance (MPa)	2.21	

Weathering (including cap and adhesive)			
Physical properties		Value	Note
Water absorption (%)		0.82	Change in mass over 180 hours
Swelling (%)	thickness	0.28	Change in dimension over 180 hours
	width	0.05	
	length	- 0.74	
UV resistance	ΔE	3.00	Perceived change in colour over 1 000 Hours

Geometrical properties			
Property	Value	Note	
Width (mm)	102.5		102.5 x 32.5 mm beam
Thickness (mm)	32.5		
Weight (kg/m)	2.1		
Aluminium 6063 – T5 core section properties			
Area (mm ²)	411.4		
Moment of inertia – I _x (mm ⁴)	50 039		
Moment of inertia – I _y (mm ⁴)	377 302		
Section modulus – Z _x (mm ³)	3 777		
Section modulus – Z _y (mm ³)	7 820		
Centroid – x (mm)	16.25	From the outer edge of the core to the x-axis centroid	
Centroid – y (mm)	51.25	From the outer edge of the core to the y-axis centroid	

Flexural load test results				
Profile orientation	Span (mm)	Initial failure load / yield (N)	Ultimate failure load (N)	Test method
Vertical 	1 000	6 462	9 462	ASTMD790
Horizontal 	500	6 110	8 197	ASTMD790

Geometrical properties				
Property	Value	Note	150.0 x 50.0 mm beam	
Width (mm)	150.0			
Thickness (mm)	50.0			
Weight (kg/m)	3.3			
Aluminium 6063 – T5 core section properties				
Area (mm ²)	761.6			
Moment of inertia – I _x (mm ⁴)	252 817			
Moment of inertia – I _y (mm ⁴)	1 578 215			
Section modulus – Z _x (mm ³)	21 768			
Section modulus – Z _y (mm ³)	11 236			
Centroid – x (mm)	22.5	From the outer edge of the core to the x-axis centroid		
Centroid – y (mm)	72.5	From the outer edge of the core to the y-axis centroid		
Flexural load test results				
Profile orientation	Span (mm)	Initial failure load / yield (N)	Ultimate failure load (N)	Test method
Vertical 	1 000	11 790	17 466	ASTM - D790
Horizontal 	500	16 750	22 877	ASTM - D790

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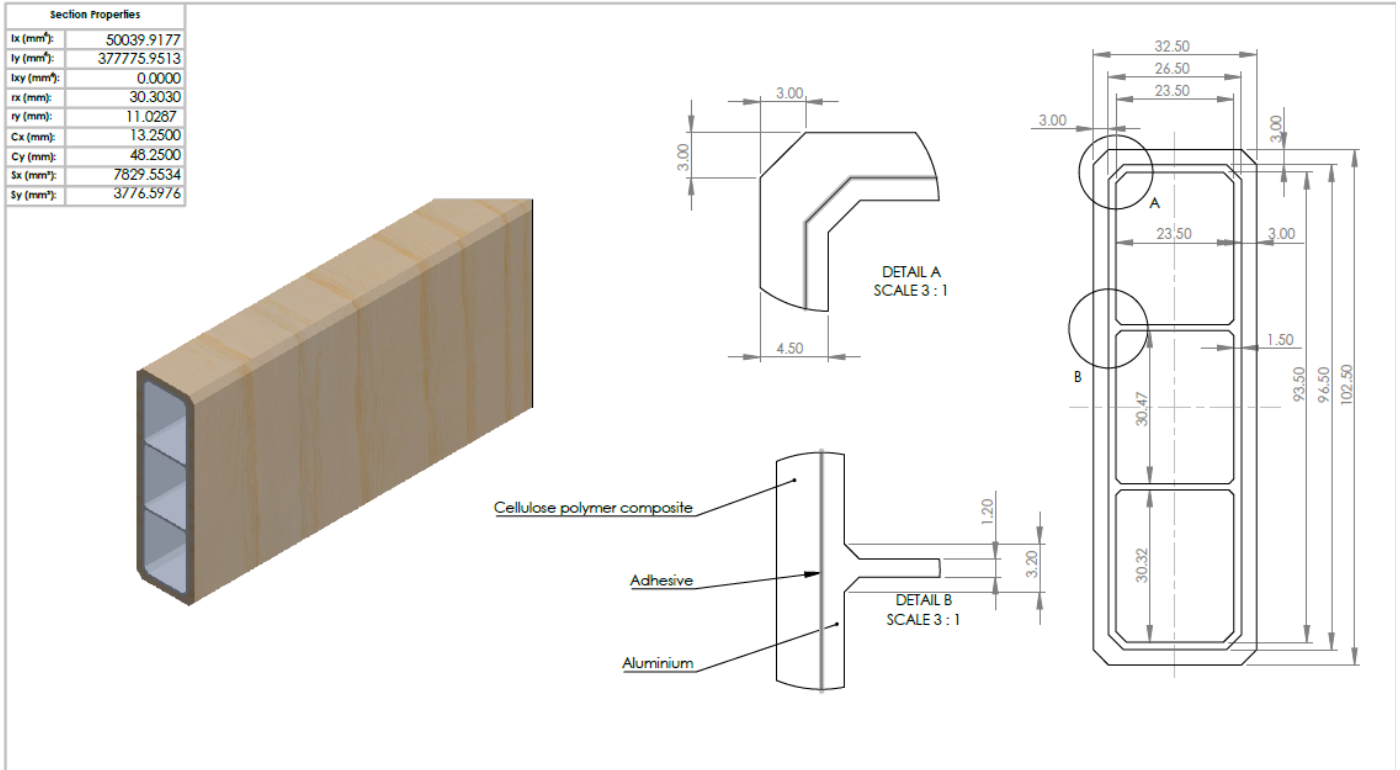
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Appendix A



PROFILE TOLERANCE		PROFILE PROPERTIES			SHOP NOTES:		Eva-last® distributors	
DIMENSION	TOLERANCE	PART REFERENCE:	Aluminium skeleton	Cellulose polymer composite	MASS:	FINISH:	TITLE:	
> 120 mm	± 0.5 mm	MATERIAL:	6063 - T5	Bamboo and HDPE	Vary - Typical length 5.8 m		Architectural beam	
30 - 120 mm	± 0.3 mm	AREA (mm ²):	411.40	774.00	Application dependant		Tri-Extruded beam	
3 - 6 mm	± 0.2 mm	Perimeter(mm):			COLOURS: Vary		102.5 x 32.5	
< 3 mm	± 0.1 mm	DENSITY(g/mm ³):			SCALE: NTS		DWG NO. 2020-04-30 - Architectural beams	A4
Typical lengths : 5.8 m	+10.0 mm	VOLUME (mm ³):			UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS		DRAWN BY:	SHEET 1 OF 3
							DATE DRAWN:	REV

Appendix A

