Apex

TECHNICAL DATA SHEET

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Contents

Apex reinforce foamed mineral -PVC decking.

Apex sets the standard for the most natural-looking composite decking. Its ultra-lightweight foamed bamboo-PVC core makes for easy installation and workability. Apex is slip resistant, and exceptionally low maintenance, requiring only the most basic of cleaning for optimal longevity. Its protective cap is made from a resilient acrylic polymer coating, offering long-term fade, scratch, and stain resistance. Apex provides long-term decay and weather resistance by resisting biodegradation, insects, moisture, and the elements. Apex is also an environmentally friendly alternative to timber, with holistically sustainable manufacturing and use of raw materials.

Product name: Apex foamed mineral–PVC decking
Product application: Primarily used in decking, fascia, and similar applications
Material: Mineral and PVC composite
Material description: Co-extruded profiles with an acrylic cap around a foamed mineral-polymer composite core.

Document layout

Eva-Last strives to evaluate their products in depth and present the technical and safety information available in a manner that assists with the application thereof. If additional data or information is required, please do not hesitate to contact us at **rad@eva-last.com.**

In an attempt to simplify the information, similar data is loosely grouped into the categories summarised below. This document is ordered according to these categories and the applicable page number for the start of each section is captured in the Table of contents.

- Material composition
- Physical properties
- Mechanical properties
- Thermal properties
- Fire reaction properties
- Weathering properties
- Surface properties

The Material compositions section captures a summary of the product make-up from the Material Safety Data Sheet (MSDS). A link to the MSDS is provided for additional detail. Summaries of chemical compliance data available are also collected in this section.

The Physical properties section provides a summary of available profiles and general material properties such as density, water absorption, etc. Additional profile information can be obtained from drawings in the appropriate Appendix. Where possible, material properties that can be assigned to more specific categories are moved to the relevant sections.

The Mechanical properties section captures data related to the product's reaction to various load conditions. The section is broadly assembled into the below categories. Additional profile and sectional information are captured by the drawings in the appropriate Appendix.

- Material specific mechanical properties
- Profile specific mechanical properties
- Sectional properties

Product properties such as the expansion coefficient, thermal resistance, etc. are captured, where applicable, in the Thermal properties section.

Information regarding the product's reaction to fire is captured in the Fire Reaction properties section.

Test data relating to the acoustic performance of the product, where applicable, is summarised in the Acoustic properties section.

Information on the product's resistance to mold, termites, etc. is collected in the biodegradation properties section.

The Surface properties section summarises information regarding the finish or texture of the product. Test data on aspects such as slip resistance (where applicable) is included in this section.

Where the products form part of a system and, as a result, utilise other components, an additional section to capture useful data regarding these components is added to the document.

Where information is not yet available, the section is simply omitted. In the cases where information can be substituted or supplemented with alternative data (based on similar compositions, etc.), an attempt to do so is made. Where this is the case, it is highlighted. Please make use of the data accordingly. For any additional information regarding this, please feel free to contact **rad@eva-last.com**.

Always ensure the product, and application thereof is suitable, rational, and compliant with any applicable regulations or standards. Wherever necessary, consult a suitably qualified professional. For information about the installation and use of the product, please see the applicable Installation Guide (IG). For additional material safety and handling information, please refer to the applicable MSDS. For any further information, please contact **rad@eva-last.com**.

Material composition

The following table is a simplified material composition for the Apex Dual tone material technology. Apex Single Tone may have slight composition differences. For more information regarding the composition, safety, and handling of the material, please see the Apex MSDS. Please also refer to the safety section and the Safe Working Procedure (SWP) in the IG for additional information related to the safe use of these products. To confirm which substances are compatible, or incompatible, with the product, please refer to **Appendix B**.

Component	Substance	Mass
Core	Poly chloroethylene (PVC)	51%
	Calcium carbonate	30%
Cap	Acrylonitrile styrene acrylate copolymer (ASA)	10%
Additional additives	Other	9%

Material compliance

Apex Dual tone has been assessed to determine whether it contains Substances of Very High Concern (SVHC) that may be classified as carcinogenic, mutagenic, or toxic to reproduction of humans or animals, or have a persistent, cumulative, or negative impact on the environment in accordance with European REACH (Registration, evaluation, and authorization of chemicals) regulations. It is assumed that Apex Single Tone shares these same compliance standards.

Compliance report	Result	Issue date	Compliance body	Information
SVHC	Pass	2019-06	EU REACH	Of the 197 substances evaluated, non-have been detected. SVHC concentration require detection levels of less than 0.05% of the whole product. See this **link** for the full list of substances.

Physical properties

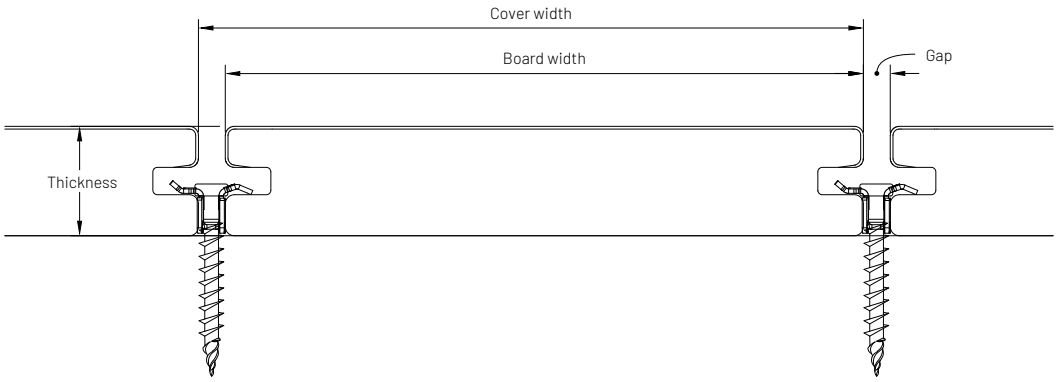
General material properties

Typical properties of the Apex material technology are captured below as an indication of the expected behaviour of the Apex material.

Properties	Results	Test method	Information
Density	650 to 750 kg/m^2 (40.58 to 46.82 lb/ft^3)	ASTM D2395	
Moisture content	0.35%	ASTM D4442-15	Tested according to International Code Council, Evaluation Service (ICC-ES) AC 174 requirements by an independent third-party laboratory. Results of the issued Code Compliance Research Report (CCRR) are captured **here**. Results assumed to be applicable to all Apex single and dual tone profiles .
Water absorption (Mass)	1.12%	ASTM D7031-11-5.19	
Water absorption (Dimensional)	0.09%	ASTM D1037-12	

Profile properties

The following table is a summary of the currently available profiles, please see **Appendix A** for profile drawings.



Profile ID	Cap	Board width (mm)	Thickness (mm)	Mass (kg/m)	Cover width (mm)	Coverage (m/m^2)	Coverage mass (kg/m^2)
STPVB101	Single tone	140 (5.51)	24 (0.95)	2.5 (1.68)	146 (5.75)	6.8 (2.07)	17.0 (3.48)
STPVB102	Single tone	140 (5.51)	24 (0.95)	2.5 (1.68)	146 (5.75)	6.8 (2.07)	17.0 (3.48)
STPVB103	Single tone	140 (5.51)	24 (0.95)	2.5 (1.68)	146 (5.75)	6.8 (2.07)	17.0 (3.48)
STTHM116	Dual tone	190 (7.48)	24 (0.95)	3.4 (2.29)	196 (7.72)	5.1 (1.56)	17.3 (3.54)
STTHM106	Dual tone	150 (5.91)	12 (0.47)	1.4 (0.94)	156 (6.14)	6.4 (1.95)	9.0 (1.84)
STTHM111	Dual tone	184 (7.25)	14 (0.55)	1.9 (1.28)	190 (7.48)	5.3 (1.62)	10.07 (2.06)
STTHM112	Dual tone	285 (11.22)	16 (0.63)	3.4 (2.29)	291 (11.46)	3.4 (1.04)	11.56 (2.37)
STPVB104	N/A	30 (1.18)	40 (1.58)	0.9 (0.61)	N/a	N/a	N/a

(1) Coverage width = Board width + an assumed typical gap of 6 mm.
(2) Coverage = 1000/Coverage width
(3) Coverage = Coverage x mass per meter.

Mechanical properties

Material specific mechanical properties

All information within this table is currently based on internal laboratory results of Apex dual tone.

Properties	Results	Test method	Information
Abrasion resistance	116 mg/c (0.004092 oz/c) (1 000 cycles)	ASTM D4060	An abrasive wheel carrying a 1 kg (2.2 lb) load and rotating at 60 rotations a minute was applied to the surface of the profile. The product of the abrasion was then weighed after 1 000 rotations.
Hardness Shore D	82	Shore D	A standardised test to determine the depth of penetration of a specific Thermal property's indenter. Results greater than 60 fall under the category "Extra hard".
Modulus of Elasticity (MOE)	1 756 to 2 068 MPa (254 620 to 299 860 lbf/in^2)	GB/T 17657	As the MOE can be considered as a material property, the information has been provided as a summary of the flexural performance tests below. The MOE can be dependent on the profile and/or span.

Profile flexural performance testing

Flexural properties of polymer composites can be influenced by the profile geometry and/or span. Typical properties of the Apex material technology are captured below based on internal test results as an indication of the expected behaviour of the products.

Properties	Span (mm)	Ultimate Load (kN)	Flexural Strength MOR (MPa)	Flexural stiffness MOE (MPa)	Test method	Information
STTHM102 (Half cap) Square edge profile	304.8 (12)	7.7 (1 730.96)	28.1 (4 074.5)	1 736.6 (251 807)	ASTM D7032	Span / Load rating 304.8 mm / 4.7 kN/m^2 (12" / 98.16 psf)
STTHM103 (Half cap) Grooved profile	304.8 (12)	7.5 (1 686)	28.8 (4 176)	1 798.9 (260 840.5)		

Stair tread performance

The following profiles were tested in a stair tread application. The application requires that the profiles be tested against point loads over a specified span.

Properties	Concentrated loads - Deflection under 1.35 kN load (mm) (in)	Concentrated loads - Ultimate load (kN) (lbf)	Span (mm) (in)	Test method	Information
STTHM102	2.6 (0.10)	5.9 (1 326.32)	304.8 (12)	ASTM D7032 – 17, ASTM D2565, and ASTM D790.	Profiles were tested to confirm compliance with ICC-ES, AC 174, flexural properties in a stair tread application. See the CCR report, **here**.

Creep recovery

The following table provides details regarding the profiles behaviour when exposed to long term loading and the ability to recover to its previous state.

Profile	Average recovery	Requirement	Requirement	Class	Note
STTHM102	Average recovery	96%	> 75%	Pass	A 9.5 kN/m^2 load applied to the profiles for 24 hours. The profiles were then allowed to recover for 24 hours. The deflection was monitored before, during loading, immediately after loading and after a rest period.
	Total deflection	0.8 mm (0.03")	3.2 mm (0.13")		
	Maximum allowable unrecoverable deflection	0.001mm (0.001")	1.6mm (0.06")		

Impact of weathering (material factor estimate)

Material properties can vary as a result of long-term weathering. To estimate this impact on the material's flexural properties, the product is subjected to various weathering effects and the performance with and without weathering is compared. The overall end-use adjustment factor is selected based on the weathering effect that has the most impact on the material.

Properties	Flexural strength (%)	Flexural stiffness (%)	Adjustment factor	Test method	Information
High temperature effect	18%	24%	0.76	ASTM D7032 – 17, ASTM D2565, and ASTM D790.	To confirm compliance with ICC-ES AC 174, Apex decking profiles were evaluated by an independent third-party laboratory. The profiles were tested at a span of 12 in or 304.8 mm. The results of the issued CCRR can be found **here**.
Low temperature effect	-26%	-14%	1.00		
Moisture effect	-3%	4%	0.96		
UV resistance	-6%	1%	1.00		
Freeze-thaw resistance	1%	13%	0.97		
Overall end-use adjustment factor			0.74		

Mechanical fastener testing

Fastener withdrawal tests were performed on a typical Half capped apex square edge decking installation, top fixing STTHM102 profile to a frame with joists at spans of 304.8 mm using composite deck screws, 30 mm from any edge of the profile, with a 6 mm gap between each board.

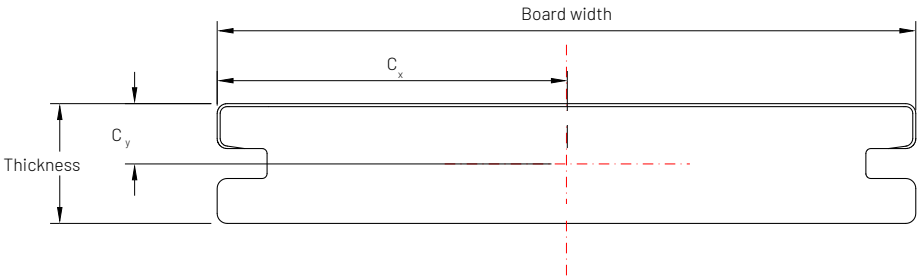
Board	Application details	Fastener details	Fastener withdrawal	
			Holding capacity (Safety factor of 3.0) (kN)	Note
STTHM102	Timber application	Composite deck screw - top fixed - M5.0 x 63 mm	0.6 (134.88)	Based on complete fastener withdrawal.

Uplift tests were performed on Half capped Apex decking installation. Where STTHM102 were top fixed at 30 mm from any edge and STTHM103 were fastened with hidden fasteners and edge boards top fixed, Fastened to the frame while joists at spans of 304.8 mm.

Board	Application details	Fastener details	Wind uplift		
			Ultimate uplift load	Wind upload resistance	Note
			(kN/m²)(psf)	(kN/m²)(psf)	
STTHM102	Metal application	Composite deck screw - top fixed - M4.8 x 45 mm	22.5 (469.91)	7.2 (150.37)	The model of failure was based on Clip deformation as the boards were blown off.
	Timber application	Composite deck screw - top fixed - M5.0 x 63 mm	22.5 (469.91)	7.2 (150.37)	
STTHM103	Timber application	Hidden deck fastener S9 - M4.2 x 40 mm and clip	22.1 (461.56)	7.2 (150.37)	
	Metal application	Hidden deck fastener S9 - M4.2 x 40 mm and clip	22.1 (461.56)	7.2 (150.37)	

Sectional properties

The following table provides a sectional property summary of the currently available Apex profiles. Please see **Appendix A** for profile drawings and further information.



Profile ID	Profile properties				Moments of inertia		Centroid		Elastic sectional modulus	
	Cap	Width (mm) (in)	Thickness (mm) (in)	Area (mm²) (in²)	I_x (mm⁴) (in⁴)	I_y (mm⁴) (in⁴)	C_x (mm) (in)	C_y (mm) (in)	S_x (mm) (in)	S_y (mm) (in)
STPVB101	Single tone	140.0 (5.51)	24.0 (0.95)	3 224 (5)	159 180 (0.38)	4 900 711 (11.77)	70.0 (2.76)	12.0 (0.47)	13 274 (0.81)	70 026 (4.27)
STPVB102	Single tone	140.0 (5.51)	24.0 (0.95)	3 346 (5.19)	159 574 (0.38)	5 422 232 (13.03)	70.0 (2.76)	12.0 (0.47)	13 298 (0.81)	77 461 (4.73)
STPVB103	Single tone	140.0 (5.51)	24.0 (0.95)	3 224 (5)	159 180 (0.38)	4 900 711 (11.77)	70.0 (2.76)	12.0 (0.47)	13 274 (0.81)	70 026 (4.27)
STTHM116	Dual tone	190.0 (7.48)	24.0 (0.95)	4 434 (6.87)	218 025 (0.52)	12 689 702 (30.49)	95.0 (3.74)	12.0 (0.47)	18 169 (1.11)	133 598 (8.15)
STTHM106	Dual tone	150.0 (5.91)	12.0 (0.47)	1 786 (2.77)	21 233 (0.05)	3 299 379 (7.93)	75.0 (2.95)	6.0 (0.24)	3 539 (0.22)	43 996 (2.69)
STTHM111	Dual tone	184.0 (7.25)	14.0 (0.55)	2 562 (3.97)	41 554 (0.1)	7 153 468 (17.19)	92.0 (3.62)	7.0 (0.28)	5 943 (0.36)	77 762 (4.75)
STTHM112	Dual tone	285.0 (11.22)	16.0 (0.63)	4 546 (7.05)	96 577 (0.23)	30 589 396 (73.49)	142.5 (5.61)	8.0 (0.32)	12 084 (0.74)	214 674 (13.1)
STPVB104	N/A	30.0 (1.18)	40.0 (1.58)	986 (1.53)	151 142 (0.36)	86 691 (0.21)	15.0 (0.59)	20.0 (0.79)	7 539 (0.46)	5 779 (0.35)

Thermal properties

Typical properties of the Apex material technology are captured below as an indication of the expected behaviour of the Apex products.

Properties	Results	Test method	Information
Coefficient of thermal expansion (CTE)	46.2 x 10-6 mm/ mm.°C	ASTM D696-16	An expansion coefficient was determined for temperatures ranging between –30°C and 30°C. The results of the issued CCRR can be found **here**.

Fire Reaction properties

Typical fire reaction properties of Apex single cap and Apex dual tone material technologies are captured below.

Apex single tone

Standard	Properties	Result	Requirement	Test Method	Information
EN 13501	Critical heat flux	11 kW/m^2	Greater than 8.0 kW/m^2	EN 9239 and ISO 11925	Test was conducted on Apex material in a decking application. Profile STPVB103 was tested with a single cap layer. The report can be found **here**.
	Smoke production	254.0%.min	Less than 750%.min		
	Flame spread (Fs)	Yes	Less than 150 mm in 20 seconds.		
	Class	Bfl – s1			

Apex double tone

Standard	Properties	Result	Requirement	Test Method	Information
ICC-ES AC 174	Flame spread index (FSI)	35	Less than 200	ASTM E84	Test was conducted on Apex deck boards with a dual cap technology. The results of which can be located within the issued CCR report, **here**.
	Smoke development index	1 300	Less than 450		

Standard	Properties		Result	Requirement	Test Method	Information
EN 13501	Smoke production		728%.min	Less than 750%.min	EN 9239 and ISO 11925	Test was conducted on Apex material in a decking application. Dual cap technology was tested. Report can be found, **here**.
	Flame spread (Fs)	10 min	500 mm	Less than 150 mm in 20 seconds.		
		20 min	660 mm			
		30 min	760 mm			
	Critical heat flux		1.8 kW/m^2	Greater than 3.0 kW/m^2		
	Heat flux (HF)	10 min	3.8 kW/m^2			
		20 min	2.4 kW/m^2			
		30 min	1.8 kW/m^2			
	Maximum light attenuation		92%			
	Class		Efl – s1			

Standard	Properties	Result	Requirement	Test Method	Information
WUI 13501	Effective net peak release rate	147.8 kW/m^2	269 kW/m^2	SFM 12-7A-4A Decking	Effective net peak heat release rate of less than or equal to 269 kW/m^2.
	Sustained flaming	Pass	40 min		Sustained flaming or glowing combustion of any kind of at the conclusion of the 400-minute observation period was not present.
	Absence of falling particles	Pass	No falling particles		Absence of falling particles that are still burning when reaching the burner or floor.
	Classification	Pass			STTHM103 Grooved, Half capped profile. Link can be found, **here**.

Weathering

Most materials are susceptible to weathering. The environment, and factors such as Ultraviolet (UV) light exposure, oxidation and contact with organisms (termites, mold, etc.) to which the materials are exposed will influence the rate of deterioration. The impact of weathering on the flexural performance (material factor estimate) of the products is captured in the Mechanical properties section above.

Colour fade

Weathering over time can result in a colour change of the material. ΔE is a common form of measurement for colour fade. The ΔE denotes the colour difference between an original sample and a tested sample after different levels of exposure to UV light (and potentially other weathering effects). ΔE is measured on a scale of 1 to 100 and attempts to provide a simple metric of how the human eye perceives colour change. Both 'light' and 'dark' colours are tested to provide an indication of the range of performance of the product.

Standard	Colour Reference	ΔE	Grey scale	Test method	Information
ICC-ES AC 174	Arctic Birch (CG005)	1.3	4	ASTM G155-13 4 000 Hours	Change perceptible through close observation. As part of ICC-ES AC 174 requirements. Apex dual tone was tested. It is assumed that Apex single tone would have similar results. The results of the issued CCRR can be found **here**.
	Brazilian Teak (CB010)	1.1	Not determined	ASTM G154-7 3 000 Hours	Change perceptible through close observation.
	Himalayan Cedar (CL014)	1.72	Not determined		Change perceptible through close observation.
	Hawaiian Walnut (CB013)	2.26	Not determined		Change perceptible at a glance.

Biodegradation

Materials exposed to organisms such as termites or mould can degrade as a result.

Decay resistance

Mold resistance tests are not required for products without significant cellulose materials within the composition.

Termite resistance

Termite resistance tests are not required for products without significant cellulose materials within the composition.

Surface properties

Slip resistance.

Slip resistance refers to a surfaces ability to prevent people from slipping or losing their footing. There are various methods used to measure slip resistance. These tests provide a measurement of slip resistance that can be used to compare different flooring materials. Slip resistance is influenced by factors such as the material and its surface, the angle of incline, the type of shoe being worn, and the presence of moisture or multiple contaminants.

Finish	SRV	Class	Test method	Information
L – Longitudinal orientation	62.0	P5	AS 4586 - A	Apex single tone test results. Wet pendulum test with slider 55.
	0.95	D1	AS 4586 – B	Apex single tone test results. Dry friction floor test.
	34.0	C	AS 4586 – C	Apex single tone test results.
	26.4	R11	AS 4586 – D	Apex single tone test results.
L – Longitudinal orientation	47.0	P5	AS 4586 - A	Apex Dual Tone test results, wet pendulum test with slider 55.

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Contact information
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Appendix A
Profiles

Profile properties	
Product code	**STPVB101**
Sectional area (mm^2)	3 224
Approximate mass (kg/m)	2.4

Sectional properties	
$I_x (mm^4)$	159 180
$I_y (mm^4)$	4 900 711
$C_x (mm)$	70.0
$C_y (mm)$	12.0
$S_x (mm^3)$	13 274
$S_y (mm^3)$	70 026

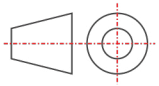
Drawing title

STPVB101 - Decking 140 x 24

File name

2022-05-17 - Apex Technical data sheet

File details



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Unless otherwise specified all dimensions are in millimeters.

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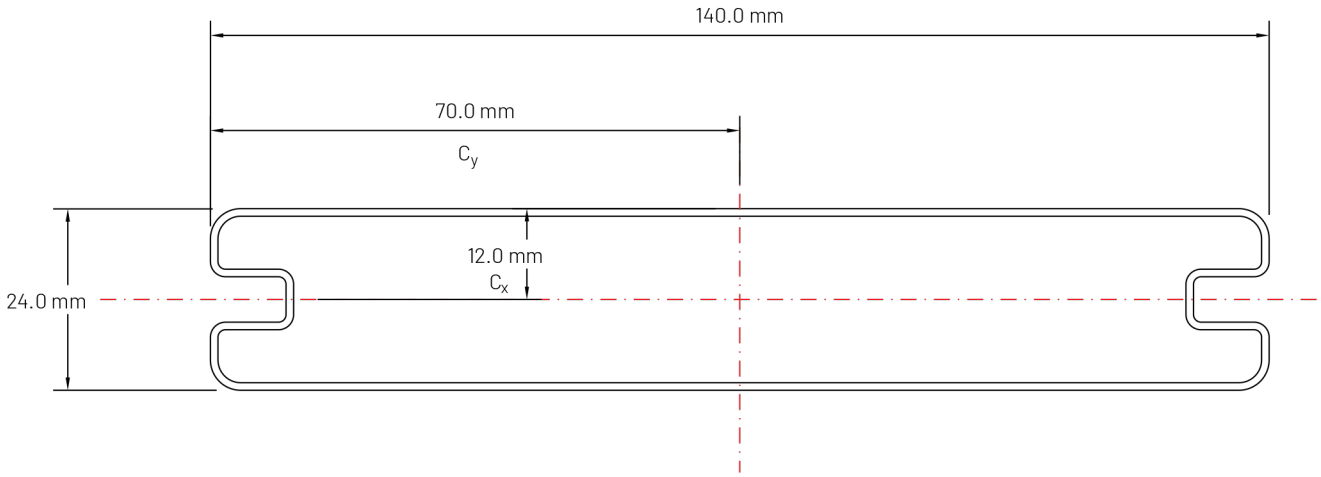

Profile properties	
Product code	**STPV103**
Sectional area (mm^2)	3 224
Approximate mass (kg/m)	2.4

Sectional properties	
$I_x (mm^4)$	159 180
$I_y (mm^4)$	4 900 711
$C_x (mm)$	70.0
$C_y (mm)$	12.0
$S_x (mm^3)$	13 274
$S_y (mm^3)$	70 026

Drawing title

STPV103 - Decking 140 x 24

File name

2022-05-17 - Apex Technical data sheet

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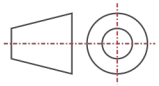

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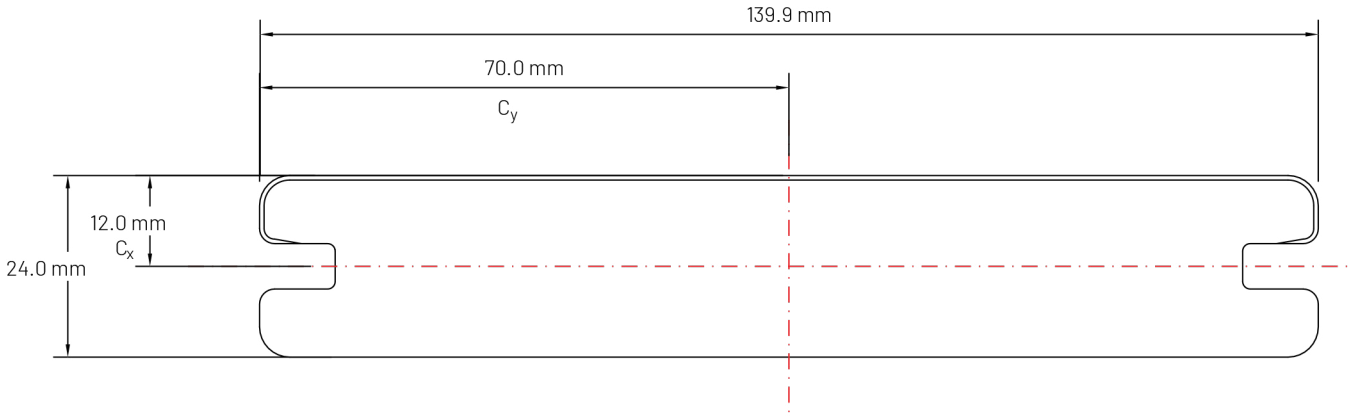


Profile properties	
Product code	**STTHM116**
Sectional area (mm^2)	4 434
Approximate mass (kg/m)	3.3

Sectional properties	
I_x(mm^4)	218 025
I_y(mm^4)	12 689 702
C_x(mm)	95.0
C_y(mm)	12.0
S_x(mm^3)	18 169
S_y(mm^3)	133 598

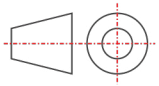
Drawing title

STTHM116 - Decking 190 x 24

File name

2022-05-17 - Apex Technical data sheet

File details



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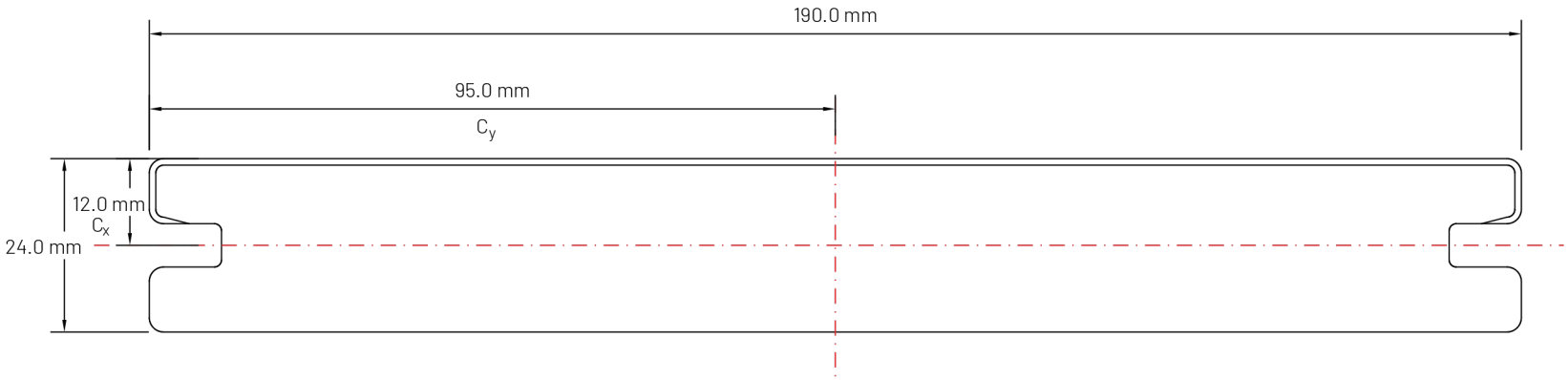
Scale	1:1

Unless otherwise specified all dimensions are in millimeters.

Issued for information. See supporting documentation for disclaimers and details.



Profile properties	
Product code	**STTHM106**
Sectional area (mm^2)	1 786
Approximate mass (kg/m)	1.3

Sectional properties	
I_x(mm^4)	21 233
I_y(mm^4)	3 299 379
C_x(mm)	75.0
C_y(mm)	6.0
S_x(mm^3)	3 539
S_y(mm^3)	43 996

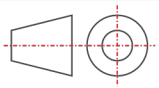
Drawing title

STTHM106 - Fascia 150 x 12

File name

2022-05-17 - Apex Technical data sheet

File details



Drawing number	01
Date	July 2, 2023
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Scale	1:1

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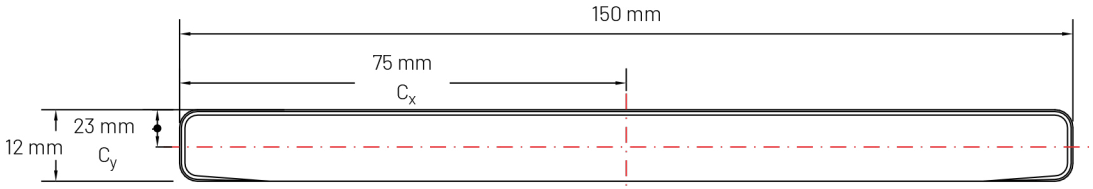


Profile properties	
Product code	**STTHM112**
Sectional area (mm^2)	4 546
Approximate mass (kg/m)	3.4

Sectional properties	
I_x(mm^4)	96 577
I_y(mm^4)	30 589 396
C_x(mm)	142.5
C_y(mm)	8.0
S_x(mm^3)	12 084
S_y(mm^3)	214 674

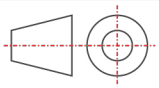
Drawing title

STTHM112 - Fascia - 285 x 16

File name

2022-05-17 - Apex Technical data sheet

File details



Drawing number	01
Date	July 2, 2023
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Scale	1:1

Unless otherwise specified all dimensions are in millimeters.

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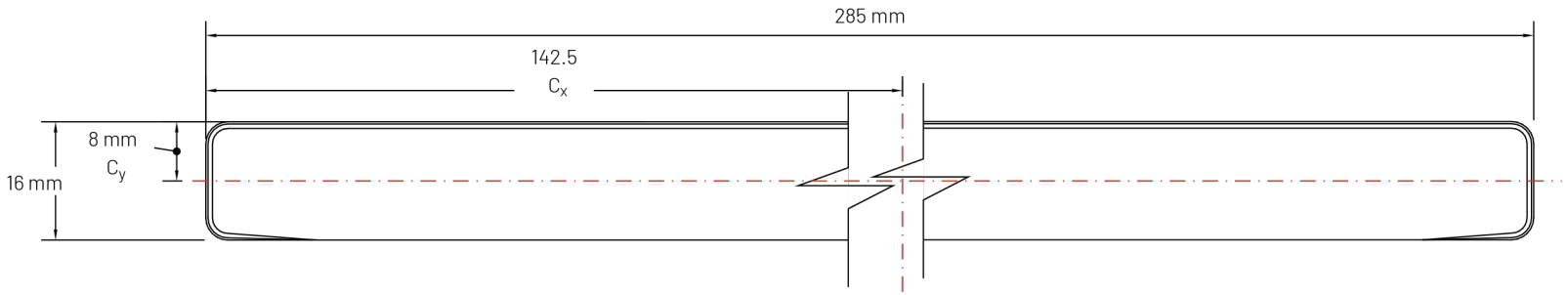


Profile properties	
Product code	**STPVB104**
Sectional area (mm^2)	986
Approximate mass (kg/m)	0.7

Sectional properties	
I_x(mm^4)	151 142
I_y(mm^4)	86 691
C_x(mm)	15.0
C_y(mm)	20.0
S_x(mm^3)	7 898
S_y(mm^3)	5 779

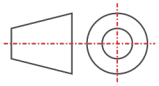
Drawing title

STPVB104 - Joist- 40 x 30

File name

2022-05-17 - Apex Technical data sheet

File details



Drawing number	01
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Scale	1:1

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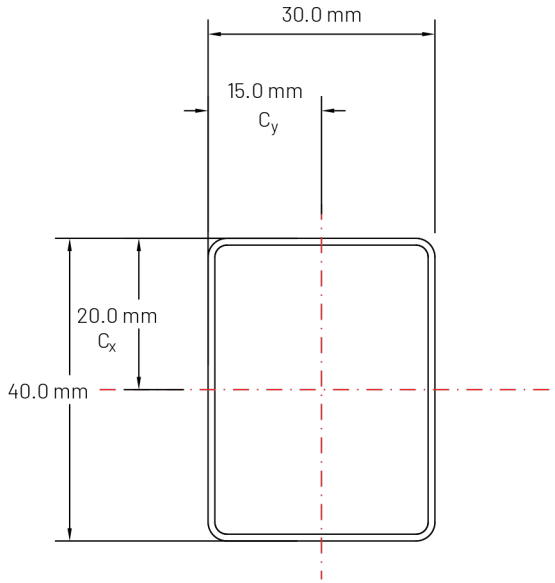

Appendix B

Material Compatibility

The following information provides a list of substances that may negatively impact that Apex cap material. Below is an extensive (not complete) list of common substances and solutions known to influence the surface of cap on Apex. It is important to check material compatibility when choosing chemicals that the product may encounter, as they may prematurely degrade the product, these may include ingredients in cleaning products, pool additives and even oils and saps from local vegetation.

Symbol legend

The symbols and abbreviations used have the following meanings:

+ = Resistant over a period of months to years.

0 = Limited resistance: some swelling, solvation or environmental stress cracking is possible.

- = Not resistant: severe swelling, decomposition, solvation or environmental stress cracking.

soln. = Saturated aqueous solution.

Resistance definition

Good resistance: Water, aqueous salt solutions, detergent solutions, dilute acids, and alkalis.

Limited resistance: Alcohols, aliphatic hydrocarbons, oils, and fats.

Not resistant: Concentrated mineral acids, aromatic and/or halogenated hydrocarbons, esters, ethers, ketones.

Solvents: Examples are methyl ethyl ketone, tetrahydrofuran, toluene, dimethyl-formamide.

Source data:

BASF – Chemical resistance of styrene co-polymers – www.basf.de/plastics

TEST SUBSTANCE	20°C	50°C
Acetamide	+	+
Acetic acid (100%)	-	-
Acetic acid (25%)	+	+
Acetic acid (50%)	+	0
Acetone	-	-
Acetophenone	-	-
Acetylsalicylic acid (soln.)	+	+
Allyl alcohol	-	-
Allyl mustard oil	-	-
Almond, bitter, oil of	+	0
Almond, oil of	+	+
Alum (soln.)	+	+
Aluminium chloride (soln.)	+	+
Aluminium sulphate (soln.)	+	+
Ammonia, aqueous (25%)	+	+
Ammonium carbonate (soln.)	+	+
Ammonium chloride (soln.)	+	+
Ammonium molybdate (soln.)	+	+
Ammonium nitrate (soln.)	+	+
Ammonium rhodanide (soln.)	+	+
Ammonium sulphate (soln.)	+	+
Amyl acetate	-	-
Amyl acetate	-	-
Amyl alcohol	+	0

TEST SUBSTANCE	20°C	50°C
Amyl cinnamaldehyde	-	-
Amyl mercaptan	-	-
Aniline	-	-
Anise, oil of	-	-
Aniseed	+	+
Apple juice	+	+
Aqua regia	0	-
Atropine sulphate	+	+
Barium bromide (soln.)	+	+
Barium carbonate (soln.)	+	+
Barium chloride (soln.)	+	+
Beef tallow	+	+
Benzaldehyde	-	-
Benzene	-	-
Benzoic acid	+	+
Benzyl acetate	-	-
Benzyl acetate	-	-
Benzyl alcohol	-	-
Bismuth chloride (soln.)	+	+
Bismuth subnitrate (soln.)	+	+
Bone oil	+	+
Borax (soln.)	+	+
Boric acid (soln.)	+	+

TEST SUBSTANCE	20°C	50°C
Brake fluid (ATE)	-	-
Brandy	+	+
Bromine (liquid)	-	-
Butane	+	+
Butter	+	+
Butyl acetate	-	-
Butyl acetate	-	-
Butyric acid	-	-
Cadmium bromide (soln.)	+	+
Caffeine (soln.)	+	+
Calcium bromide (soln.)	+	+
Calcium chloride (soln.)	+	+
Calcium hypochlorite (solid)	+	+
Calcium hypochlorite (soln.)	+	+
Calcium oxide	+	+
Camphor	+	+
Caraway seed (ground)	+	+
Carbazole	+	+
Carbon dioxide	+	+
Carbon sulphide	-	-
Cardamom	+	+
Carnauba wax	+	+
Carrot juice	+	+

Castor oil	+	+
Gallic acid	+	+
Garlic (powder)	+	+
Gasoline (Premium unleaded)	0	-
Gasoline (Standard unleaded)	0	0
Ginger (ground)	0	0
Glucose (30 %)	+	+
Glycerine	+	+
Grapefruit juice	+	+
Gravy	+	+
Heating oil	+	+
Heptane	0	0
Heptyl alcohol	+	0
Hexachlorobenzene	+	+
Hexane	0	0
Hexanediol	+	+
Hexanol	+	0
Honey	+	+
Horse radish	+	+
Household detergent (soln.)	+	+
Hydrochloric acid (15 %)	+	0
Hydrochloric acid (conc.)	+	0
Hydrofluoric acid (40 %)	0	0
Hydrogen peroxide (3 %)	+	+
Hydrogen peroxide (30 %)	+	+
Hydrogen sulphide	+	+
Hydroquinone (soln.)	+	0
Hydroxyacetone	0	0
Ink, writing	+	+
Iodine, tincture of	0	-
Iron (II) chloride (solid)	+	+
Iron (II) chloride (soln.)	+	+
Iron (II) sulphate (solid)	+	+
Iron (III) chloride (soln.)	+	+
Iron ammonium sulphate	+	+
Iron nitrate (soln.)	+	+
Isoamyl alcohol	+	0
Isobutanol	0	-
Isooctane	+	+
Isooctane	+	+
Isopropanol	+	-
Isopropyl acetate	-	-

Lactic acid (10%)	+	+
Lactic acid (80%)	+	+
Lactose (soln.)	+	+
Lanolin +	+	+
Laurel (ground)	+	+
Lauryl alcohol	+	+
Lead acetate (soln.)	+	+
Lead nitrate (soln.)	+	+
Lead stearate	+	+
Lead sulphate (soln.)	+	+
Lemon grass, oil of	-	-
Lemon juice	+	+
Lemon, oil of	0	0
Ligroin	+	+
Lime water	+	+
Linseed oil	+	+
Mace (ground)	+	0
Magnesium bromide	+	+
Magnesium carbonate	+	+
Magnesium chloride (soln.)	+	+
Magnesium sulphate (soln.)	+	+
Maize oil	+	+
Malic acid (10%)	+	+
Mandarin orange, oil of	0	0
Margarine	+	+
Marjoram (ground)	+	+
Marmalade	+	+
Mayonnaise	+	+
Potassium bromide (soln.)	+	+
Potassium chloride (soln.)	+	+
Potassium chromate (soln.)	+	+
Potassium dichromate (soln.)	+	0
Potassium ferricyanide	+	+
Potassium fluoride (soln.)	+	+
Potassium hydroxide (10 %)	+	+
Potassium hydroxide (50 %)	+	+
Potassium hydroxide (concentrated soln.)	+	0
Potassium iodate (soln.)	+	+
Potassium iodide (soln.)	+	+
Potassium nitrate (soln.)	+	+
Potassium permanganate (soln.)	+	0

Potassium persulfate (soln.)	+	+
Potassium sulphate (soln.)	+	+
Potassium sulphide (soln.)	+	+
Prontosil	+	+
Propane (liquid)	+	+
Propane (liquid) chloride	-	-
Propane glycol	+	+
Propylene glycol methyl ether	-	-
Propylene oxide	-	-
Pyridine	-	-
Pyrogallol (soln.)	+	0
Resorcin (soln.)	0	0
Rongalite (soln.)	+	+
Roses, oil of	0	0
Rum	+	+
Rum essence	+	+
Salicylic acid (soln.)	+	+
Salt, common (dry)	+	+
Sandalwood, oil of	-	-
Sassafras oil	-	-
Sea water	+	+
Sebacic acid dibutyl ester	-	-
Silicone fluid	+	+
Silver nitrate (soln.)	+	+
Sodium acetate (soln.)	+	+
Sodium benzoate (soln.)	+	+
Sodium bicarbonate (soln.)	+	+
Sodium bisulfite (soln.)	+	+
Sodium borate (soln.)	+	+
Sodium bromate (soln.)	+	+
Sodium bromide (soln.)	+	+
Sodium carbonate (soln.)	+	+
Sodium chloride (dry)	+	+
Sodium chloride (soln.)	+	+
Sodium chromate (soln.)	+	+
Sodium fluoride (soln.)	+	+
Sodium hydrogen sulfite	+	+
Sodium hydroxide (50%)	+	+
Sodium hypochlorite (soln. with 12% Cl)	+	+
Sodium hypochlorite (soln., 12% chlorine)	+	+

Sodium nitrate	+	+
Sodium nitrite	+	+
Sodium perborate (soln.)	+	+
Sodium phosphate (sec.) (soln.)	+	+
Sodium phosphate (tert.) (soln.)	+	+
Sodium sulphate (soln.)	+	+
Sodium sulphide (soln.)	+	+
Sodium sulfite (soln.)	+	+
Sodium thiosulfate (soln.)	+	+
Soy oil	+	+
Sperm oil	+	+
Stearic acid	+	+
Strontium bromide	+	+
Strychnine	+	+
Sugar (soln, 30%)	+	+
Sulphur	+	+
Sulphur hexafluoride	+	+
Sulfuric acid (10%)	+	+
Tannic acid	+	+
Tartaric acid (soln.)	+	+
Tea leaves (moist)	+	+
Tea, instant	+	+
Tetrachlorethane	-	-
Tetrachloromethane	-	-
Tetrahydrofuran	-	-
Tetrahydrofurfurol	-	-
Tetralin (R)	-	-
Thionyl chloride	-	-
Thiophene	-	-
Thymol	-	-
Tin (II) chloride (soln.)	+	+
Tin (IV) chloride (soln.)	-	-
Titanium tetrachloride	-	-
Toluene	-	-
Tomato juice	+	+
Tragacanth (gum tragacanth)	+	+
Transformer oil	+	0
Trichlorobenzene	-	-
Trichloroethane	-	-
Trichloroethylene	-	-
Trichlorophenol	-	-
Tricresyl phosphate	-	-
Triethanolamine	+	+
Triethylene glycol	+	+
Triglycol acetate	-	-
Trypaflavin (R)	+	+
Tryptophane (d or l)	+	+
Turpentine	0	0
Turpentine substitute	+	0
Tyrosine (d or l)	+	+
Undecanol	+	+
Urea (soln.)	+	+
Urotropin (soln.)	+	+
Valerian drops	+	+
Verbena oil	-	
Vinegar	+	+
Water	+	+
Watercolours	+	+
Water glass	+	+
Wax (bleached)	+	+
White oil	+	+
Xylene	-	-
Zinc bromide	+	+
Zinc carbonate	+	+
Zinc chloride (soln.)	+	+
Zinc nitrate	+	+
Zinc ointment	+	+
Zinc oxide	+	+
Zinc stearate	+	+
Zinc sulphate (soln.)	+	+