

**EnviroTREAD™**  
Recreational Public Infrastructure

# Recreational Public Infrastructure

Market leaders in Engineered Solutions for Fibreglass Reinforced Plastic (FRP) Systems for Recreational Public Infrastructure



**TREADWELL™**  
TOTAL "Fit & Forget" SOLUTIONS



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## Quality Policy

Quality is at the forefront of Treadwell Access Systems working practices. With over 15 years of manufacturing to the highest quality standards, Treadwell Access Systems prides itself on its reputation for implementing strict quality control measures, and strives to supply products that surpass customers expectations. The company works on a policy of 'continuous improvement'.



## Environment Policy

Treadwell Access Systems is conscious of the impact it has on the environment and its associated responsibilities. The company is committed to ensuring its operations satisfy both legal obligations and more duties. Treadwell has been committed to sustainability for many years and is not just responding to current trends.

**Disclaimer:** The information contained in this Treadwell design guide herein supplied is as a service to our customers and is intended to be used only as a general guide. It is not a substitute for proven engineering practices and designs.



# EnviroTREAD™



## Light Weight, High Strength and Easy Installation

Treadwell's FRP products and systems are lightweight and very manageable.



## Long Term Cost Benefits

Long service life, minimal maintenance costs and low installation costs all combine to provide a very competitive solution over time.



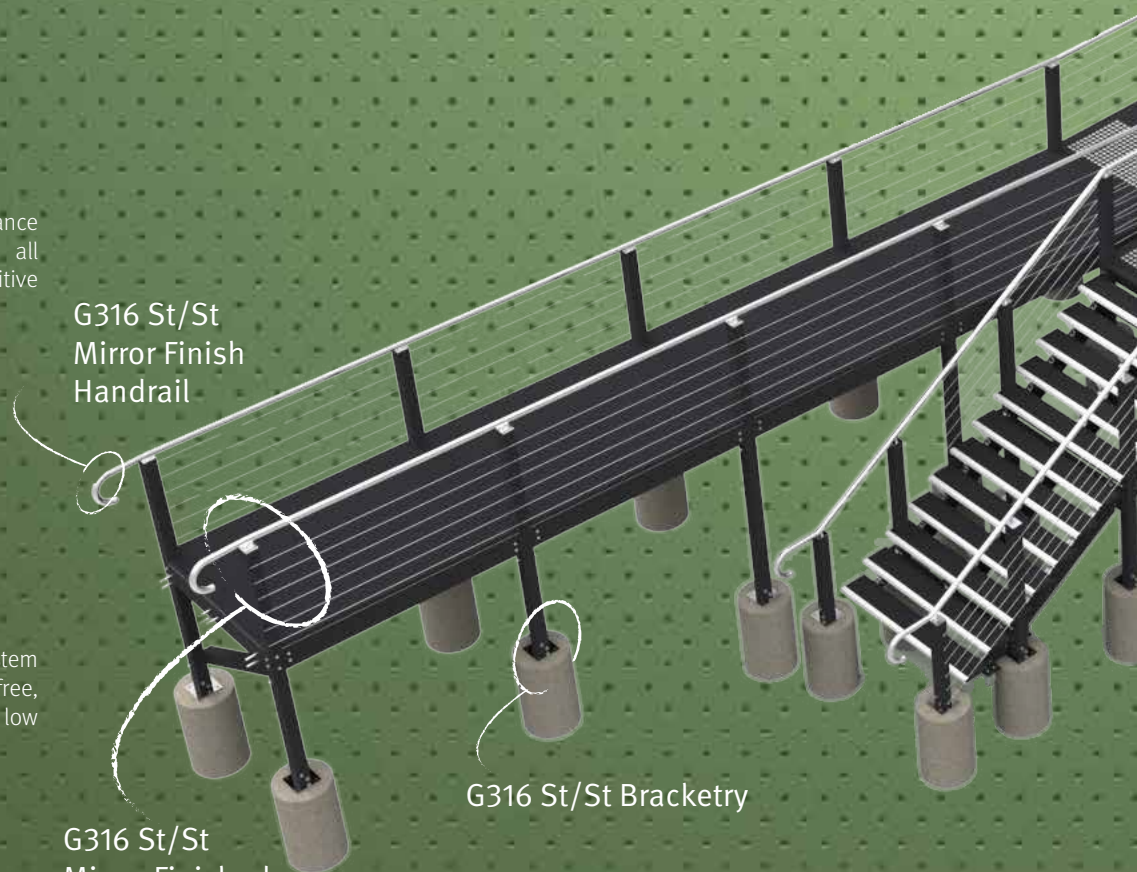
## Virtually Maintenance Free

Given the nature of FRP, any system utilising it is virtually maintenance free, thus keeping maintenance costs as low as possible.



## Corrosion, Rust and Rot Proof

Treadwell's superior resin systems offer exceptional resistance to acids, salts and alkalis. At the same time, our FRP systems are rot and rust proof.

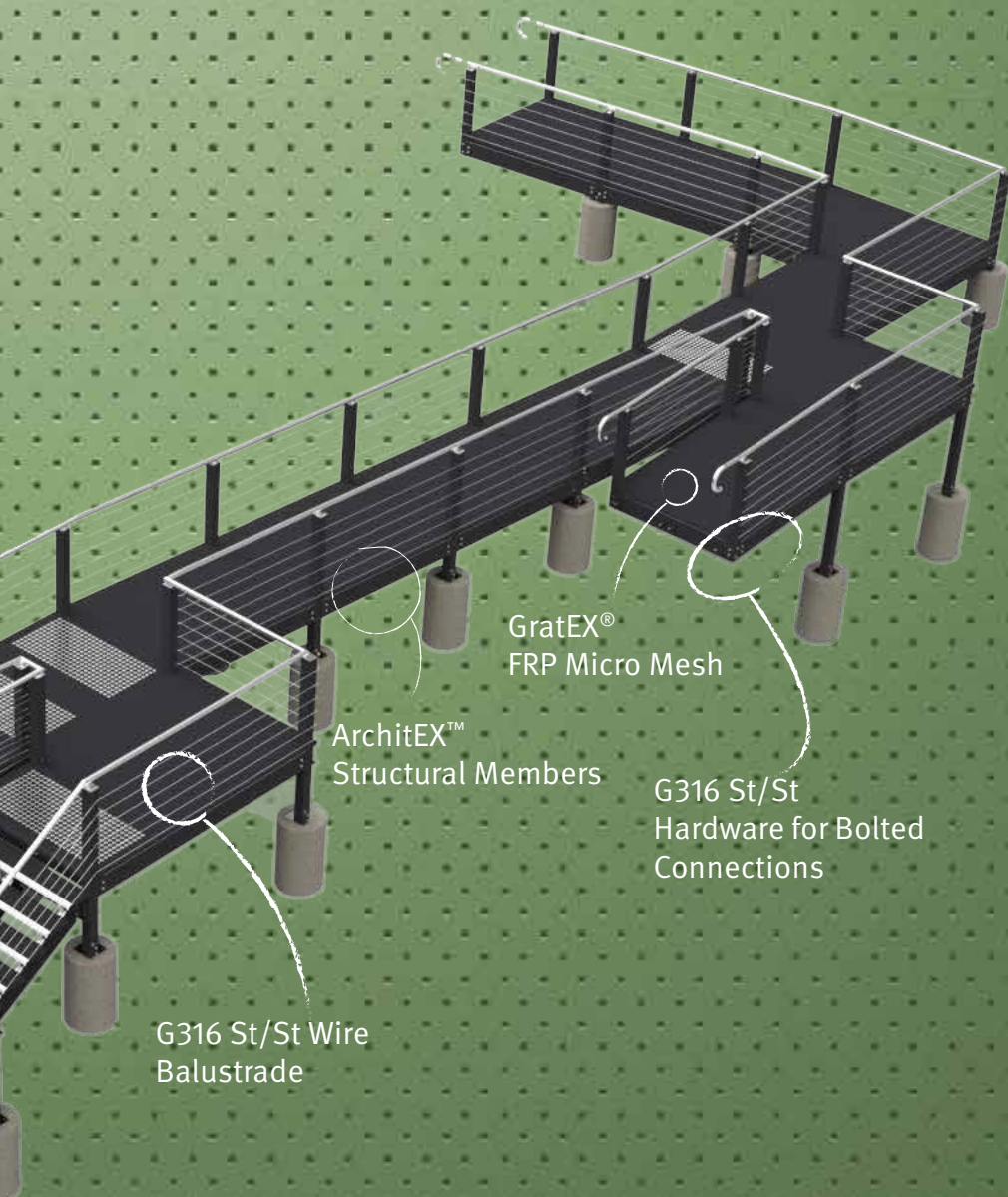


G316 St/St  
Mirror Finish  
Handrail

G316 St/St Bracketry

G316 St/St  
Mirror Finished  
End Cap





### No Protective Coating Required

Treadwell's unique surface finishing system ensures UV stability in exposed applications, directly eliminating the need for costly surface treatment.



### Non-Conductive and RF Transmission Transparent

FRP is transparent to radio frequency transmission and is non-conductive in nature. This makes the material ideal for applications that need to avoid electrical currents in environments with liquids.



### Competitive vs. Traditional Materials

FRP is manufactured from a more economically sound raw material base than metallic alternatives, and is far more structurally sound when compared to timber and plastic materials.



### No Hot Work or Welding Required

FRP is very simply modified or fabricated on site with easy to use hand tools. These can be done without the hassle of first needing to obtain hot work permits.



## Rainforest Boardwalk Case Study



The Cathedral Fig Tree, located in tropical Queensland, is a gigantic 500 year old strangler tree. Located in the Danbulla State Forest, the Cathedral Fig has the reputation of being the best place to hear an early morning bird 'singing' in the Atherton Tablelands.

In order for visitors to circumnavigate the base of the tree and giant buttress roots, a durable and long lasting walkway was required to withstand the stress as well as the environment.

Treadwell was tasked to design, engineer and supply the framework and flooring manufactured from FRP.

### Project Challenges

- Protection of the existing landscape including the root system of the Fig Tree.
- Difficulty in laying out structure on the terrain.
- Tough logistical and installation considerations
- Maintenance of the structure when completed

### Treadwell's Solution:

- 1 Carefully planned installation of boardwalk to minimise impact on the environment.
- 2 As part of the exclusive EnviroTREAD™ range, high performance GratEX® FRP grating and RailEX® FRP handrails were specified in lining the structure and providing a much more sustainable solution over traditional materials.
- 3 ArchitEX™ profiles in the construction of the framework specified are corrosion resistant and provide the strength into the structure.
- 4 FRP is simply fabricated and modified on site. This means there is no need for any hot works permit.
- 5 Being lightweight and easy to install, FRP is very manageable during construction.
- 6 Any system utilising FRP is virtually maintenance free, thus keeping maintenance costs as low as possible.

Project Information	
Scope of Work:	Elevated boardwalk for viewing one of the largest Fig Trees in the world.
Treadwell Products used:	EnviroTREAD™
	ACCESS SYSTEMS • GratEX® Mini Mesh
	ArchitEX™ • Structural Profiles
Total Project Value:	\$36,000.00



## Boat Ramp & Footbridge Case Study



Enhancing the facilities around this pristine beach region in Nowra, a new recreational boating facility has been constructed to reinforce the region's status as a prime destination for water sports and the likes. The project includes a purpose built fibreglass kayak ramp as well as platform for easy access.

The Treadwell team was well poised to address environmental, safety and amenity considerations that are related to the site. This new facility will be an encouragement for visitors to use this area with many benefits for the local community.

### Project Challenges

- Protection of the existing landscape including the mangroves on the water edge.
- Coastal corrosive environment
- Terrain, installation and logistical concerns
- Maintenance of structure

### Treadwell's Solution:

- 1** Precise planning of installation of boardwalk to ensure minimal impact on the environment.
- 2** As part of the exclusive EnviroTREAD™ range, high performance GratEX® FRP grating and RailEX® FRP handrails were specified in lining the structure and providing a much more sustainable solution over traditional materials.
- 3** ArchitEX™ profiles in the construction of the framework specified are corrosion resistant and provide the strength into the structure.
- 4** Being lightweight and easy to install, FRP is very manageable during construction.
- 5** FRP is simply fabricated and modified on site. This means there is no need for any hot works permit.
- 6** Any system utilising FRP is virtually maintenance free, thus keeping maintenance costs as low as possible.

### Project Information

Scope of Work:	Watercourse access for paddle craft and kayak users while protecting the mangroves.
Treadwell Products used:	EnviroTREAD™ ACCESS SYSTEMS • GratEX® Mini Mesh ArchitEX™ • Structural Profiles
Total Project Value:	\$85,000.00





## Recreational Kayak Ramp Case Study



The estuarine waters of this recreation park in South Australia are a perfect environment for canoeing, kayaking and paddle boarding. Beginners feel safe learning to paddle in the calm waters of the Onkaparinga river between Main South Road and Commercial Road.

This brand new kayak and canoe launch at the recreation park main entrance at Perry's Bend features Treadwell's fiberglass steps and a ramp to enable safe launches down to the water.

Treadwell was heavily involved in the design and construct of the bridge within a short time frame as well as the supply of fiberglass grating and structural profiles for the ramp.

### Project Challenges

- Installation of structure while dealing with tidal influences.
- Coastal corrosive environment
- Terrain and logistical concerns
- Maintenance of structure
- Electrical transparency concerns due to proximity to power lines.

### Treadwell's Solution:

- 1 Precise planning of installation of boardwalk to ensure minimal impact on the environment.
- 2 As part of the exclusive EnviroTREAD™ range, high performance GratEX® FRP grating and RailEX® FRP handrails were specified in lining the structure and providing a much more sustainable solution over traditional materials.
- 3 ArchitEX™ profiles in the construction of the framework specified are corrosion resistant and provide the strength into the structure.
- 4 FRP is simply fabricated and modified on site. This means there is no need for any hot works permit.
- 5 Being lightweight and easy to install, FRP is very manageable during construction.
- 6 Any system utilising FRP is virtually maintenance free, thus keeping maintenance costs as low as possible.
- 7 FRP is transparent to radio frequencies as well as being electrically transparent.

Project Information	
Scope of Work:	River access for kayak users
Treadwell Products used:	EnviroTREAD™
	ACCESS SYSTEMS • GratEX® Mini Mesh
	ArchitEX™ • Structural Profiles
Total Project Value:	\$30,000.00



## Boat Ramp & Jetty Case Study



Local residents now have a new boat ramp in the Swansea region that enhances the status of the region as a recreational boating area. A fibreglass boat ramp was specified to complement the existing infrastructure around the lake to draw more visitors and benefit the economy around the area.

Treadwell was tasked in the design and supply of materials for this purpose. Situated in such an exposed environment and longevity was a major concern amongst others, Treadwell's fibreglass products were the obvious choice for the client.

### Project Challenges

- Installation of structure while dealing with tidal influences.
- Coastal corrosive environment
- Terrain and logistical concerns
- Maintenance of structure

### Treadwell's Solution:

- 1** Precise planning of installation of boardwalk to ensure minimal impact on the environment.
- 2** As part of the exclusive EnviroTREAD™ range, high performance GratEX® FRP grating and RailEX® FRP handrails were specified in lining the structure and providing a much more sustainable solution over traditional materials.
- 3** ArchitEX™ profiles in the construction of the framework specified are corrosion resistant and provide the strength into the structure.
- 4** FRP is simply fabricated and modified on site. This means there is no need for any hot works permit.
- 5** Being lightweight and easy to install, FRP is very manageable during construction.
- 6** Any system utilising FRP is virtually maintenance free, thus keeping maintenance costs as low as possible.

### Project Information

Scope of Work:	Boat ramp jetties
Treadwell Products used:	EnviroTREAD™
	ACCESS SYSTEMS • GratEX® Mini Mesh
	ArchitEX™ • Structural Profiles
Total Project Value:	\$130,000.00





## Foreshore Shared Pathway Boardwalk Case Study



This shared pathway boardwalk lies within a public reserve connecting Minerva Avenue and Plantation Point Parade. A shared user path with elevated platforms which provides access for all levels of mobility and two options for track & trail pathways which traverse the reserve both along and perpendicular to the contours were required as part of an upgrade.

Treadwell is well versed and experienced with this sort of design and supply. When approached for this purpose, Treadwell's fibreglass was the obvious ideal structural and longevity solution.

### Project Challenges

- Finalising design with ever-changing landscape due to heavy rains during early construction.
- Coastal corrosive environment
- Terrain and logistical concerns
- Maintenance of structure

### Treadwell's Solution:

- 1 Precise planning of installation of boardwalk to ensure minimal impact on the environment.
- 2 As part of the exclusive EnviroTREAD™ range, high performance GratEX® FRP grating and RailEX® FRP handrails were specified in lining the structure and providing a much more sustainable solution over traditional materials.
- 3 ArchitEX™ profiles in the construction of the framework specified are corrosion resistant and provide the strength into the structure.
- 4 FRP is simply fabricated and modified on site. This means there is no need for any hot works permit.
- 5 Any system utilising FRP is virtually maintenance free, thus keeping maintenance costs as low as possible.
- 6 Being lightweight and easy to install, FRP is very manageable during construction.

Project Information	
Scope of Work:	Elevated walkways connecting concrete paths over ravines.
Treadwell Products used:	EnviroTREAD™
	ACCESS SYSTEMS • GratEX® Mini Mesh
	ArchitEX™ • Structural Profiles
Total Project Value:	\$280,000.00



## Coastal Lookout Case Study



Set on the shores of the spectacular Waterloo Bay, Elliston is formed for beautiful sunsets, breathtaking scenery, surfing, fishing and frequent sightings of sea lions, dolphins and Southern right whales during winter. The lookout offers spectacular vistas of natural rock formations, rugged cliffs and breathtaking views of the coastline.

However, being set on the coastline presents challenges that traditional material could not overcome. Treadwell offered solutions that surpassed these same challenges.

### Project Challenges

- Protection of existing landscape.
- Coastal corrosive environment
- Difficulty in laying out the structure on the terrain.
- Remote location

### Treadwell's Solution:

1

Precise planning of installation of boardwalk to ensure minimal impact on the environment.

2

As part of the exclusive EnviroTREAD™ range, high performance GratEX® FRP grating and RailEX® FRP handrails were specified in lining the structure and providing a much more sustainable solution over traditional materials.

3

ArchitEX™ profiles in the construction of the framework specified are corrosion resistant and provide the strength into the structure.

4

FRP is simply fabricated and modified on site. This means there is no need for any hot works permit.

5

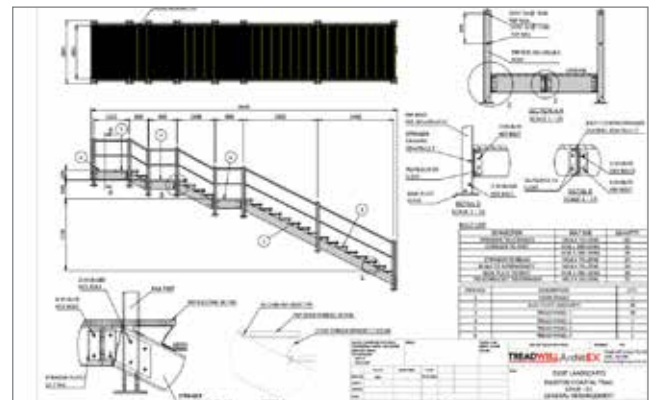
Any system utilising FRP is virtually maintenance free, thus keeping maintenance costs as low as possible.

6

Being lightweight and easy to install, FRP is very manageable during construction.

### Project Information

Project Category:	Recreational Public Infrastructure
Scope of Work:	Safe access to lookout point
Treadwell Products used:	EnviroTREAD™
	ACCESS SYSTEMS • GratEX® Mini Mesh
	ArchitEX™ • Structural Profiles
Total Project Value:	\$280,000.00





## Beach Boardwalk Access Case Study



The existing timber boardwalk had lived past its useful life, damaged by coastal erosion and in need of replacement. A new boardwalk was to be reconstructed and elevated over the dune. At the beach end of the dune an elevated viewing platform is proposed to be constructed in front of the beach access stairs in a prime viewing area. This project was also required to address the high risk of major coastal erosion occurring and loss of coastal habitat.

Treadwell was tasked in the provision of materials that will be durable against the elements and surroundings while leaving a minimal impact of the coastal habitat.

### Project Challenges

- Construction to take place within environmentally and culturally significant corridor.
- Protection of existing coastal dunes – liaison with cultural monitors.
- General construction access in a remote area.
- Coastal corrosive environment.

### Treadwell's Solution:

- 1** Carefully planned installation of boardwalk to minimise impact on the environment.
- 2** As part of the exclusive EnviroTREAD™ range, high performance GratEX® FRP grating and RailEX® FRP handrails were specified in lining the structure and providing a much more sustainable solution over traditional materials.
- 3** ArchiTEX™ profiles in the construction of the framework specified are corrosion resistant and provide the strength into the structure.
- 4** FRP is simply fabricated and modified on site. This means there is no need for any hot works permit.
- 5** Any system utilising FRP is virtually maintenance free, thus keeping maintenance costs as low as possible.
- 6** Being lightweight and easy to install, FRP is very manageable during construction.

Project Information	
Project Category:	Recreational Public Infrastructure
Scope of Work:	Boardwalk at Snapper Point
Treadwell Products used:	EnviroTREAD™
	ACCESS SYSTEMS <ul style="list-style-type: none"> <li>• FRP Grating</li> <li>• RailEX®</li> <li>• FRP Handrails</li> </ul>
	ArchiTEX™ <ul style="list-style-type: none"> <li>• Structural Profiles</li> </ul>
Total Project Value:	\$64,000.00



## World Heritage Boardwalk Case Study



This iconic boardwalk on the Gordon River is situated in the World Heritage Region in Western Tasmania. The original structure was a 1200mm wide treated timber structure. This structure was past it's design life and the surrounding environment being very damp meant that it was in advanced stages of rotting. A new boardwalk was designed based on a new width of 1800mm.

Treadwell was engaged with supplying durable decking solution for the new structure that would be suitable for the entire design life and would provide an ease of install while leaving zero impact on the environment.

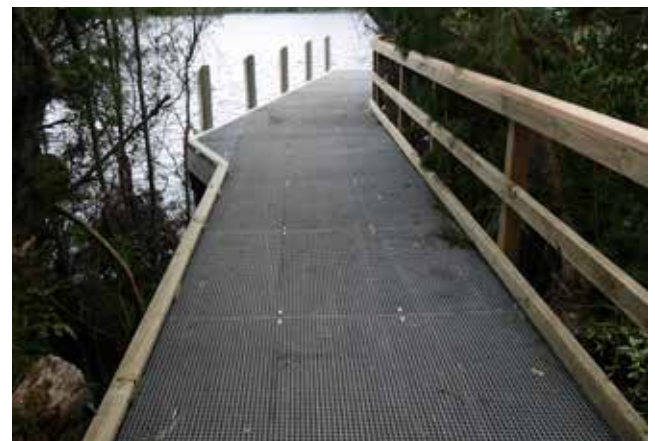
### Project Challenges

- Installation to take place within an environmentally significant corridor
- Protection of Huon Pine Trees and other protected flora species
- Remote site with very limited access

### Treadwell's Solution:

- 1** Precise planning of installation of boardwalk to ensure minimal impact on the environment.
- 2** As part of the exclusive EnviroTREAD™ range, high performance GratEX® FRP grating and RailEX® FRP handrails were specified in lining the structure and providing a much more sustainable solution over traditional materials.
- 3** Being lightweight and easy to install, FRP is very manageable during construction.
- 4** Any system utilising FRP is virtually maintenance free, thus keeping maintenance costs as low as possible.
- 5** FRP is simply fabricated and modified on site. This means there is no need for any hot works permit.

Project Information	
Project Category:	Recreational Public Infrastructure
Scope of Work:	Decking supply for Heritage Landing
Treadwell Products used:	EnviroTREAD™
	ACCESS SYSTEMS • GratEX® FRP Mini Mesh
Total Project Value:	\$95,000.00





## GratEX® Standard Square Mesh



### What is GratEX® Standard Square Moulded Fibreglass Grating?

Treadwell's GratEX® Standard Square Moulded FRP grating is a high strength, single piece construction mesh panel product. Treadwell offers both standard panel sizes as well as the option of custom panels made to order from your drawings, or alternatively, drawings provided by Treadwell's drafting department.

Cost effective GratEX® Standard Square panels allow for easy on-site fabrication/trimming whilst ensuring that wastage is minimised. Load bearing bars in both directions likewise allow for use without continuous side support and so contribute to cost effectiveness.

GratEX® offers all the benefits available with grating made from other materials plus a host of superior benefits unequalled by steel or other metal alternatives, and hence has over time become the first choice in application where zero maintenance is key.

For load and deflection data, please refer to the latest EX-Series® Grating Product Guide.

GTX-253838SS			
Isometric View		Plan View	
GTX-303838SS			
Isometric View		Plan View	
GTX-383838SS			
Isometric View		Plan View	
GTX-505050SS			
Isometric View		Plan View	

### Clip-Top

STANDARD M	3D	PLAN	ELEVATION
Hole Diameter: 8mm Material type: 316 st/st Threaded hole: N/A			

### Clamp - Underside

J - UNIVERSAL	3D	PLAN	ELEVATION	SIDE ELEVATION
Hole Diameter: N/A Material type: 316 st/st Threaded hole: N/A				
H	3D	PLAN	ELEVATION	
Hole Diameter: 8mm Material type: 316 st/st Threaded hole: N/A				



## GratEX® Standard Square Mesh





## GratEX® Mini Mesh



### What is GratEX® Mini Mesh Moulded Fibreglass Grating?

Treadwell's GratEX® Mini Mesh carries all the same benefits as the Standard Square Mesh plus more. This grating typically has an aperture of approximately 19mm – 20mm meaning that the actual opening is around 12mm – 13mm. The GratEX® Mini Mesh is compliant to the following standards:

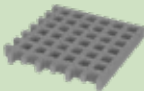
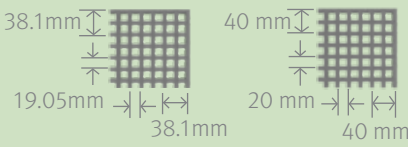
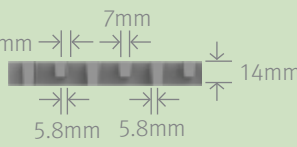
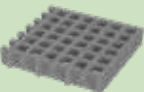
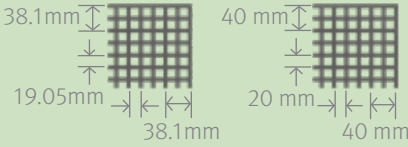
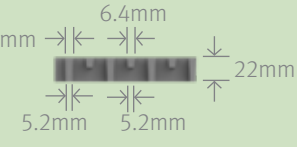
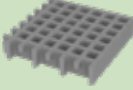
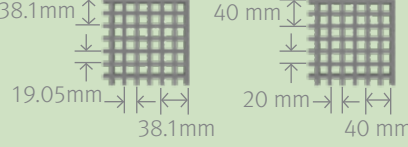
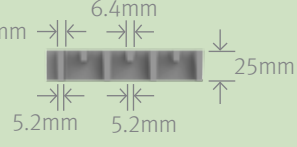
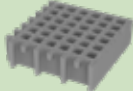
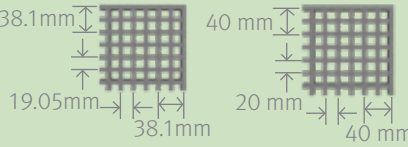
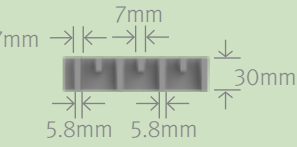
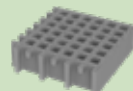
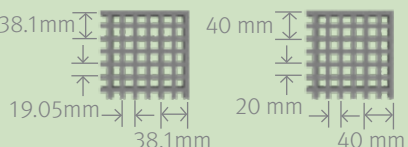
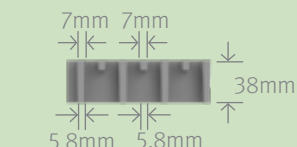
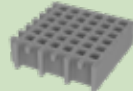
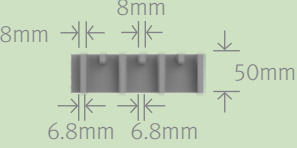






- AS 1428 (Set)-2010 - Design for access and mobility series, provides design requirements for buildings encompassing the specific needs of people with disabilities.
- AS 1657-2013 - Fixed platforms, walkways, stairways and ladders - design, construction and installation.
- AS 4586-2013 - Slip resistance classification of new pedestrian surface materials.

Stock holdings of the GratEX® Mini Mesh cover a large range of panel sizes and thicknesses. However, it is recommended availability be confirmed for project requirements.

For load and deflection data, please refer to the latest EX-Series® Grating Product Guide.



## GratEX® Mini Mesh

GTX-141919M1, GTX-142020M1			
<div>Isometric View</div> 	<div>Plan View</div> 		<div>Elevation View</div> 
GTX-221919M1, GTX-222020M1			
<div>Isometric View</div> 	<div>Plan View</div> 		<div>Elevation View</div> 
GTX-251919M1, GTX-252020M1			
<div>Isometric View</div> 	<div>Plan View</div> 		<div>Elevation View</div> 
GTX-301919M1, GTX-302020M1			
<div>Isometric View</div> 	<div>Plan View</div> 		<div>Elevation View</div> 
GTX-381919M1, GTX-382020M1			
<div>Isometric View</div> 	<div>Plan View</div> 		<div>Elevation View</div> 
GTX-502525M1			
<div>Isometric View</div> 	<div>Plan View</div> 		<div>Elevation View</div> 
MINI MESH M			
Hole Diameter: 8mm Material type: 316 st/st Threaded hole: N/A	<div>3D</div> 	<div>PLAN</div> 	<div>ELEVATION</div> 
MINI MESH J			
Hole Diameter: N/A Material type: 316 st/st Threaded hole: N/A	<div>3D</div> 	<div>PLAN</div> 	<div>ELEVATION</div> 



## GratEX® Micro Mesh

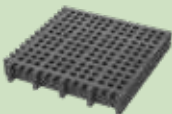
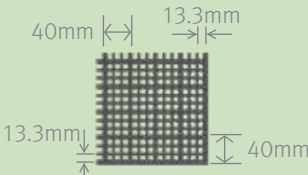
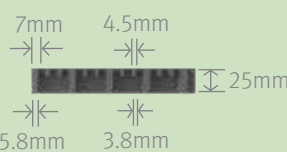
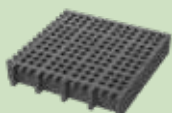
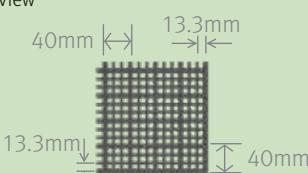
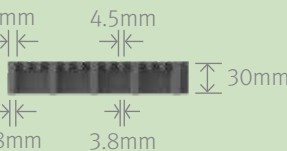
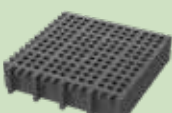
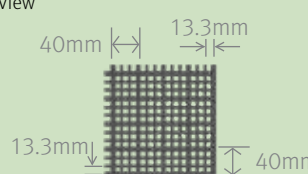
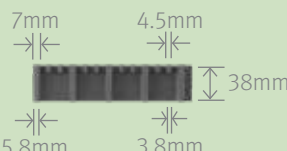





### What is GratEX® Micro Mesh Moulded Fibreglass Grating?

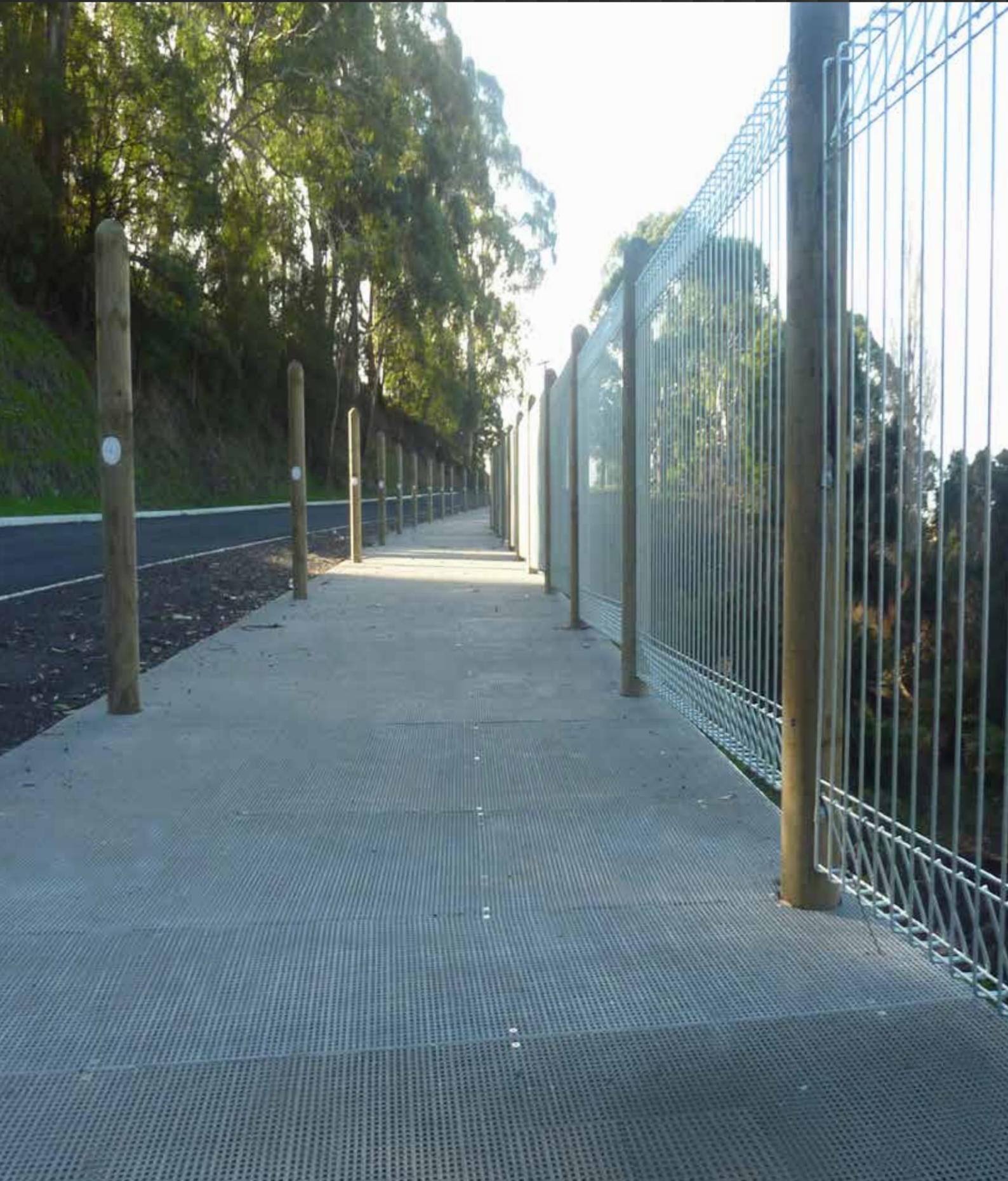
Treadwell's GratEX® Micro Mesh is the preferred product in applications where both product longevity and aperture sizes are points of concern. Boasting in an opening size of 6mm, this product is also known as HealGuard™, meaning that it is the best decking option for structure where social events such as weddings and parties are held.

The Aluminium Oxide Anti-Slip Surface which is impregnated into the surface is available in 10 different levels ranging from heavy offshore Marine Grade to Pedestrian (Wet Barefoot Friendly) Grade. Panels can be supplied in a range of sizes and thicknesses.

For load and deflection data, please refer to the latest EX-Series® Grating Product Guide.

GTX-251313M2		
Isometric View 	Plan View 	Elevation View 
GTX-301313M2		
Isometric View 	Plan View 	Elevation View 
GTX-381313M2		
Isometric View 	Plan View 	Elevation View 
S - Clip	F-FA(SC)-M8*60-BH-SS316	F-FA(ST)-G-6.3*70-IHX-SS316
		

## GratEX® MicroMesh





## GratEX® Solid Surface Mesh



### What is GratEX® Solid Surface Moulded Fibreglass Grating?

Treadwell's GratEX® Solid Surface moulded FRP grating is based on the Standard Square moulded FRP Grating with a fully covered top.

This product is used in applications where apertures are not required or cause concerns for the public. This product is typically used for pedestrian bridges and elevated walkways where the public commute for business.

The GratEX® Solid Surface Moulded FRP Grating is available with numerous surface options including our Anti-Slip and Chequer surfaces. Panels are available in many sizes and thicknesses.

For load and deflection data, please refer to the latest EX-Series® Grating Product Guide.

GTX-253838F3, GTX-253838F5		
Isometric View 	Plan View 	Elevation View 
GTX-303838F3, GTX-303838F5		
Isometric View 	Plan View 	Elevation View 
GTX-383838F3, GTX-383838F5		
Isometric View 	Plan View 	Elevation View 
GTX-505050F3, GTX-505050F5		
Isometric View 	Plan View 	Elevation View 

\* (3) or (5) refers to the option of a 3mm or 5mm Solid Top

S	3D	PLAN	ELEVATION
Hole Diameter: 5mm Material type: 316 st/st Threaded hole: N/A			

## GratEX® Solid Surface Mesh





## GratEX® Moultruded Fibreglass Grating



### What is MoultrEX® Moultruded Fibreglass Grating?

Treadwell's MoultrEX® fibreglass moultruded grating is the first grating to combine the high performance of fibreglass reinforced plastic moulded and pultruded grating construction at a cost more competitive with metal products. With the introduction of this revolutionary product, a new class of grating is now available to meet the needs of both pedestrian and industrial use. This uniquely rigid product is able to perform well at exceptionally larger spans than other products available, meaning substructure can be reduced resulting in savings.

The Aluminium Oxide Anti-Slip Surface which is impregnated into the surface is available in 10 different levels ranging from heavy offshore Marine Grade to Pedestrian (Wet Barefoot Friendly) Grade. Panels can be supplied in a range of sizes and thicknesses.

For load and deflection data, please refer to the latest EX-Series® Grating Product Guide.

MTX-381025SR			
Isometric View		Plan View	Elevation View
MTX-381038SR			
Isometric View		Plan View	Elevation View
MTX-501025SR			
Isometric View		Plan View	Elevation View

### Clip-Top

M-Clip	Isometric View	Plan View	Elevation View
Hole Diameter: 8mm Material type: 316 st/st Threaded hole: N/A			

### Clip Underside

M-Clip	Isometric View	Plan View	Elevation View
Hole Diameter: 5mm Material type: 316 st/st Threaded hole: N/A			



## GratEX® Mouldtruded Fibreglass Grating





## Stair Treads



### Can I Use FRP for Stair Treads?

The EnviroTREAD™ range of Stair Treads includes both open surface and closed surface options and a range of surface patterns, colour and leading edge nosing options.

All GratEX® and MoultrEX® Premium and Standard Stair Tread options are moulded with the solid leading edge nosing as an integrated single stage operation. This increases the rigidity and durability of the entire leading edge ensuring reliable performance in high traffic scenarios. All the treads with abrasive leading edge nosings are manufactured to conform to AS-1657-2013.

The GratEX® and MoultrEX® Stair Tread nosings are typically stocked in colours that contrast by 30% with the primary tread colour, as per AS1657-2013. This ensures maximum visual awareness of the stair treads forward edge for the public utilising the stairways and consequently enhancing the OHS safety ratings.


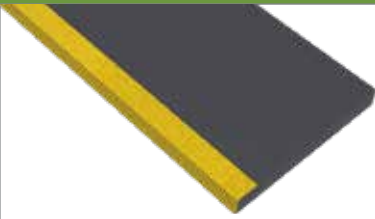
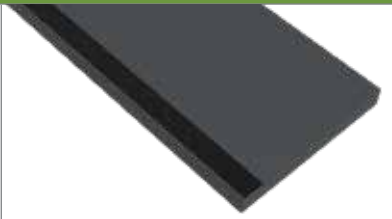
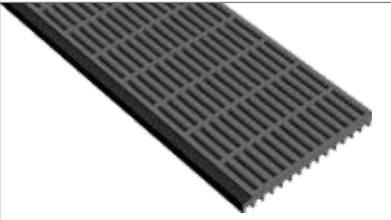
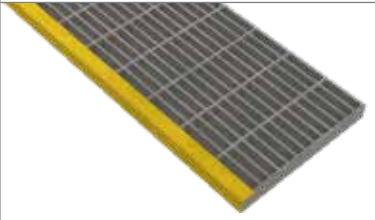
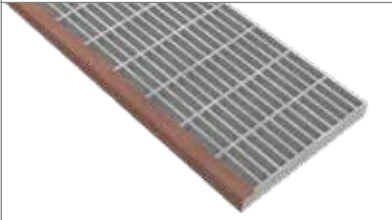
Treadwell recommends that leading edge nosings are specified when ordering GratEX® and MoultrEX® Stair Treads as the safety risks associated with elevated work areas or walkways is significantly increased without them.

NOTE: A bearing surface of at least 40mm is recommended at either side of GratEX® and MoultrEX® Stair Treads. Compliance with AS 1657-2013 requires a Tread depth of > 225mm.

	Economy (STE)	Standard (STD)	Premium (STP)
GratEX® Square Mesh			
GratEX® Mini Mesh			
GratEX® Micro Mesh			



## Stair Treads

	Economy (STE)	Standard (STD)	Premium (STP)
GrateX® Solid Mesh			
MoutEX® Mouldtruded Mesh			





## Millboard® Flooring

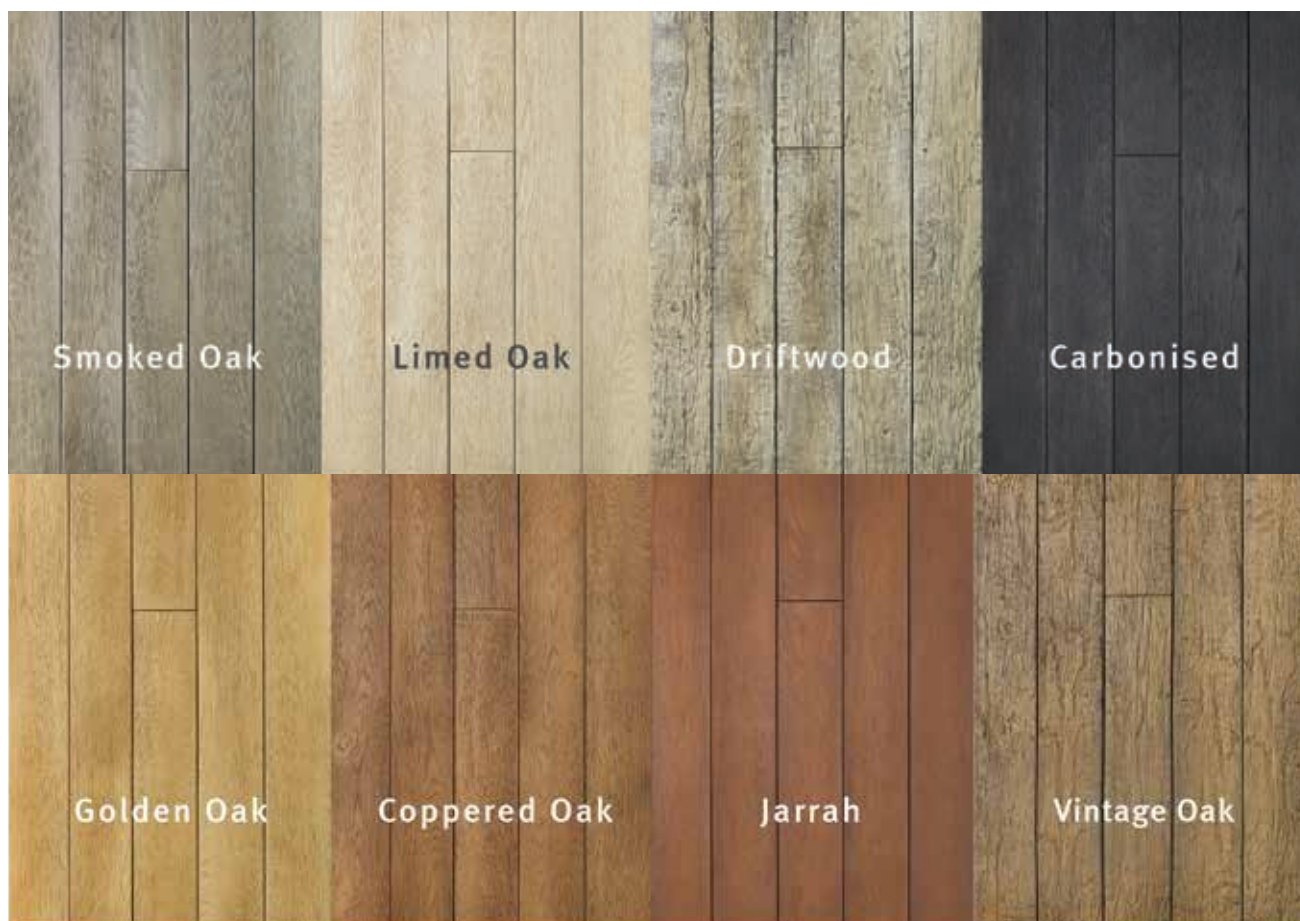


### What is Millboard® Flooring?

Millboard® combines the natural beauty of real timber with the high performance of our unique wood-free material. The unique Lastane® layer is scratch and stain resistant, and is designed to resist fading and sun damage. The structural core is a blend of natural minerals bonded in a polymer resin with long fibre reinforcement for added strength and durability.

This unique internal structure reduces weight while maintaining strength. The fact that Millboard® is solid means that it won't expand or contract, warp or rot like timber and composites made using wood.

For more information, please contact Treadwell Group on 1800 246 800.



**millboard®**



## Millboard® Flooring





# ArchitEX<sup>TM</sup>

## Scope of Shapes

Easy integration to various parts due to the capability to essentially shape any item with a constant cross section which can be pultruded.

## Composite Design Engineering

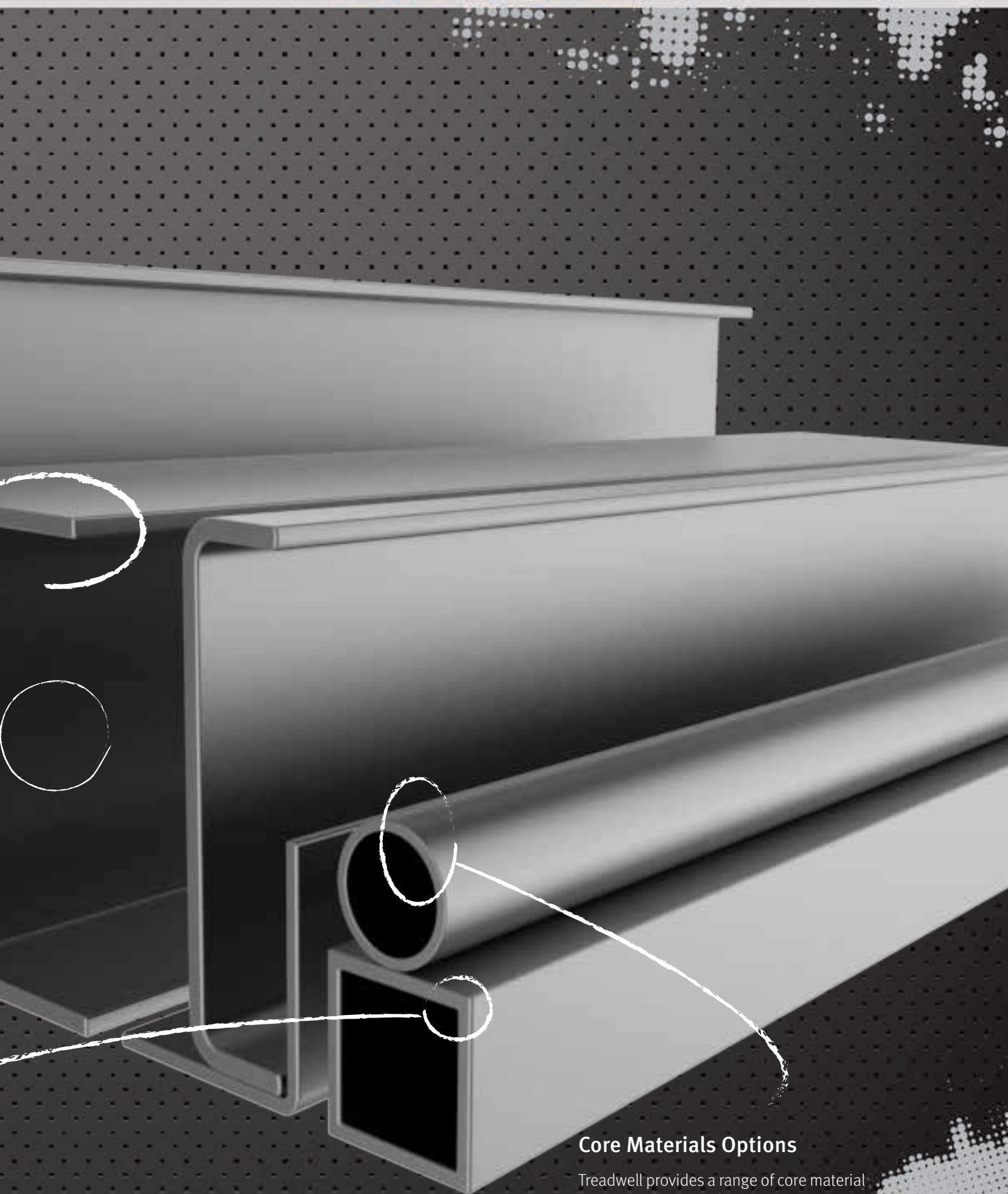
A standard shape customised into a pultrusion by modifying the resin or reinforcement to achieve a particular customer need.

## Optimising Resins

Standard resins can be modified or special resins can be used to maximise performance of the pultrusion in challenging environments, such as those found in high temperature or extremely corrosive areas. Typical resins include polyesters, vinylesters, PVC, epoxies, phenolics, urethanes and blends.

## Choice of Reinforcements

The type, form, placement and quantity of reinforcements can be customised to optimise economy, develop ascribed strength and create or enhance other physical characteristics of a pultruded part. Typical reinforcements used include glass or carbon fibres in multifilament strands, mat (long fibres held together with a resinous binder) or stitched fabrics.



### Core Materials Options

Treadwell provides a range of core material options with comprehensive experience in pultruding over various materials including foam, balsa, polyethylene and aluminium.



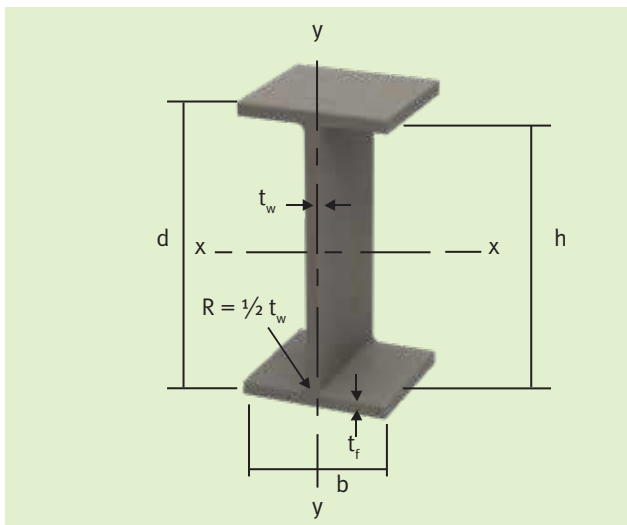
# I-Beam

## Sectional Properties – I-Beam

The section values shown on this page have been calculated from the nominal dimensions of the profile. All the shapes listed in the table are available but not all are stocked. For information on availability and price, contact Treadwell Group on 1800 246 800.

\*457.20 I Beam - Web = 9.53mm Flange = 12.70mm

\*609.60 I Beam - Web = 9.53mm Flange = 19.05mm

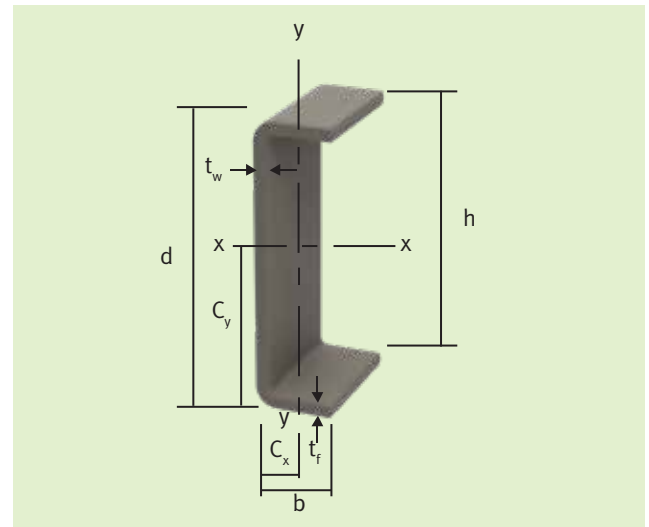


I-Beam		Sectional Dimensions				
Part	Part Number	d mm	b mm	t <sub>w</sub> mm	t <sub>f</sub> mm	h mm
		Web	Flange			
76.2 x 38.1 x 6.4mm I-Beam	F-P-IS(76/38/6.4)	76.2	38.1	6.4	6.4	63.50
88.9 x 38.1 x 4.8mm I-Beam	F-P-IS(89/38/4.8)	88.9	38.1	4.8	4.8	79.38
101.6 x 50.8 x 6.4mm I-Beam	F-P-IS(102/51/6.4)	101.6	50.8	6.4	6.4	88.90
139.7 x 63.5 x 6.4mm I-Beam	F-P-IS(140/64/6.4)	139.7	63.5	6.4	6.4	127.00
152.4 x 76.2 x 6.4mm I-Beam	F-P-IS(152/76/6.4)	152.4	76.2	6.4	6.4	139.70
152.4 x 76.2 x 9.5mm I-Beam	F-P-IS(152/76/9.5)	152.4	76.2	9.5	9.5	133.35
203.2 x 101.6 x 9.5mm I-Beam	F-P-IS(203/102/9.5)	203.2	101.6	9.5	9.5	184.15
203.2 x 101.6 x 12.7mm I-Beam	F-P-IS(203/102/12.7)	203.2	101.6	12.7	12.7	177.80
254 x 127 x 9.5mm I-Beam	F-P-IS(254/127/9.5)	254	127	9.5	9.5	234.95
254 x 127 x 12.7mm I-Beam	F-P-IS(254/127/12.7)	254	127	12.7	12.7	228.60
304.8 x 152.4 x 12.7mm I-Beam	F-P-IS(305/152/12.7)	304.8	152.4	12.7	12.7	279.40
457.2 x 9.5 x 114.3 x 12.7mm I-Beam	F-P-IS(457/9.5/114/12.7)	457.2	114.3	9.5	12.7	431.80
609.6 x 9.5 x 190.5 x 19.1mm I-Beam	F-P-IS(610/9.5/191/19.1)	609.6	190.5	9.5	19.1	571.50

# C Channel

## Sectional Properties - C Section

The section values shown on this page have been calculated from the nominal dimensions of the profile. All the shapes listed in the table are available but not all are stocked. For information on availability and price, contact Treadwell Group on 1800 246 800.



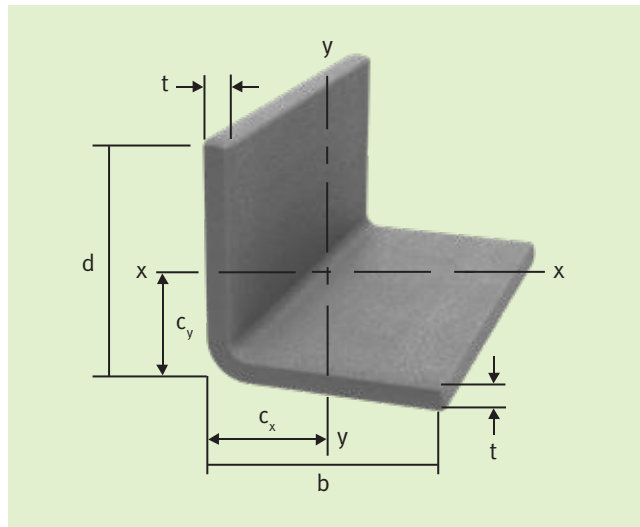
C Section		Sectional Dimensions						
Part	Part Number	d mm	b mm	t <sub>w</sub> mm	t <sub>f</sub> mm	h mm	C <sub>x</sub> mm	C <sub>y</sub> mm
		Web	Flange					
50.8 x 14 x 3.2mm C Section	F-P-CS(51/14/3.2)	50.8	14.2	3.2	3.2	44.75	3.761685	25.4
76.2 x 22.2 x 6.4mm C Section	F-P-CS(76/22/6.4)	76.2	22.2	6.4	6.4	63.5	6.443382	38.1
76.2 x 25.4 x 6.4mm C Section	F-P-CS(76/25/6.4)	76.2	25.4	6.4	6.4	63.5	7.408333	38.1
76.2 x 38.1 x 6.4mm C Section	F-P-CS(76/38/6.4)	76.2	38.1	6.4	6.4	63.5	11.83409	38.1
88.9 x 3.2 x 30.2 x 4.8mm C Section	F-P-CS(89/3.2/30/4.8)	88.9	30.2	3.2	4.8	79.375	8.775759	44.45
88.9 x 38.1 x 4.8mm C Section	F-P-CS(89/38/4.8)	88.9	38.1	4.8	4.8	79.375	10.54554	44.45
101.6 x 28.6 x 6.4mm C Section	F-P-CS(102/29/6.4)	101.6	28.6	6.4	6.4	88.9	7.52337	50.8
101.6 x 34.9 x 4.8mm C Section	F-P-CS(102/35/4.8)	101.6	34.9	4.8	4.8	92.075	8.886887	50.8
139.7 x 38.1 x 6.4mm C Section	F-P-CS(140/38/6.4)	139.7	38.1	6.4	6.4	127	9.128125	69.85
152.4 x 41.3 x 6.4mm C Section	F-P-CS(152/41/6.4)	152.4	41.3	6.4	6.4	139.7	9.661071	76.2
152.4 x 42.9 x 9.5mm C Section	F-P-CS(152/43/9.5)	152.4	42.9	9.5	9.5	133.35	11.28505	76.2
203.2 x 55.6 x 9.5mm C Section	F-P-CS(203/56/9.5)	203.2	55.6	9.5	9.5	184.15	13.42547	101.6
254 x 69.9 x 12.7mm C Section	F-P-CS(254/70/12.7)	254	69.9	12.7	12.7	228.6	17.18879	127
292.1 x 69.9 x 12.7mm C Section	F-P-CS(292/70/12.7)	292.1	69.9	12.7	12.7	266.7	16.17266	146.05
304.8 x 76.2 x 12.7mm C Section	F-P-CS(305/76/12.7)	304.8	76.2	12.7	12.7	279.4	17.55588	152.4
355.6 x 88.9 x 19.1mm C Section	F-P-CS(356/89/19.1)	355.6	88.9	19.1	19.1	317.5	22.06218	177.8
457.2 x 60.32 x 9.5mm C Section	F-P-CS(457/60/9.5)	457.2	60.3	9.5	9.5	438.15	10.24659	228.6



## Equal Leg Angle

### Sectional Properties - Equal Leg Angle

The section values shown on this page have been calculated from the nominal dimensions of the profile. All the shapes listed in the table are available but not all are stocked. For information on availability and price, contact Treadwell Group on 1800 246 800.

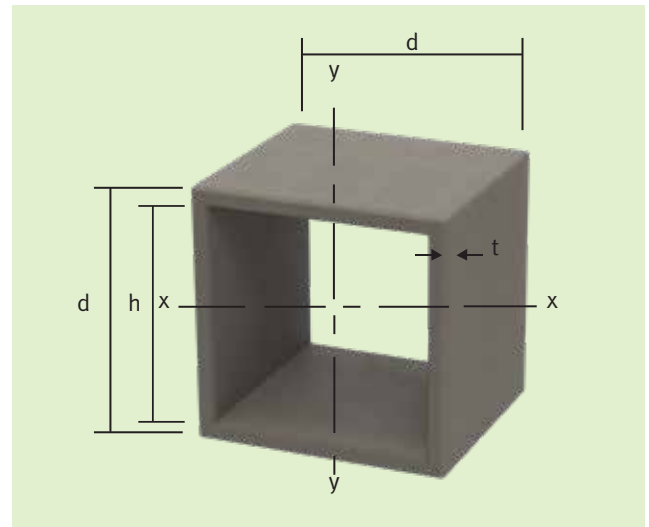


Equal Leg Angle		Section Dimensions					
Part	Part Number	d mm	b mm	t mm	C <sub>x</sub> /C <sub>y</sub> mm	Area mm <sup>2</sup>	Weight Kg./m
25.4 X 3.2mm Equal Leg Angle	F-P-ELA(25/3.2)	25.4	25.4	3.2	7.51	151.17	0.27
31.8 X 3.2mm Equal Leg Angle	F-P-ELA(32/3.2)	31.8	31.8	3.2	9.11	191.48	0.35
38.1 X 4.8mm Equal Leg Angle	F-P-ELA(38/4.8)	38.1	38.1	4.8	11.27	339.29	0.61
38.1 X 6.4mm Equal Leg Angle	F-P-ELA(38/6.4)	38.1	38.1	6.4	11.83	443.44	0.80
50.8 X 6.4mm Equal Leg Angle	F-P-ELA(51/6.4)	50.8	50.8	6.4	15.03	604.69	1.09
76.2 X 6.4mm Equal Leg Angle	F-P-ELA(76/6.4)	76.2	76.2	6.4	21.40	927.19	1.67
76.2 X 9.5mm Equal Leg Angle	F-P-ELA(76/9.5)	76.2	76.2	9.5	22.54	1360.55	2.45
76.2 X 12.7mm Equal Leg Angle	F-P-ELA(76/12.7)	76.2	76.2	12.7	23.67	1773.75	3.20
101.6 X 6.4mm Equal Leg Angle	F-P-ELA(102/6.4)	101.6	101.6	6.4	27.76	1249.69	2.25
101.6 X 9.5mm Equal Leg Angle	F-P-ELA(102/9.5)	101.6	101.6	9.5	28.91	1844.30	3.32
101.6 X 12.7mm Equal Leg Angle	F-P-ELA(102/12.7)	101.6	101.6	12.7	30.06	2418.75	4.36
152.4 X 9.5mm Equal Leg Angle	F-P-ELA(152/9.5)	152.4	152.4	9.5	41.63	2811.80	5.07

## Square Hollow Section

### Sectional Properties - Square Hollow Section

The section values shown on this page have been calculated from the nominal dimensions of the profile. All the shapes listed in the table are available but not all are stocked. For information on availability and price, contact Treadwell Group on 1800 246 800.



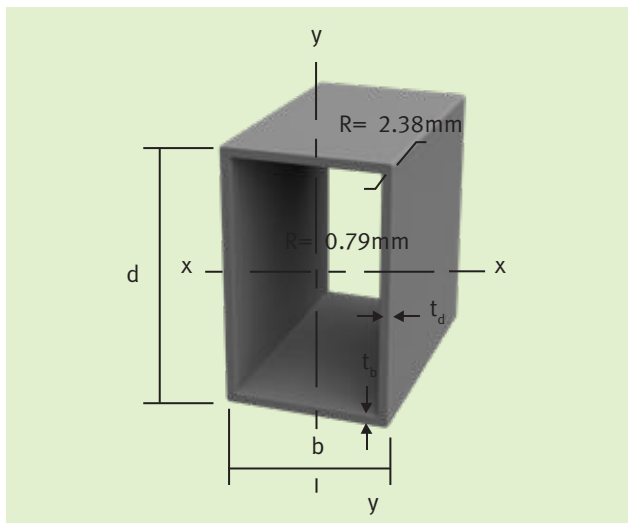
Square Hollow Section	Section Dimensions			
Part	Part Number	d mm	t mm	h mm
25.4 X 3.2mm Square Hollow Section	F-P-SHS(25/25/3.2)	25.4	3.2	19.05
25.4 X 6.4mm Square Hollow Section	F-P-SHS(25/25/6.4)	25.4	6.4	12.70
31.8 X 3.2mm Square Hollow Section	F-P-SHS(32/32/3.2)	31.8	3.2	25.40
31.8 X 6.4mm Square Hollow Section	F-P-SHS(32/32/6.4)	31.8	6.4	19.05
38.1 X 3.2mm Square Hollow Section	F-P-SHS(38/38/3.2)	38.1	3.2	31.75
38.1 X 6.4mm Square Hollow Section	F-P-SHS(38/38/6.4)	38.1	6.4	25.40
44.5 X 3.2mm Square Hollow Section	F-P-SHS(45/45/3.2)	44.5	3.2	38.10
44.5 X 6.4mm Square Hollow Section	F-P-SHS(45/45/6.4)	44.5	6.4	31.75
50.8 X 3.2mm Square Hollow Section	F-P-SHS(51/51/3.2)	50.8	3.2	44.45
50.8 X 6.4mm Square Hollow Section	F-P-SHS(51/51/6.4)	50.8	6.4	38.10
50.8 X 9.5mm Square Hollow Section	F-P-SHS(51/51/9.5)	50.8	9.5	31.75
57.2 X 3.2mm Square Hollow Section	F-P-SHS(57/57/3.2)	57.2	3.2	50.80
76.2 X 3.2mm Square Hollow Section	F-P-SHS(76/76/3.2)	76.2	3.2	69.85
76.2 X 6.4mm Square Hollow Section	F-P-SHS(76/76/6.4)	76.2	6.4	63.50
88.9 X 6.4mm Square Hollow Section	F-P-SHS(89/89/6.4)	88.9	6.4	76.20
101.6 X 6.4mm Square Hollow Section	F-P-SHS(102/102/6.4)	101.6	6.4	89.90
101.6 X 8mm Square Hollow Section	F-P-SHS(102/102/8)	101.6	8	85.6
101.6 X 9.5mm Square Hollow Section	F-P-SHS(102/102/9.5)	101.6	9.5	82.55
127 X 8mm Square Hollow Section	F-P-SHS(127/127/8)	127	8	111
152.4 X 9.5mm Square Hollow Section	F-P-SHS(152/152/9.5)	152.4	9.5	133.35



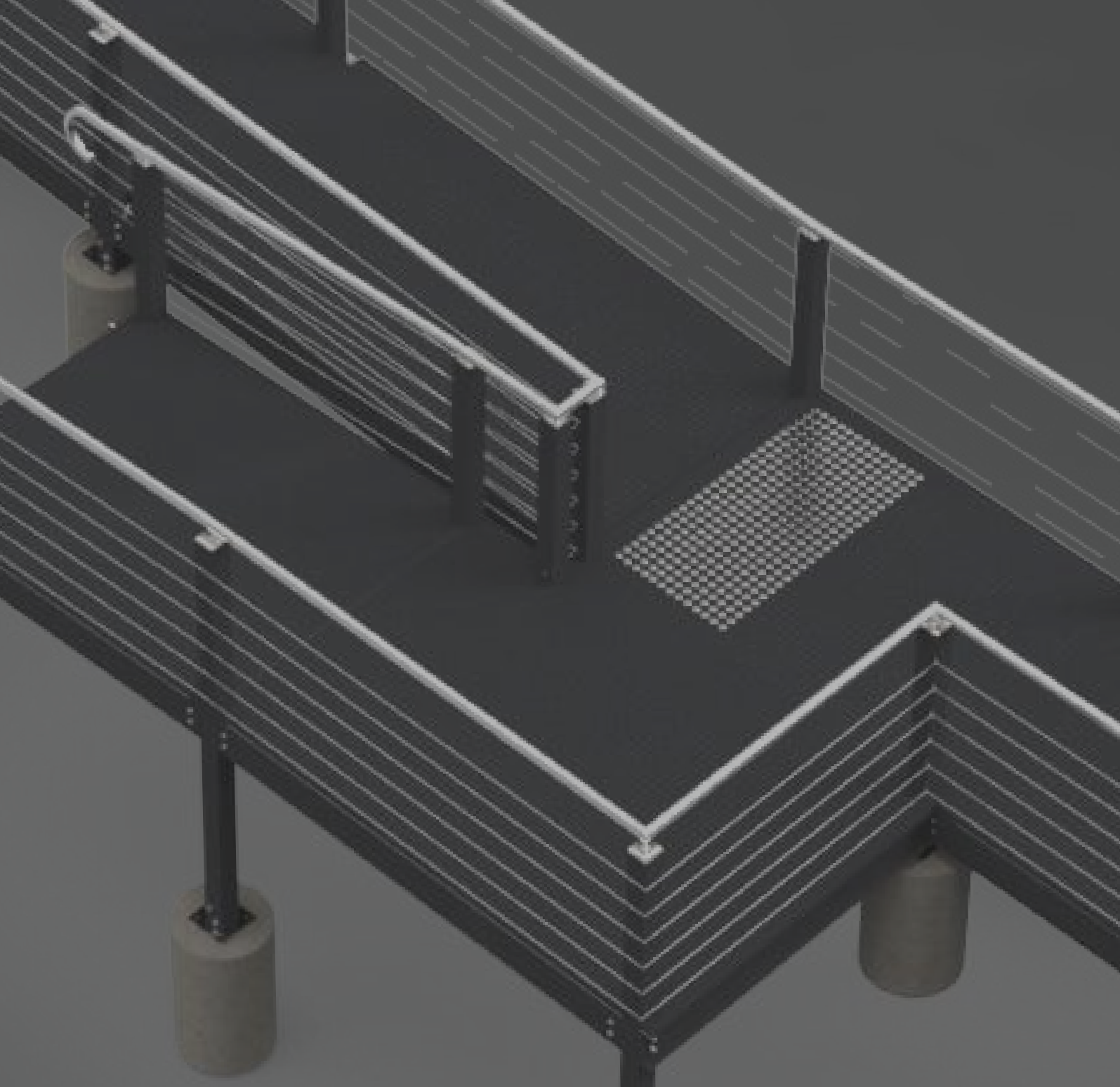
## Rectangular Hollow Section

### Sectional Properties – Rectangular Hollow Section

The section values shown on this page have been calculated from the nominal dimensions of the profile. All the shapes listed in the table are available but not all are stocked. For information on availability and price, contact Treadwell Group on 1800 246 800.



Rectangular Hollow Section		Section Dimensions			
Part	Part Number	d mm	b mm	t <sub>d</sub> mm	t <sub>b</sub> mm
38.1 X 19.1 X 3.2mm Rectangular Hollow Section	F-P-RHS(38/19/3.2)	38.1	19.1	3.2	3.2
38.1 X 25.4 X 3.2mm Rectangular Hollow Section	F-P-RHS(38/25/3.2)	38.1	25.4	3.2	3.2
50.8 X 25.4 X 3.2mm Rectangular Hollow Section	F-P-RHS(51/25/3.2)	50.8	25.4	3.2	3.2
101.6 X 25.4 X 3.2mm Rectangular Hollow Section	F-P-RHS(102/25/3.2)	101.6	25.4	3.2	3.2
101.6 X 3.2 X 50.8 X 6.4mm Rectangular Hollow Section	F-P-RHS(102/3.2/51/6.4)	101.6	50.8	3.2	6.4
111.1 X 3.2 X 34.9 X 4.8mm Rectangular Hollow Section	F-P-RHS(111/3.2/35/4.8)	111.13	34.93	3.2	4.8
139.7 X 88.9 X 6.4mm Rectangular Hollow Section	F-P-RHS(140/90/6.4)	139.70	88.90	6.4	6.4
152.4 X 101.6 X 6.4mm Rectangular Hollow Section	F-P-RHS(152/102/6.4)	152.40	101.60	6.4	6.4



## TREADWELL

Treadwell brands mentioned in this document are all registered brands of Treadwell Group Pty Ltd. All pictures and information are supplied as a guide only. The complete range of Treadwell products are developed, refined, made to meet and exceed stringent specifications for the worldwide market.

Important Note: Sales of products are subject to our Terms and Conditions which are available upon request. All specifications and photos are a guide only and are subject to change without notice. Please ring to confirm details. Treadwell products stated only comply with relevant standards mentioned within this publication when installed and used as they are designed to be.

