



PRODUCT GUIDE

ROOFING SOLUTIONS

ROOFING, CLADDING AND RAINWATER SYSTEMS





CONTENTS

About Steel & Tube's Roofing Services		Contemporary	6
Quality		Fascia Systems	7
Products You Can Rely On		Commercial Gutters	7
Choosing the Right Product			
Roofing	1	Technical Details	8
Corrugated	1	Materials	8
Trapezoidal	1	Minimum Pitch	8
Trough Section	3	Storage	8
Curved	4	Installation	8
Common Flashings	5	Design for Durability	9
Wall Cladding	5	Warranties & Environments	9
Rainwater Systems	6	Maintenance	10
Traditional	6	Overpainting	10
		Drinking Water	10

ABOUT STEEL & TUBE'S ROOFING SERVICES

Steel & Tube manufacture and market long run roofing materials, rainwater goods and accessories, with manufacturing sites around the country.

Our high-strength galvanised cold-formed steel purlins also provide a complete system suitable for supporting a wide range of roofing and cladding materials.

We offer a comprehensive range of services to accompany and support our product portfolio. These include product specialists and technical experts who are trained to assist with technical enquiries, design specifications and product selection, and are available to all our customers through our local branch network.

QUALITY

Our services adhere to the strictest quality controls and our facilities are Telarc ISO 9001 certified and our practices comply with international and local manufacturing standards.

PRODUCTS YOU CAN RELY ON

- Made in New Zealand
- NZ Building Code Compliant
- Wide Colour Range
- Custom Flashings Available
- Corrosion Resistant Coatings
- Suitable Materials for Marine Environments
- Durable and Weather Proof
- Warranty*Plus*

CHOOSING THE RIGHT PRODUCT

New Zealand has a wide range of environmental conditions, from harsh West Coast beaches to moderate inland locations to industrial and geothermal sites like no other on earth.

Prior to selecting a product from this guide, discuss your particular site requirements with a Steel & Tube representative to ensure the profile and finish will perform to your requirements.



ROOFING

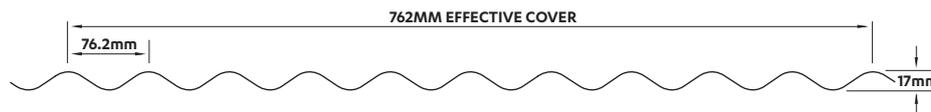


CORRUGATED

Corrugated roofing offers the timeless elegance and matchless adaptability of the traditional corrugate profile, together with unrivalled technical advice, quality control and after-sales service.



CUSTOM ORB®



TRAPEZOIDAL

Trapezoidal, or rib, profiles have sloping-sided ribs and are fastened through the profile. They are available in a number of configurations to suit a vast range of performance and appearance criteria.

They can be categorised by common application into Residential/Commercial and Commercial/Industrial groups.

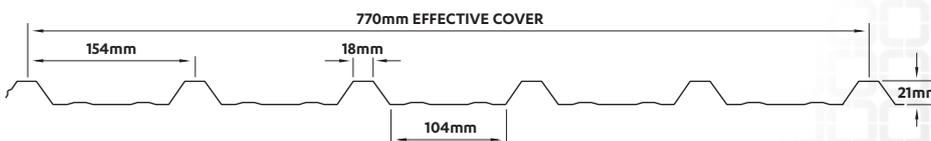
RESIDENTIAL AND COMMERCIAL PROFILES

Steel & Tube offer four **Trapezoidal** rib products with rib heights varying between 20mm and 30mm. These are typically utilised in domestic roofing, or for commercial roofing and cladding applications where spanning ability is not a prime requirement.



SIX RIB

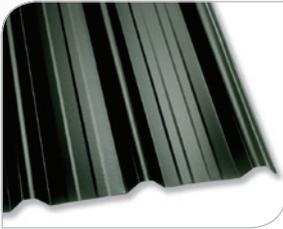
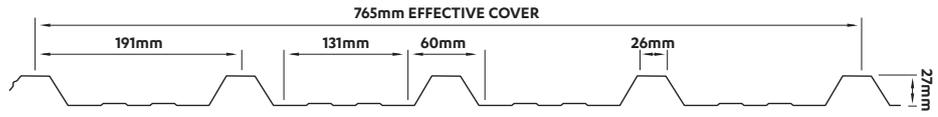
Six Rib has a more subtle rib and wider pan, for an attractive, economical solution to most domestic roofing applications.



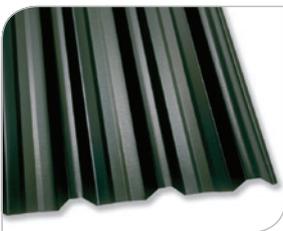
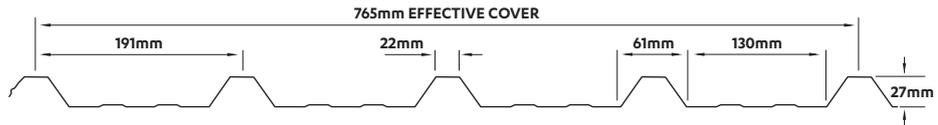
Because both **Plumbdek®** and **Trimform®** profiles feature a strong rib design coupled with wide economical cover, they are equally at home in residential applications or at work in commercial situations.



PLUMBDEK®

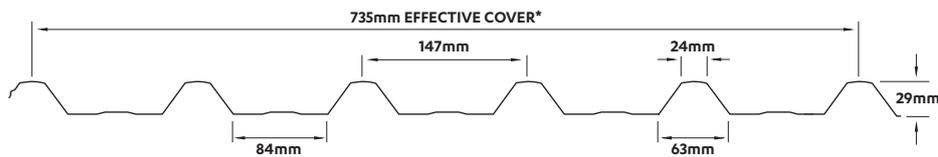


TRIMFORM®



TRIMLINE®

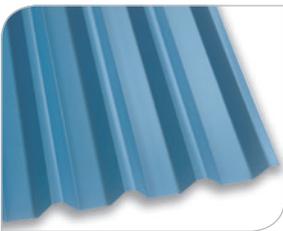
Trimline has six bold ribs making it an exceptionally attractive and high performing roofing and cladding profile.



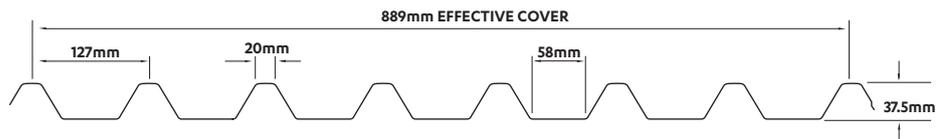
*** Note:** Regional variances can occur with different base materials and thicknesses. If cover is crucial, please discuss with Steel & Tube prior to ordering.

COMMERCIAL/INDUSTRIAL PROFILES

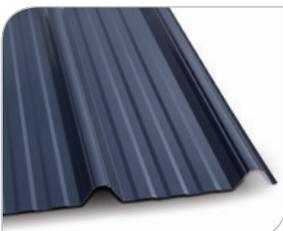
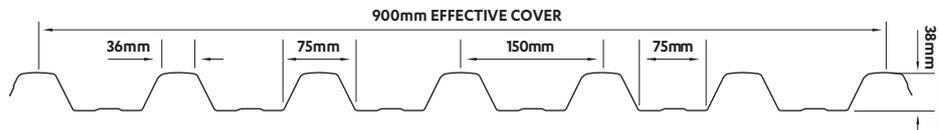
Where larger spans or greater robustness is required, the higher-ribbed trapezoidals make their mark. **ST7®** and **ST900®** have medium height ribs of 37.5mm, giving a bolder look for residential applications and enhanced strength for commercial and industrial work.



ST7®

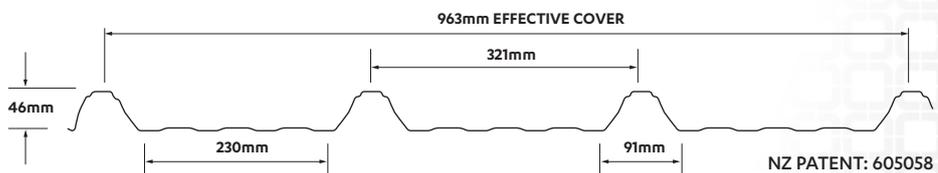


ST900®



ST963

ST963 is a profiled metal roofing and cladding profile manufactured by Steel & Tube, having four trapezoidal ribs of 46mm in height. Unique design enhancements stiffen the rib shape to provide industry-leading resistance to both wind uplift and point load distortion.



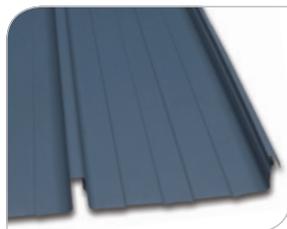


TROUGH SECTION

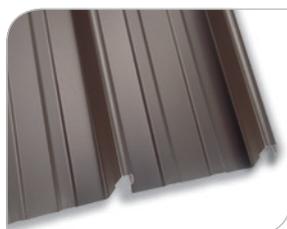
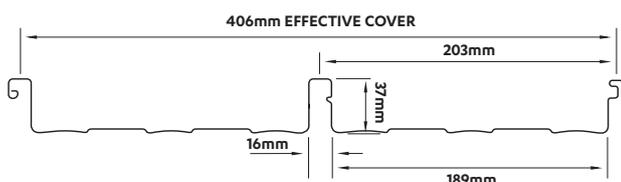
Steel & Tube's roofing products trough section profiles are designed to meet a variety of needs from low pitch and long lengths to steep pitches where the clean lines are enhanced by the secret fixings.

Paneldek®, with its unique hinge locking action, is a favourite with designers and installers while **Kliplok** and **Hi Rib** deliver exceptional performance capabilities because they are both manufactured from High Tensile Steel.

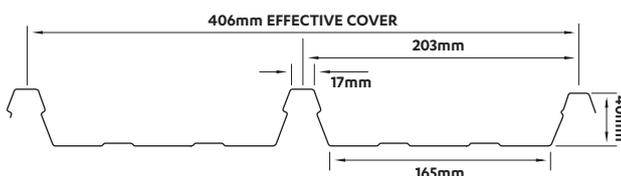
In some cases indentations from the clips may be noticeable although this should become less noticeable with weathering over time.



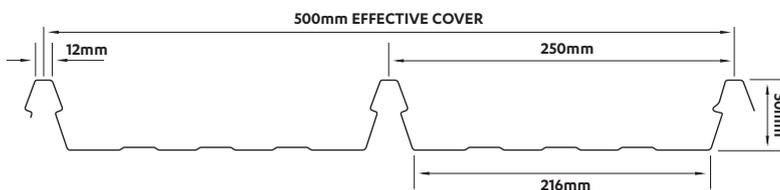
PANELDEK®



KLIPILOK



HI RIB



CURVED

Steel & Tube is equipped to precurve corrugate and four trapezoidal profiles in residential or commercial designs where radii exceed the limits for drape or spring curving. Guidelines on **Spring Curving** are available from your nearest Steel & Tube roofing branch.



CORRUGATE

CUSTOM ORB® may be roll curved to the fashionable barrel roll or to the tighter, more traditional bullnosing; both requiring a special grade of material which may need to be ordered in advance.



CRIMP CURVED

Trimline®, Plumbdek®, Six Rib, and **ST900** can be crimp curved down to a minimum radius of 400mm.



LEGACY®

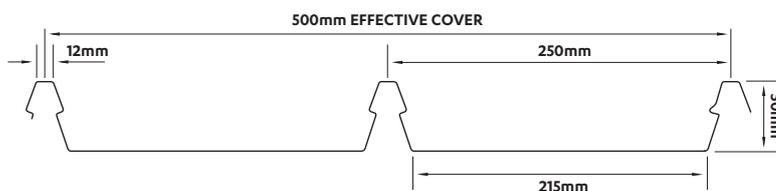
LEGACY® has been specifically introduced to complement our EuroLine range of roofing products, with their unmistakable eighteenth century standing seam roofing style.

It incorporates modern high strength roll forming technology to eliminate the need for supporting plywood substrate and is available in continuous lengths.

It is important to note that an architectural feature of this product is the undulation of the wide flat pan of the profile. In some situations, indentations caused by fixing clips or purlins may be noticeable although this should become less apparent with weathering over time.



LEGACY®



EUROLINE®

Euroline® is an elegant descendant of eighteenth century standing seam roofing which, because of Steel & Tube's modern rollforming technology, is now available in continuous lengths.

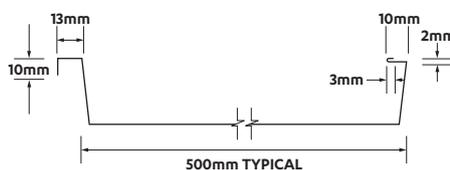
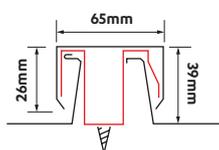
Euroline® is obtainable in two profiles: **Battenlok** and **Seamlok**. Standard pan widths are typically 500mm, but 300mm or 400mm can also be supplied.

For wall cladding, **Seamlok** is the recommended profile.

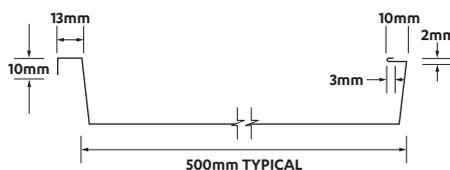
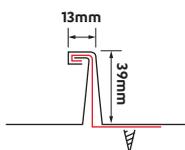
It is important to note that an architectural feature of this product is the undulation in the wide flat pans.



BATTENLOK

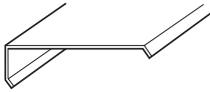


SEAMLOK

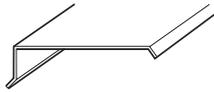


COMMON FLASHINGS

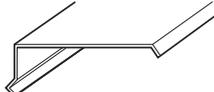
KICK IN BARGE



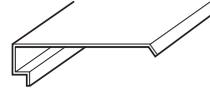
KICK OUT BARGE



BIRDS BEAK BARGE



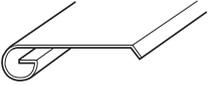
SQUARE BARGE



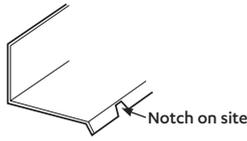
SOFT EDGE BARGE



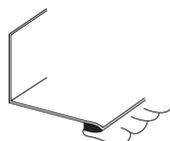
BARGE ROLL



NOTCHED APRON



SOFT EDGE APRON



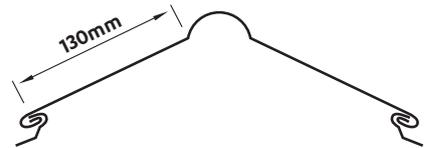
ABUTMENT OR SIDE FLASHING



STANDARD VALLEY

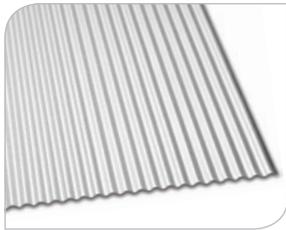


For corrugate barges, your supplying branch may have dimensions standard for their area. Other profiles dimensions should be specified by the installer. Internal angles on soft edge or notched barge or apron also need to be specified.



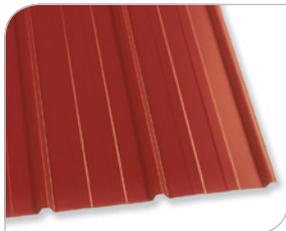
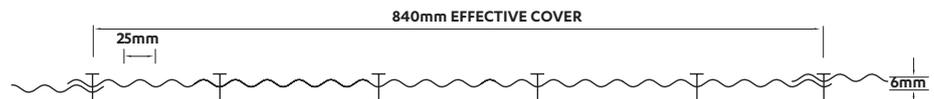
*200mm wide cover ridge is also available.

WALL CLADDING



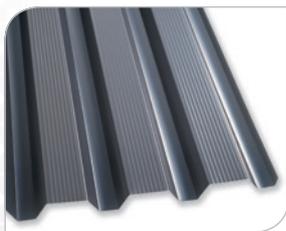
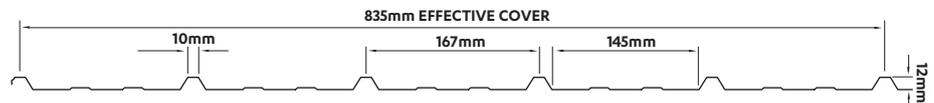
MINI ORB

Mini Orb is defined by its close sinusoidal curves. Originally developed for interior design applications, Mini Orb is finding increasing utility as exterior cladding and for external decorative features.



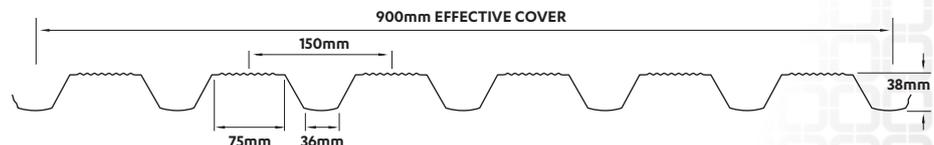
TRIMKLAD®

Trimklad® has an unobtrusive rib and a very wide swaged pan for any installation where a neat appearance and lower labour costs are an essential design criteria.



STC900®

STC900® is specially designed for pan-out wall cladding or canopies where the normal underside of the profile is exposed to view. Fine flutes in the face highlight the surface and accentuate the negative detail, while modifications to the side lap detail means that weatherproofness and good looks are maintained on both sides of the profile.



Please Note: All profile dimensions are nominal.



RAINWATER SOLUTIONS

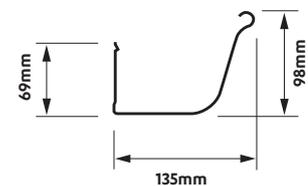


TRADITIONAL

CUSTOMLINE®

- **Customline®** is a larger, long run version of the classic quarter round, and is deeper than other designs, for greater water carrying capacity and enhanced aesthetic appeal.
- **Customline®** can be fitted with fully concealed brackets to enhance the clean smooth lines or with external brackets, for a timeless classic look.

CROSS SECTIONAL AREA
7163mm²

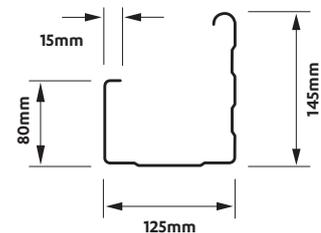


CONTEMPORARY

PLUMBLINE®

- **Plumblineline®** provides a large capacity domestic spouting which is also at home on smaller commercial work.
- **Plumblineline®** has a strong profile with a double swaged face and swaged base.
- **Plumblineline®** is fixed using concealed clips for emphasis of its bold lines.

CROSS SECTIONAL AREA
10000mm²



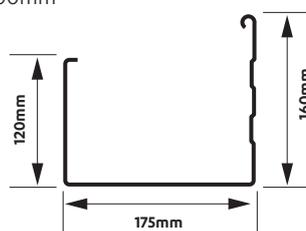
COMMERCIAL GUTTERS

The most commonly specified commercial gutters are 175mm and 300mm, however, as each is specifically folded, the dimensions can be varied greatly to suit any application, provided appropriate fixing brackets are sourced.

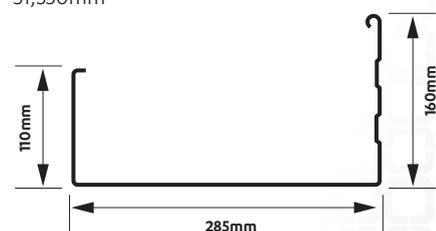
Standard pressed internal brackets are available for the 175 gutter, however for extra strength, specially fabricated steel external brackets are recommended (colour matched if required).

Steel & Tube provides details regarding industrial gutter bracket design and placement, available from our website www.steelandtube.co.nz.

175 GUTTER
CROSS SECTIONAL AREA
21,000mm²



300 GUTTER
CROSS SECTIONAL AREA
31,350mm²



Note:

Dimensions shown are indicative only as regional differences occur due to local preference.

Please contact your local Steel & Tube branch for more information.



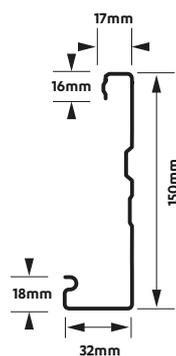
FASCIA SYSTEMS

MULTI-LINE® FASCIA

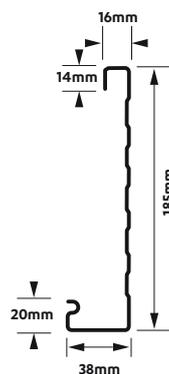
- An attractive and economical advance over timber fascias, **Multi-line® Fascia** can be fitted with a range of spoutings for contemporary or traditional appearances.
- **Multi-line® Fascia** uses a uniquely designed rafter bracket to prevent denting and damage in metal fascias due to differential movement of trusses and rafters.

Steel & Tube's fascia systems are available exclusively through qualified installers.

MULTI-LINE® FASCIA 150



MULTI-LINE® FASCIA 185





TECHNICAL DETAILS

MATERIALS

All our products are available in a wide range of materials and finishes. The following are some of the options:

Metallic Coated:

Galvanised Steel, Zinc/Aluminium coated steel.

Pre-Painted Steel:

COLORSTEEL® ENDURA®, COLORSTEEL® MAXX®, ColorCote® ZinaCore™ and ColorCote® MagnaFlow™.

Pre-Painted Aluminium:

ColorCote® AlumiGard™.

Other:

Aluminium plain or mill finished, stainless steel, pure copper or solid zinc, all subject to profile choice and material availability.

MINIMUM PITCH

To comply with E2/AS1 the recommended minimum pitch for roofing is:

CUSTOM ORB	SIX RIB	ALL OTHER ROOFING PROFILES
8°	4°	3°

STORAGE

Products are despatched from the factory in top condition, however the material can be damaged before installation by incorrect storage practices. Premature deterioration due to incorrect storage may be avoided if these simple guidelines are followed:

- On arrival, ensure sheets are dry. If wet, open the pack and separate the sheets to allow them to dry. Store packs of the product off the ground in a sheltered position providing some fall to allow water to run off. Protect packs with a loose fitting waterproof cover, allowing air to circulate.
- Contact with wet cement should be avoided at all times.

INSTALLATION

The installation of metal roofing products is a specialised field requiring knowledge and experience of numerous issues with regard to trade practice and material compatibility.

- Poor handling prior to or during installation can cause damage which may affect the appearance and ultimate performance of the product. Don't handle sheets roughly or carelessly or drag or slide sheets over each other or rough surfaces, as damage to the coating may occur. Equipment used to handle the sheets should be clean and free of dirt and grit.
- Soft-soled shoes should be worn whenever walking on the product to prevent damage to the coating; traffic up the roof should be in the pans of the profile and across the roof should be on the purlin line.
- Prior to installation, ensure that the tops of the purlins or girts are all in the same plane; if packing or easing is necessary ensure this is not to the detriment of the connection between the fastener and the structure.
- Sheets should be lapped away from the line of sight wherever possible to enhance aesthetic appeal and all sheets should be stop ended at the top, and lipped at the bottom on pitches below 8°.
- Ensure that the anti-capillary edge is fitted as the external overlap and is visible from the top side.
- The use of touch-up paints is not recommended; if a pre-painted sheet is excessively damaged by scratching, it should be replaced. Accessories should be colour-matched prior to installation.
- Regularly clean up the area by sweeping swarf, offcuts, rivet shanks and loose fasteners with a soft-bristled broom. Collect and remove all debris daily as unsightly staining from swarf and other unprotected steel items can occur overnight.
- The strippable film applied to some prepainted products must be removed within two weeks of installation, or earlier if storage is in direct sunlight.
- Recommended references are the NZMRM *Profiled Metal Roofing Code of Practice* and *Acceptable Solutions E2/AS1*.

DESIGN FOR DURABILITY

Steel & Tube roofing and cladding solutions are available on our website, providing design and installation details for residential and commercial applications.

Contact your local branch or the Technical Helpline on 0800 333 247 for specific advice.

With correct product selection, installation and maintenance, your Steel & Tube roof will remain attractive and weatherproof for many years. Unfavourable design practices will detrimentally affect the performance of your roof and should be avoided. If any of the following situations are evident in your design, you should contact your Steel & Tube representative for advice.

- Areas of roofing, cladding and rainwater systems unwashed by rainfall will accumulate atmospheric debris which can become corrosive when damp. These areas will require maintenance depending on the product used and the environment. Refer to the Maintenance section of this publication.

- Do not discharge water runoff from inert materials such as ZINCALUME steel, pre-painted roofing, tiles or clear sheeting onto unpainted galvanised roofing and gutters, as the corrosive salts formed in this situation are unstable and can lead to premature corrosion.
- Where two different metals are in contact, one metal will tend to sacrifice itself to protect the other. A similar effect can occur with water flowing over dissimilar metals. In particular, avoid runoff from copper or brass onto ZINCALUME steel roofing, and avoid contact with, or runoff from unpainted lead onto ZINCALUME steel.
- Fasteners should be compatible with the roofing material chosen and have durability not less than the material being fastened. Stainless steel or aluminium fasteners should be used with pre-painted aluminium roofs in accordance with the specific manufacturers recommendations.
- Wall cladding should terminate at least 50mm above ground level. Lower edges of sheets must be kept clear of vegetation and debris.

WARRANTIES & ENVIRONMENTS

WARRANTYPLUS

Steel & Tube offer exclusively to our customers, the unparalleled peace of mind afforded by **WarrantyPlus**.

WarrantyPlus covers an extended range of criteria, is supported back to back by our suppliers, includes site-specific maintenance requirements and is transferable to subsequent owners.

WarrantyPlus for pre-painted products in residential roofing applications is available for up to 30 years against perforation as a result of corrosion and up to 18 years against flaking, peeling and excessive fade of the coating, depending on the environment and coating system.

WarrantyPlus guarantees that your roof will be a suitable surface for the collection of rain water for drinking.

Non-residential warranties are for a maximum of 15 years duration.

Refer to your nearest Steel & Tube representative and *New Zealand Steel's Environmental Categories Warranty & Product Maintenance Recommendations – Steel Roofing and Cladding* for additional information on warranties.

ENVIRONMENTS

The following guide is an indication of product recommendations for residential roofing, rainwater systems and walling. Wall cladding and rainwater systems are often less effectively rain washed than roofing, so selecting a suitably durable material is important.

Your nearest Steel & Tube representative will be happy to give you specialist advice for your area.

Marine environmental category is better expressed by way of defining characteristics rather than distance from water, typical zones are given for additional guidance only.

CHOOSING THE RIGHT PRODUCT

CATEGORY	CHARACTERISED BY	TYPICAL ZONES	SUGGESTED MATERIAL	
			ROOFING AND RAINWATER SYSTEMS	WALL CLADDING
VERY SEVERE MARINE	<ul style="list-style-type: none"> • Heavy salt deposits • Almost constant smell of salt spray in air 	Within 25 metres from breaking surf on East Coast and 50 metres from breaking surf on West Coast	ColorCote AlumiGard	ColorCote AlumiGard
		Within 25-100 metres from breaking surf on East Coast, 50-200 metres from breaking surf on West Coast	COLORSTEEL MAXX	Colorcote AlumiGard
SEVERE MARINE	<ul style="list-style-type: none"> • Light salt deposits • Frequent smell of salt in the air 	Commencing from Very Severe zone up to 500 metres or more inland from breaking surf; or in the immediate vicinity of calm salt water such as harbour foreshores	COLORSTEEL MAXX or COLORSTEEL ENDURA	COLORSTEEL MAXX
MODERATE MARINE	<ul style="list-style-type: none"> • Little or no salt deposits • Occasional smell of salt in the air 	500 metres to 1km from breaking surf; or in the immediate vicinity of calm salt water such as estuaries	COLORSTEEL ENDURA or ZINCALUME	COLORSTEEL ENDURA
MODERATE INLAND	<ul style="list-style-type: none"> • No obvious marine influences 	More than 1000 metres from salt water	COLORSTEEL ENDURA or ZINCALUME	COLORSTEEL ENDURA or ZINCALUME

Please Note: Industrial and Geothermal areas are subject to individual assessment. The above terms are subject to correct design, storage, installation and maintenance provisions. Marine environments may be extended inland by prevailing winds and local conditions. Contact your local Steel & Tube branch to discuss on 0800 427 663.

MAINTENANCE

Few products are absolutely maintenance-free and all Steel & Tube profiles are subject to the cumulative effects of weather, dust and other airborne deposits, some of which are extremely aggressive. WARRANTIES & ENVIRONMENTS on Page 9 will assist in identifying the category into which the site fits. In order to ensure the maximum service life from the chosen coating system, the property owner should note the following maintenance advice:

- Soft-soled shoes should be worn whenever walking on roofing to prevent damage to the coating; walk only in the pans of the profile, and on the purlin line whenever possible.
- Normal rainwashing will remove most accumulated atmospheric debris, but manual washing is required for areas which do not receive adequate rainwashing. These areas, such as wall cladding under eaves, or sheltered areas where

overlapping of roof areas occurs due to the design, are known as unwashed areas.

- Other high risk areas that require manual washing include around flues and extractor vents, under television aerials and trees and sites prone to mould, lichen, bird droppings or debris.
- Spoutings and gutters must be regularly inspected to remove debris, which may cause ponding.
- Surfaces may be washed with water and a soft-bristled brush, or for larger areas waterblasting at pressures up to 20 MPa may be more appropriate.
- The following table shows maintenance requirements for roofing products relative to the environment in which the building is located.

THESE RECOMMENDATIONS ARE DEPENDANT ON SELECTION OF THE APPROPRIATE ROOFING MATERIAL FOR THE PREVAILING ENVIRONMENT.

MATERIAL	ENVIRONMENT	MAINTENANCE REQUIREMENT			
		ROOF	WALLS	RAINWATER SYSTEMS	UNWASHED AND HIGH RISK AREAS
PRE-PAINTED STEEL	Very severe	Rainwashing Only	Wash every 3 months	Wash monthly	Wash monthly
	Severe	Rainwashing Only	Wash every 6 months	Wash every 3 months	Wash every 3 months
	Moderate	Rainwashing Only	Wash every 12 months	Wash every 6 months	Wash every 3 months
ZINCALUME	Moderate	Rainwashing Only	Wash every 6 months	Wash every 3 months	Wash every 3 months

OVERPAINTING

- Galvanised or ZINCALUME products can be overpainted immediately or after weathering. Use primer and top coat from a reputable paint manufacturer suitable for galvanised steel.
- Do not use calcium plumbate primers if rain water is to be collected for drinking purposes.
- Pre-painted roofing is best left weathered for at least twelve months prior to overpainting, unless special steps are taken to improve adhesion.

DRINKING WATER

- Pre-painted and metallic coated products are suitable for the collection of drinking water.
- On new installations the first 25mm of rainfall should be discarded to avoid contamination from any manufacturing or installation residue.
- Some post-painted systems are unsuitable for the collection of drinking water. Check with the paint supplier for compatibility.

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The ST963 profile is a registered patent - New Zealand Patent Number: 605058.

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