MRM
MABATI ROLLING MILLS

PRODUCT GUIDE

A member of the
SAFAL GROUP

Lifestile

beauty that lasts a lifetime

50 YEAR WARRANTY

IT'S NOT JUST A ROOF
IT'S A LIFESTILE

Premium stone coated roofing tiles

MRM

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www.mabati.com

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Proudly building Kenya for over 50 years

Africa's first manufacturer of Aluminium-Zinc coated steel

ZincAL®

Premium manufacturers of world class colour-coated Zincal

COLORPLUS® Optima Plus Optima

Roofing brands that are trusted and loved by millions in East Africa

DUMURANGI DUMUZAS RESINCOT MaxCover covermax

Trimflute tekdek IT5 minicorr corrugated SAFLOK concealed fix roofing

VERSATILE ELEGANTILE ZENTILE Orientile

Lifestile Stone-coated roof tiles SAFDECK ULTRA-SPAN® LIGHT GAUGE STEEL TRUSS SYSTEM NEWLOK standing seam roofing

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DUMUZAS®

Guaranteed to last

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INDEX

Colour-Coating Brands	
ZincAl	06
ColorPlus	13
Optima	21
OptimaPlus	
Roofing Terminology	25
Roof Sheeting Index	26
Minicorr	27
Dumuzas	29
Dumurangi	30
Resincot	32
Covermax	34
MaxCover	36
Trimflute	38
Tefdek-IT5	40
Saflok 700	42
Newlok	46
Flashings and Closures	50
General Notes	51
Bullnosing and Cranking	52
Additional Services	54
Tiling Index	55
Versatile	56
Zentile	57
Orientile	58
Elegantile	59
Tile Profiled Sheets - Installation Handling & Maintenance	60
Lifestile Range	62
Flashings for Tile Profiles	65
Safdek	66
Ultra Span	70
Accessories	77
Fixtite Screws	78
Saftherm	84
Ventilators and Louvers	88
Foam Fillers	90
Butyl Tape	91
Ashgrid	92
Cleardek	93
S5!	95
MRM CSR	98

ZincAL®

The next generation of Coated Steel

from Mabati Rolling Mills Limited

MRM

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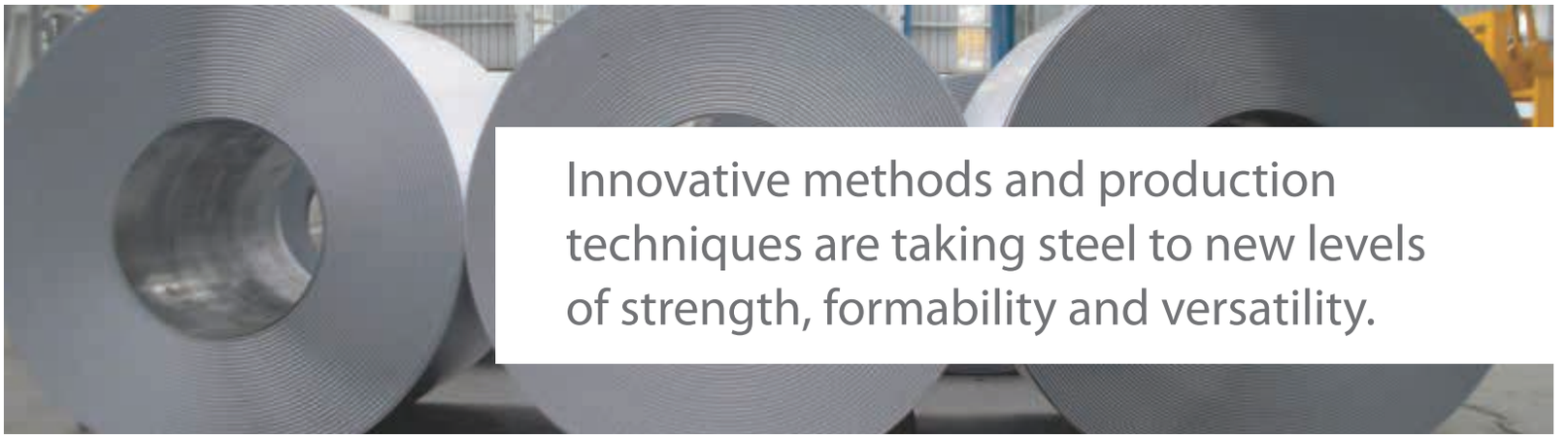


Innovative methods and production techniques are taking steel to new levels of strength, formability and versatility.

Steel: The most recycled material on earth

Steel's most valuable property is its ability to be recycled many times without any loss to its inherent qualities. On its journey of reincarnation from washing machines to cars, oil cans to ocean liners or railway tracks, recycling steel saves precious raw materials and minimises energy consumption. With global recovery rates averaging more than 83%, steel is one of the most sustainable and environmentally friendly products made by man.

Did you know?

- Even steel made 150 years ago can be recycled into new products
- Steel is considered to be one of the most innovative and sustainable materials of the 21st century

*source: worldsteel.org

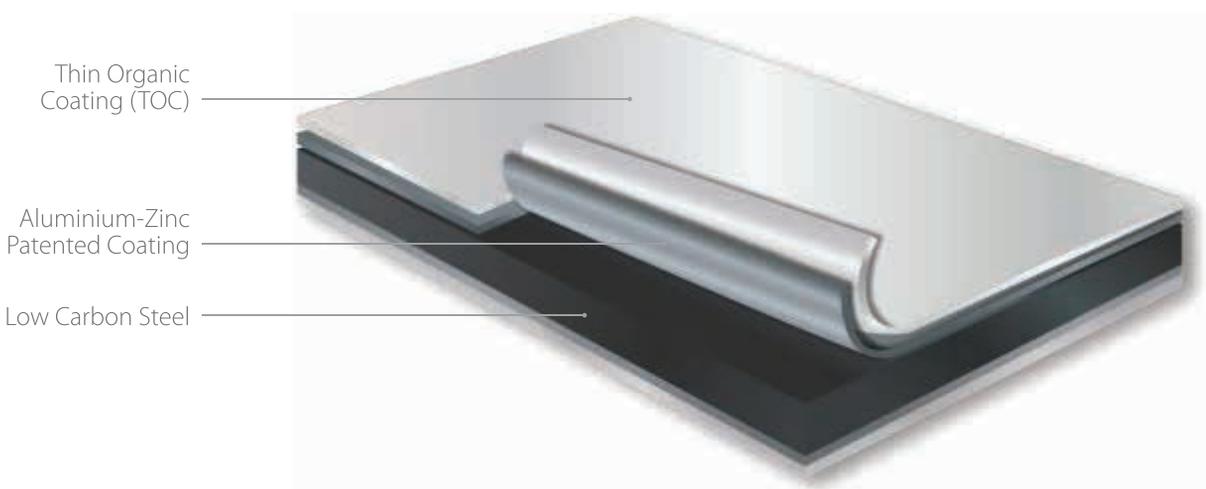
With **ZINCAL®**, the durability and service life of modern coated steel is extended even further.

ZINCAL® is produced by a unique, efficient process whereby rolled steel is continuously hot dipped into a patented alloy of 55% Aluminium, 43.5% Zinc and 1.5% Silicon.

This patented coating protects the steel in two ways:

- The Aluminium component of the coating provides a tough physical barrier between the extreme atmospheric conditions and the inner core of steel
- The Zinc in the coating provides sacrificial protection and also protects the steel at the cut edges
- A thin organic coating (TOC) is applied to **ZINCAL®**, a process that offers wide benefits like anti-fingerprints, elasticity, weldability and formability. TOC also contains dry lubricant additives that increase lubricity of the ZINCAL surface and wax or oil is not required during the forming process.

Cross Section of **ZINCAL®**



Quality **Assurance**

ZINCAL® is produced by **Mabati Rolling Mills Limited,** a company that is commited to deliver a long lasting, quality product that satisfies its valued clients. To achieve this, our brands are produced from superior quality raw materials and tested in accordance to global standards. Our products and processes undergo:

- ISO management system testing
- Quality inspection and testing during production
- Finished product conformance testing (East African Standard / Customer Specifications)
- Accelerated weathering tests for quality control
- Live test sites

Mabati Rolling Mills Limited is a member of the Safal Group, which was the first in Africa to set up Aluminium-Zinc (AZ) Coating Technology. This is done under licence to BIEC International Inc., the worldwide licensor and acknowledged leader in technologies associated with 55% Aluminium-Zinc coated steel.

ISO Management **Systems Testing**

At the core of our business is the implementation of ISO 9001:2015 and ISO 14001:2015 quality systems. This ensures all processes are managed to ensure consistent product quality.

Quality Inspection **And Testing**

To ensure products sent to our customers are defect free, we have trained quality inspectors who ensure our various production processes across the vaue chain are at optimal conditions.

Finished Products **Conformance Testing**

During the quality testing of the product we focus on various characteristics such as mechanical properties and coating performance. **ZINCAL®** undergoes the following tests:

Mechanical Properties Testing
- Hardness Testing (HRB/HRC)
- Tensile and Yield Strength Testing (Mpa)
- Elongation (%)

Coating Performance
- Bend test (0T to 3T)
- Coating mass (g/m2)
- Cupping test
- Passivation film testing

Atmospheric **Exposure**

To ensure we produce a product that not only satisfies relevant standards but also performs well under different weathering conditions, our products undergo below long term performance testing:

Ÿ **Salt Spray Tests**
Products are exposed for predetermined time periods to salt fumes at fixed temperatures. The time periods are determined by the various coating categories.

Ÿ **Live Test Stations**
Live test stations have now been installed at various locations for monitoring the performance of **ZINCAL®** under everday weathering conditions. Through our live testing in the region, we are able to provide greater assurance of performance in East African markets for our products

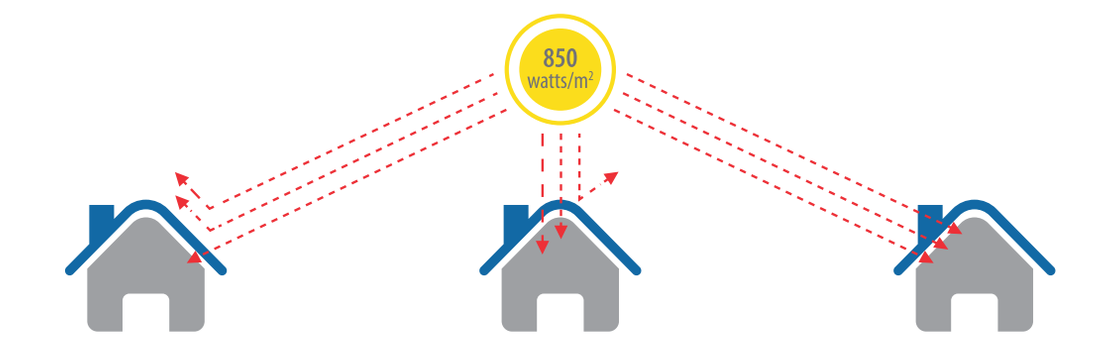
MRM corrosion site at Mariakani, Mombasa

Product Selection **Guide**

	Inland Medium commercial or mild marine zones 5km or more from the splash zone	**Coastal** Large commercial or average marine zones 1 - 5km from the splash zone
Pre-painted		
AZ100		
AZ150		

Thermal **Attributes**

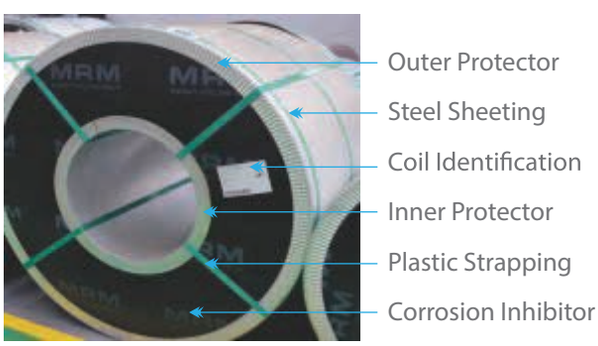
The thermal mass of **ZINCAL®** is significantly lower than traditional galvanised steel and clay tile roofs due to the addition of Aluminium. This increases the reflection of the sun's rays creating a cooler building in summer and a warmer building in winter.



Solar radiation at 850W/m² equivalent to 30°C ambient temperature

Zincal® steel is backed by a 15 year warranty available on application (terms and conditions apply).
It is available in coil form, flat sheets or in various residential, commercial and industrial profiles.

MRM provides packaging of ZINCAL Coils as per customer requirements and in compliance with International Standards that avoids damage during transportation.



Coil Packaging

Technical **Specifications**

Mabati Rolling Mills Limited, ZINCAL® AZ100 and AZ150 Grade, G550 or G330.

Standards	Grades
A792M/A924M	G550
EAS410:2005	G330

Mechanical Properties	Guaranteed Minimum	
	G550	G330
Yield strength, MPa	550	330
Tensile strength, MPa	570	400
Elongation on 50mm GL%	2	15

Note: *Tensile strength is tested in longitudinal direction*

Dimensions

Base Metal Thickness (mm)	
Range	Tolerances
	Width ≤ 1200
0.3 – 0.4	±0.03
0.4 – 0.5	±0.04
0.5 – 0.6	±0.05
0.6 – 0.7	±0.06
0.7 – 0.8	±0.07
0.8 – 0.9	±0.08
0.9 – 1.0	±0.10
1.0 – 1.2	±0.12

**Restricted thickness tolerance is subject to negotiation*

*Coating Weight**

Coating Class	Minimum (g/m^2)	AZ coating Thickness/microns
AZ85	71	19
AZ100	85	23
AZ150	130	35

**Triple spot testing*

Reflective Index	
Total Solar Reflectance	50%

**Please note this figure may vary depending on coating weight*

Coating Adhesion - 180° Bend Test

Coating Class	Guaranteed Minimum	
	G550	G330
AZ85	2t	1t
AZ100	2t	1t
AZ150	2t	2t

**Warranties available upon pre-application*

Coil Width (mm)	
Range	Tolerance
925 - 1220	+5 / -0

Supply Conditions

	Normal
Surface Condition	Spangled
Surface Treatment	Passivated with Thin Organic Coating (TOC)
Flatness	EAS410:2005

Branding

All coils are branded to allow for full traceability. Example of product identification (underside of sheet):

MRM ZINCAL 0.5MM FH AZ100 45107-1-1-1

GREEN - THE TRUE COLOUR OF STEEL

More steel is recycled each year than all other materials combined. But that's just part of steel's environmental story.

The amazing metallurgical properties of steel allow it to be recycled continually with no degradation in performance, and from one product to another.

The sources for steel scrap are plentiful, but are classified into three main categories: home scrap, prompt scrap and obsolete scrap.

Home scrap is the scrap that is produced from within the mill itself and is available within weeks. Prompt scrap is scrap that it is produced from manufacturing products from steel, and is available within months. Obsolete scrap is scrap produced from steel products at the end of their lives and it may be decades before this scrap is available.

Recycling is the connection of steel's sustainability. Steel is continuously recyclable, which means it can be recycled over and over with no loss of performance.

Even while two out of every three tons of new steel are produced from old steel, it is still necessary to continue to use some quantities of virgin materials. This is true because many steel products remain in service as durable goods for decades at a time and demand for steel around the world continues to grow.

Beyond the steel scrap itself, the steel industry has long recycled its by-products: mill scale, steelmaking slags, water and processing liquids. Likewise, steelmaking dusts and sludges are processed so that other metals, such as zinc, can be recovered and re-used.

GOING GREEN

Allows for water harvesting from rainwater — Once installed collection of rainwater runoff has many benefits for domestic and agricultural use.

Disposal & Recycling —Disposal will be by the standard steel recycling process of recycling in a steel recovery plant into new steel products. This is the greenest way to build.

Manufacturing process - most of the water used in the manufacture of this material is recycled. Air and fume emissions comply with the environmental regulation laws.

COLORPLUS®

The next generation of Coated Steel

from Mabati Rolling Mills Limited

MRM

MABATI ROLLING MILLS

Architects and builders are looking for ways to bring individuality, style and character to their projects.

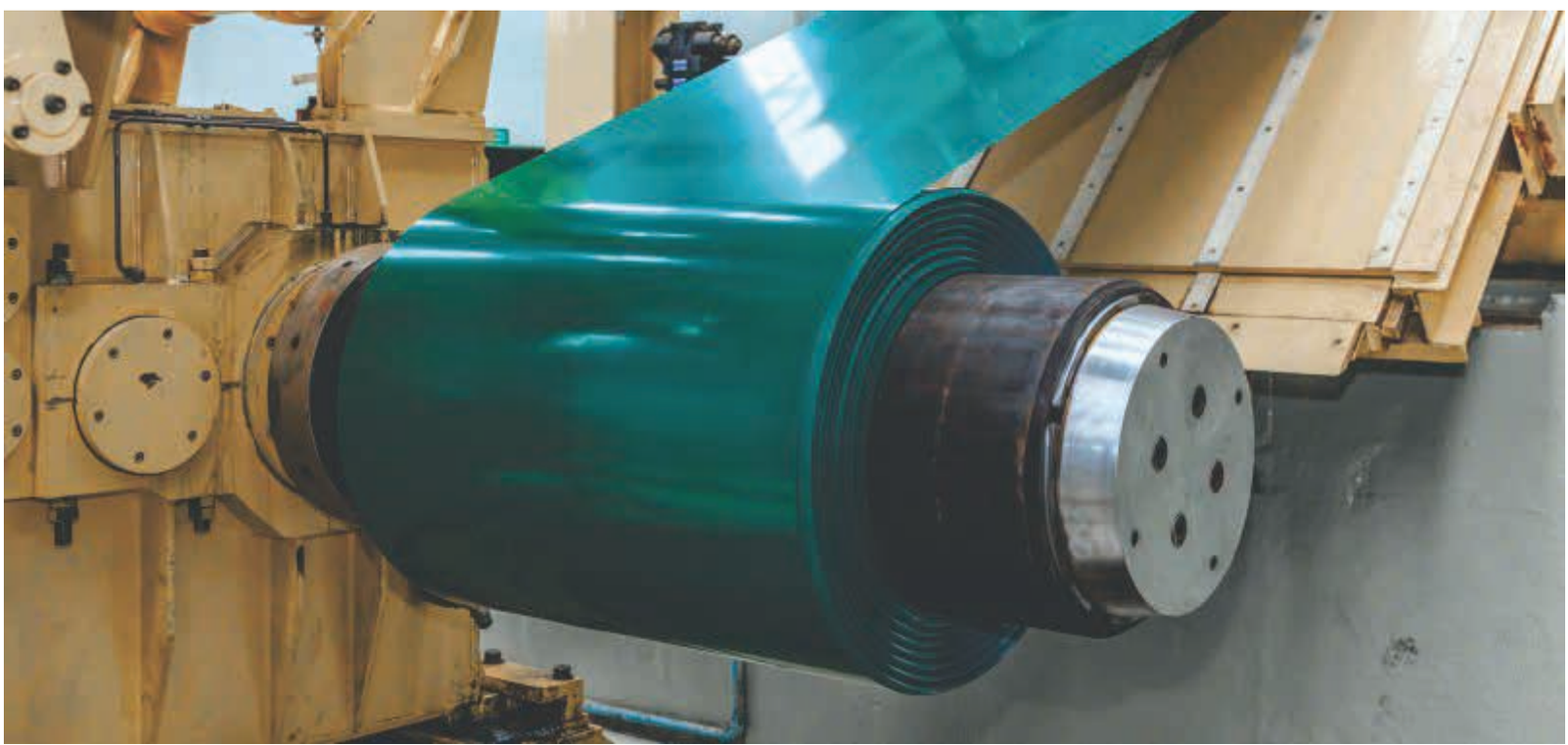
Steel: The most recycled material on earth

Steel's most valuable property is its ability to be recycled many times without any loss to its inherent qualities. On its journey of reincarnation from washing machines to cars, oil cans to ocean liners or railway tracks, recycling steel saves precious raw materials and minimises energy consumption. With global recovery rates averaging more than 83%, steel is one of the most sustainable and environmentally friendly products made by man.

Did you know?

- Even steel made 150 years ago can be recycled into new products
- Steel is considered to be one of the most innovative and sustainable materials of the 21st century

*source: worldsteel.org



COLORPLUS® brings modern innovation to pre-painted steel roofing - not to mention a range of colours that are as visually appealing as they are durable.

COLORPLUS® is produced by a unique, efficient process whereby rolled steel is continuously hot dipped into a patented alloy of 55% Aluminium, 43.5% Zinc and 1.5% Silicon. This patented coating protects the steel in two ways:

- The Aluminium component of the coating provides a tough physical barrier between the extreme atmospheric conditions and the inner core of steel
- The Zinc in the coating protects the steel at the cut edges

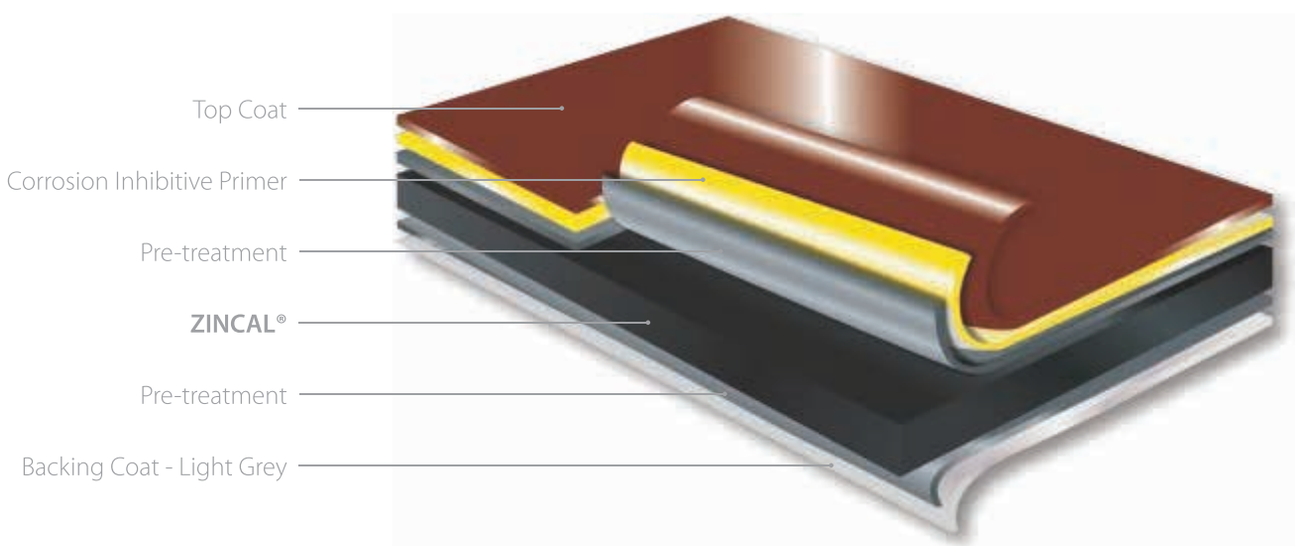
Colour that takes whatever the climate throws at it

COLORPLUS® has been developed as a premium product to endure Eastern Africa's harshest climates, ensuring your building will have a considerable increase in service life, superior thermal protection, added aesthetic value, cost-effectiveness and eco-friendly credentials.

Many years of research and development with our partners has resulted in a paint process that satisfies all the demands placed on steel roofing in the 21st century.

Innovative pigments used in the paint have been carefully selected to minimise rapid colour change and retain a fresh appearance for many years. The technology used for this coating system also limits chalking. Particle resistance is an important factor with the growing increase in windborne contaminants and dust. Advances in pre-painted coating technology means that our modified polyesters resist dirt, ensuring your building stays cleaner for longer. With its balance between cost and quality, UV resistance and corrosion resistance, hardness and flexibility, **COLORPLUS®** is redefining the pre-painted coated steel sector.

Cross Section of **COLORPLUS®**



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Quality **Assurance**

COLORPLUS® is produced by **Mabati Rolling Mills Limited**, a company that stops at nothing to produce a long lasting, quality product that satisfies its demanding clients. To achieve this, our brands are produced and tested in accordance with global standards. They are also subjected to:

- ISO Management Systems Testing
- Quality inspection and testing during production
- Finished Products Conformance Testing
- East African Standards / Customer Specifications
- Accelerated weathering tests for quality control
- Live test sites

ISO Management **Systems Testing**

At the core of our business is the implementation of ISO 9001:2015 and ISO 14001:2015 management systems. This ensures all processes are managed to ensure consistent product quality.

Quality **Inspection**

To ensure products sent to our customers are defect free, we have trained quality inspectors who ensure our various production processes across the value chain are at optimal conditions.

Finished Products **Conformance Testing**

During the quality testing of the product we focus on various characteristics which include mechanical properties and coating performance. **COLORLUS** undergoes the following tests:

- Impact Testing
- Bend Test
- Paint Thickness Test
- Cross Hatch Test
- Cupping Test
- Scratch Test
- Solvent Resistance
- Pencil Hardness Test
- CIE Lab values
- Gloss

Atmospheric **Exposure**

To ensure we produce a product that not only conforms to relevant quality standards but also performs well under different weathering conditions, our products undergo below long term performance testing:

- **QUV / QUB testing**
  The polymer characteristics of the **COLORPLUS®** material is exposed for predetermined time periods to UVA and UVB rays at fixed temperatures

- **Live Test Stations**
  Live test stations have now been installed at various locations for monitoring the long term performance of **COLORPLUS®** under everyday weathering conditions

MRM corrosion site at Mariakani, Mombasa

Through our live testing in the region, we are able to provide greater assurance of performance in East African markets for our products

Product Selection **Guide**

	Inland Medium commercial or mild marine zones 5km or more from the splash zone	**Coastal** Large commercial or average marine zones 1 - 5km from the splash zone
Pre-painted		
AZ100		
AZ150		

Thermal **Attributes**

The thermal mass of **COLORPLUS®** is significantly lower than traditional pre-painted galvanised and clay tile roofing due to the patented coating technology. This increases the reflection of the sun's rays creating a cooler building in summer and a warmer building in winter. Adding colour not only offers aesthetic appeal, but also increases solar reflection.

Tests have proven that based on the colour spectrum, light colours offer a higher reflectance compared to darker colours. Please refer to the Technical Specification table on the right for information on Total Solar Reflective Index (SRI) of the colours in the **COLORPLUS®** palette.

Note* The results reported have a measurement tolerance of +/- 10 units. Please note this figure may vary depending on AZ coating weight.

Colour	**Total Solar Reflectance**	**Thermal Emmitance**	**Solar Reflective Index**
Avocado	40%	0.82	42
Beige Red	35%	0.83	34
Bright Red	35%	0.82	36
Brilliant White	60%	0.84	65
Forest Green	25%	0.81	28
Kraft Grey	40%	0.82	42
Lagoon	45%	0.84	47
Light Blue	35%	0.82	33
Light Cream	50%	0.84	55
Lilac Haze	58%	0.81	59
Menengai Grey	54%	0.82	55
Mzima Blue	22%	0.81	25
Okra Red	30%	0.82	30
Olive Green	32%	0.82	34
Pembe White	55%	0.84	60
Savanna	40%	0.82	42
Sea Spray	62%	0.84	64
Service Grey	56%	0.81	57
Steel Blue	26%	0.80	25
Traffic Green	23%	0.81	25
Ochre Yellow	24%	0.80	26
Luminous Green	25%	0.80	27

You will have peace knowing that COLORPLUS prepainted steel is backed by up to 15 years warranties available on application (Terms and Conditions apply).

COLORPLUS® pre-painted steel is available in coil form, flat sheets or in various residential, commercial and industrial profiles

COLORPLUS®
Textured

Texture Adds **Character!**

COLORPLUS TEXTURED® is a double-coat textured-finish paint system applied to a Zincal® substrate (Aluminium - Zinc coated sheet)

The textured surface provides a superior look, with a low gloss regardless of the angle from which it is observed. This ensures our textured finish is quite different from the conventional gloss finishes often used for manufacturing metal roofs, making it more visually attractive and increasing its appeal to architects and property developers. The brand offers an exciting alternative for roofing and cladding finishes. Architects and builders will be eager to exploit the obvious aesthetics and commercial potential of new textured products in increasingly demanding markets.

COLORPLUS TEXTURED® is available in the following standard colours:

Tile Red	*Sky Blue*	*Graphite Grey*	*Brick Red*	*Charcoal*
Potters Clay	*Maroon*	*Chocolate*	*Dark Green*	*Aqua Green*

COLORPLUS TEXTURED® prepainted steel is available in various residential, commercial and industrial profiles.

COLORPLUS®
Metallic

New Generation of **Architectural Paints!**

This is a high performance product in either a MPE or PVDF paint system that offers a similar appearance to your 'car' metallic paint, offering an alternative to Aluminium at much lower cost. The product is envisaged for high-end commercial project facades as well as other projects looking for that extra finesse in design and finish.
The new **COLORPLUS METALLIC®** steel range introduces three additional colours to the updated Colour Chart and an innovative paint technology that boosts its signature lustre effect.

A new paint type and production method strategically places particles in the paint system to optimise light penetration and colour reflectivity to increase brilliance. With planning and thoughtful design, iconic buildings are now more achievable. A simple play of light is all that's needed to bring out the signature metallic finish.

COLORPLUS METALLIC® is available in the following standard colours:

Silver

Shimmer Grey

Typhoon

COLORPLUS METALLIC® prepainted steel is available in Coil form, flat sheets or in various residential, commercial and industrial profiles.

Technical **Specifications**

Mabati Rolling Mills Limited, COLORPLUS® AZ100 and AZ150 Grade, G550 or G330.

Standards	Grades
A755M	G550
EAS468	G330

Mechanical Properties	Guaranteed Minimum	
	G550	G330
Yield strength, MPa	550	330
Tensile strength, MPa	570	400
Elongation on 50mm GL%	2	15

Dimension

Base Metal Thickness (mm)	
Range	Tolerances
	Width ≤ 1220
≥0.3	±0.03
≥0.4	±0.04
≥0.5	±0.05
≥0.6	±0.03

*Coating Weight**

Coating Class	Minimum (g/m^2)	AZ coating Thickness/microns
AZ100	85	23
AZ150	130	35

** Triple spot testing*

Paint Line Tested Properties of Product

Property	Measured by	Result
Hardness	Pencil	Min 2H
Adhesion	Reverse Impact	500g
	T - Bend	Max 2T
Flexibility	Cupping	Max 6 dia
Solvent Resistance	MEK	100 double rubs
Color	CIE Lab Unit	<1.5
Specular Flops	60° meter	40± 5 units

Coil width (mm)	
Range	Tolerance
925 -1220	+5 / -0

Supply Conditions

Typical micron coverage (paint coating)	
AZ100 and AZ150	20 ± 2µm top coat
	5 ± 1µm corrosion inhibitive primer
	8 ± 1µm backing coat - cool grey

for applications in severe coastal conditions, we recommend* **COLORPLUS® *Dura AZ200 (supplied ex Safal Steel)*

Branding

All coils are branded to allow for full traceability. Example of product identification (underside of sheet):

MRM COLORPLUS 0.6MM FH AZ150 45107-1-1-1

Colour Fading and Physical Parameters

Colour	Maximum Fading ΔE CIELab (Cleaned) ASTM 2244	Gloss % (Within 15 years)	Maximum Chalking (Tape off Test) ISO 4628-6	Physical Parameters (Within 15 years)
Light colours (L≥60)	≤4	>50	2 (10 years)	No Peel, Crack, Chip
Dark Colours (L<60)	≤7	>60	2 (10 years)	No Peel, Crack, Chip

Optima®

The next generation of Colour Coated Steel
from Mabati Rolling Mills Limited

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Optima®

From the soils of the south, the traditional fabrics of the east, the tropical flowers of the west and the deserts of the north; Africa has inspired us with its colour palette.

Inspired by...

Colour that says who you are

OPTIMA® is a single coat painted steel product for residential, small commercial and industrial projects in benign corrosive environments. It has been designed to offer the benefits of Aluminium-Zinc coating with the added aesthetics and superior solar reflection of top quality colour coating technology. The paint system used on **OPTIMA®** provides superior performance and is excellent value for money.

Innovative pigments used in the paint have been carefully selected to minimise rapid colour change and retain a fresh appearance. Particle resistance is an important factor with the growing increase in windborne contaminants and dust. Our polyester paint systems resist dirt, ensuring your building stays cleaner for longer.

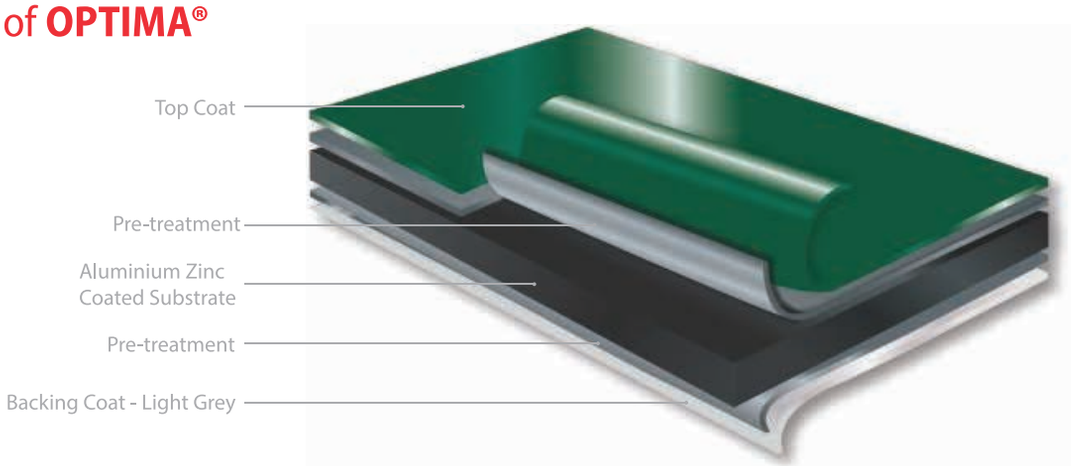
Lasting performance is at it's heart

The inner core of **OPTIMA®** is produced by a process whereby rolled steel is continuously hot dipped into a patented alloy of 55% Aluminium, 43.5% Zinc and 1.5% Silicon.

This patented coating protects the steel in two ways:

- The Aluminium component of the coating provides a tough physical barrier between the extreme atmospheric conditions and the inner core of steel
- The Zinc in the coating protects the steel at the cut edges

Cross Section of **OPTIMA®**

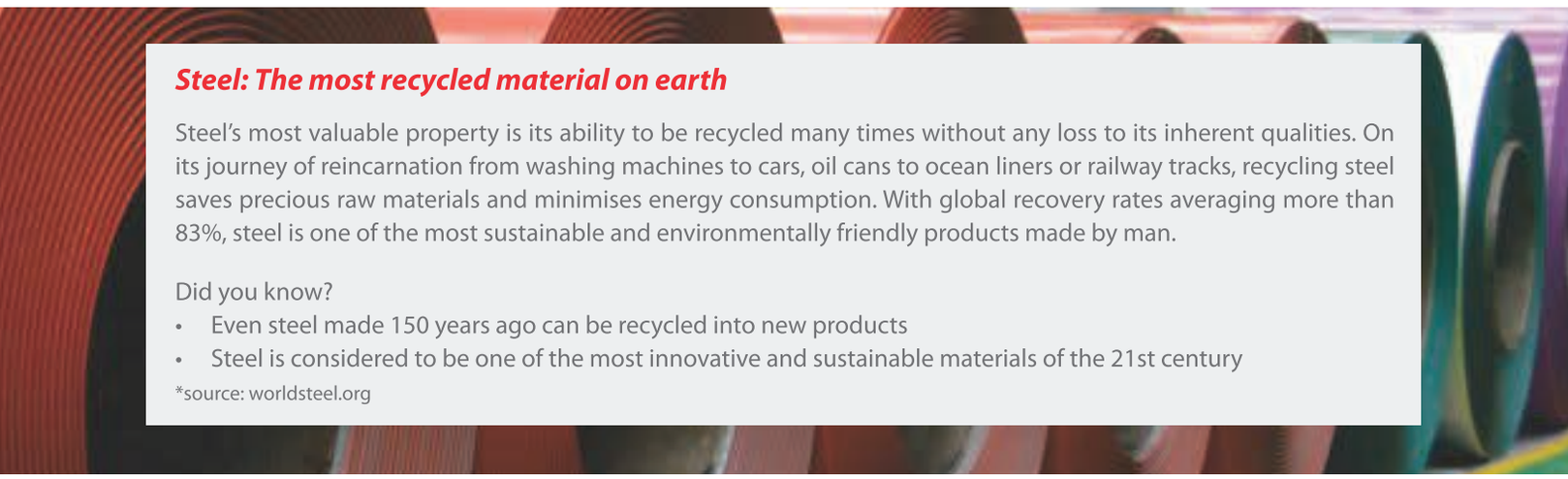


ISO Management **Systems Testing**

At the core of our business is the implementation of the ISO 9001:2015 and ISO 14001:2015 management systems. This ensures all processes are managed to ensure consistent product quality.

Mabati Rolling Mills Limited is a member of the Safal Group, which was the first in Africa to set up Aluminium-Zinc (AZ) Coating Technology. This is done under licence to BIEC International Inc., the worldwide licensor and acknowledged leader in technologies associated with 55% Aluminium-Zinc coated steel.

The acronym **AZ refers to steel which is coated in the patented alloy of 55% Aluminium, 43,5 % Zinc and 1,5% Silicon, also referred to as **55% Aluminium-Zinc coating technology.***



Steel: The most recycled material on earth

Steel's most valuable property is its ability to be recycled many times without any loss to its inherent qualities. On its journey of reincarnation from washing machines to cars, oil cans to ocean liners or railway tracks, recycling steel saves precious raw materials and minimises energy consumption. With global recovery rates averaging more than 83%, steel is one of the most sustainable and environmentally friendly products made by man.

Did you know?

- Even steel made 150 years ago can be recycled into new products
- Steel is considered to be one of the most innovative and sustainable materials of the 21st century

*source: worldsteel.org

Usage **Guidelines**

OPTIMA® is designed to offer premium service life in environments which are only benignly corrosive. This applies to most urban and rural areas of Africa, excluding zones within 5 kilometres of a coast or marine areas, or regions adjacent to high industrial pollution areas such as coal mines and smelters.

Thermal **Attributes**

The thermal mass of **OPTIMA®** is significantly lower than traditional pre-painted galvanised and clay tile roofing due to the patented coating technology. This increases the reflection of the sun's rays creating a cooler building in summer and a warmer building in winter.

Adding colour not only offers aesthetic appeal, but also increases solar reflection.

Colours

OPTIMA® is available in a variety of colours. Tests have proven that light colours offer a higher reflectance compared to darker colours and will therefore provide a cooler interior on hot days.

*Colours reproduced here may vary and may not be the exact match to the metal swatches

Maroon	*Bright Blue*	*Tile Red*	*Potters Clay*	*Dark Green*
Kijani Green	*Charcoal*	*Sky Blue*	*Brick Red*	

You will have peace of mind, knowing that the **OPTIMA®** pre-painted steel is backed by a 5 year warranty available on application (terms and conditions apply).

OPTIMA® pre-painted steel is available in coil form, flat sheets or in various residential, commercial and industrial profiles.

Quality **Assurance**

OPTIMA® is produced by **Mabati Rolling Mills Limited**, a company that stops at nothing to produce a long lasting, quality product that satisfies its demanding clients. To achieve this, our brands are produced and tested in accordance to global standards. They are also subjected to:

- ISO Management Systems Testing
- Quality inspection and testing during production
- Finished Product Conformance testing
- East African Standards / Customer Specifications
- Accelerated weathering tests
- Live test sites

Technical **Specifications**

Mabati Rolling Mills Limited, OPTIMA® Grade, G550 or G330. **OPTIMA®** is fit-for-purpose colour coated steel for use in **benign** corrosive environments. **OPTIMA®** is warranted for up to 5 years if used in the correct environment.

Standards	Grades
A755M	G550
EAS468	G330

Mechanical Properties	Guaranteed Minimum	
	G550	G330
Tensile strength, MPa	550	330
Yield strength, MPa	570	400
Elongation	2	15

Dimensions

Thickness range	Tolerance thickness	Width range (mm)	Width tolerance
0.25	± 0.025	925 - 1220	0, (+) 5
0.32	± 0.032	925 - 1220	0, (+) 5
0.4	± 0.040	925 - 1220	0, (+) 5
0.5	± 0.050	925 - 1220	0, (+) 5
0.6	± 0.060	925 - 1220	0, (+) 5

Coil width (mm)	
Range	Tolerance
925 - 1220	+5 / -0

*Coating Weight**

Coating Class	Minimum (g/m^2)	AZ coating Thickness/microns
AZ85	71	19
AZ100	85	23

** Triple spot testing*

Paint Line Tested Properties of Material

Property	Measured by	Result
Hardness	Pencil	Min 2H
Adhesion	Reverse Impact	500g
	T - Bend	Max 2T
Flexibility	Cupping	Max 6 dia
Solvent Resistance	MEK	100 double rubs
Color	CIE Lab	

MRM corrosion site at Mariakani, Mombasa

Branding

All coils are branded to allow for full traceability. Example of product identification (underside of sheet):

MRM OPTIMA 0.4MM CG AZ85 451107-1-1-1

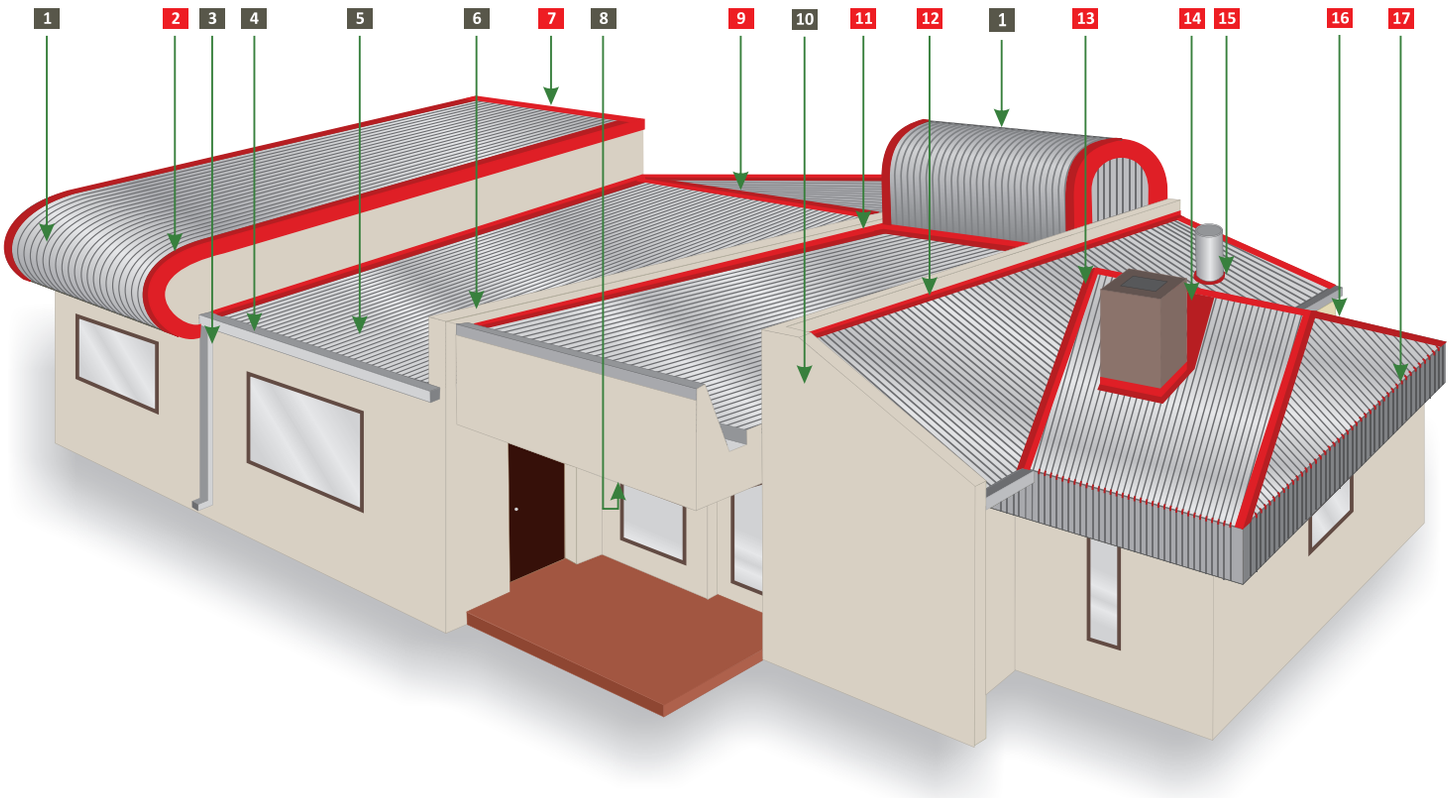
Colour Fading and Physical Parameters

Colour	Maximum FadingΔE CIELab (Cleaned) ASTM 2244	Gloss % (Within 5 years)	Maximum Chalking/ Tape off test ISO 4628-6 (Within 5 years)
Light colours (L > 60)	≤5	>60	4 (5 years)
Dark Colours (L < 60)	≤8	>70	4 (5 years)

** Result may change depending on climate conditions*

** Warranties available upon pre-application*

ROOFING TERMINOLOGY



1 Curved/Cranked/Bullnosed Sheets
A term used in building construction for rounded sheeting.

2 Barge Flashing
Weather proofing strip placed over corners where the roof meets the side of building. (Straight or curved to follow roofline)

3 Down Pipe
Vertical pipe for carrying rainwater from a rain gutter to ground level.

4 Gutter
The trough or duct under the eaves of a building for catching and redirecting rainwater.

5 Eaves Level
Lowest point of roof.

6 Parapet Wall
The portion of an exterior wall that continues above the line of the roof.

7 Apex Flashing
Angled strip placed over apex of roof.

8 Soffit
The material forming a ceiling from the exterior building wall to the outer edge of the roof, i.e., bridging the gap between a building's siding and the roofline, otherwise known as the eaves.

9 Ridge Flashing
Flashing used to cover the point on the roof where two sections of roofing meet, often the highest point of the roof, running horizontally.

10 Gable
The triangular portion of a wall between the edges of a sloping roof.

11 Sidewall Flashing
Used to waterproof the sheet which ends or runs alongside parapet or other walls.

12 Headwall Flashing
Used to waterproof the top end of a sheet where it butts with a parapet or headwall.

13 Valley Flashing
Used as a gully between two adjoining roof planes.

14 Back Flashing
Flat flashing extending from the penetration (chimney or ventilator) to ridge of roof.

15 Cravat
A collar fitted between the outer skin of a flue and the flashing.

16 Hip Flashing
Flashing used to cover the point on the roof where two sections of roofing meet, often the highest point of the roof, running horizontally.

17 Rib Cap
A small sheet-metal cap fitted to the rib of the sheet only.

ROOF SHEETING INDEX

minicorr corrugated

DUMUZAS

DUMURANGI

RESINCOT

covermax

MaxCover

Trimflute

tekdek IT5

SAFLOK 700
concealed fix roofing

NEWLOK
standing seam roofing

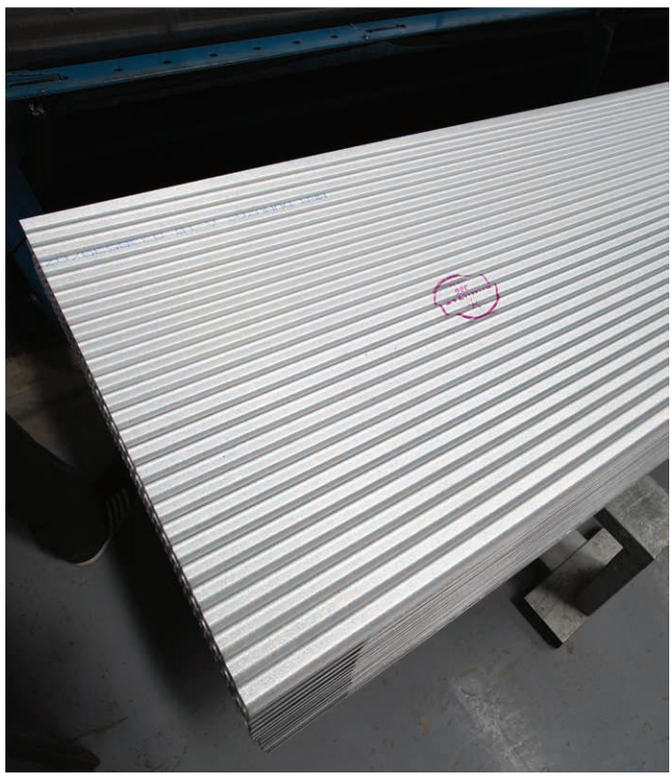
Disclaimer:

- Care has been taken to ensure that the information provided is accurate. MRM does not assume responsibility for inaccuracies or misinterpretations of this data.
- MRM is continuously engaged in product development, please ensure that you have the most recent issue of information from MRM.
- Photographs and illustrations are typical examples of roofing and cladding products and cladding products and applications.

PRODUCT DESCRIPTION

MINICORR ® Corrugated is a sinusoidal profile used primarily for wall cladding and is suitable for exterior and interior applications. This corrugated profile lends itself as an aesthetic feature and is practical and decorative in any home or office, whether it is applied on the ceiling or as walling.

It can be installed flat or curved for a different design look and feel. For a contrasting and creative feature it can run either vertically or horizontally.

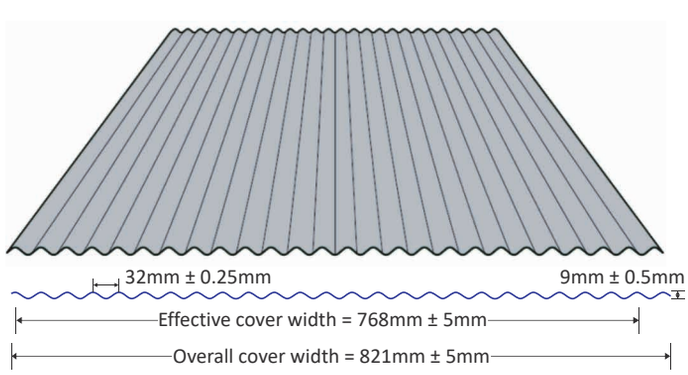


PURLIN SPACINGS

Purlin Spacings are dependent on both downward loading and negative suction loading caused by wind. Your engineer should be consulted to calculate your load [kN/m²] for your particular application.

STEEL SHEETS SUPPORT SYSTEM

TOTAL COATED THICKNESS [TCT] mm	MAXIMUM PURLIN SPACING IN METRES (m)		
	SIMPLY SUPPORTED (2 SUPPORTS)	CONTINUOUS SUPPORTS (3 SUPPORTS)	CONTINUOUS SUPPORTS (>3 SUPPORTS)
ROOF			
0.20	0.3	0.4	0.5
0.25	0.3	0.4	0.6
0.32	0.4	0.5	0.7
WALLS			
0.20	0.4	0.4	0.5
0.25	0.4	0.4	0.6
0.32	0.5	0.5	0.7



RECOMMENDED END-LAPPING

	SLOPE/PITCH	ENDLAP MIN. mm	ENDLAP MAX. mm
ROOFS	Less than 15º	250	300
	Greater than 15º	200	250
WALLS		150	200

Notes:

1. These spacings are indicated as a guide for information purposes only. The user should ensure to have a qualified professional work out the precise spacing specifications based on the design considerations unique to the project/site.
2. It is important to reduce the purling spacings by 20% when spring curving a roof

COVERAGE CALCULATOR

To calculate the number of sheets [N] to cover a given area. Required, use the formula: N= W/0.768 where; W is the linear width of the roof in metres and N is the number of sheets

Note:
During installation, clean the roof daily by removing all swarf, pop rivels and unused fasteners or any other debris.

LENGTHS

Minicorr sheeting is a mass- market product offered only in standard lengths of 2.0, 2.5 & 3.0m.

TOLERANCES

A length variation range of +/-5.0mm, and width tolerance of +/-3.0m are permissible.

FASTENING

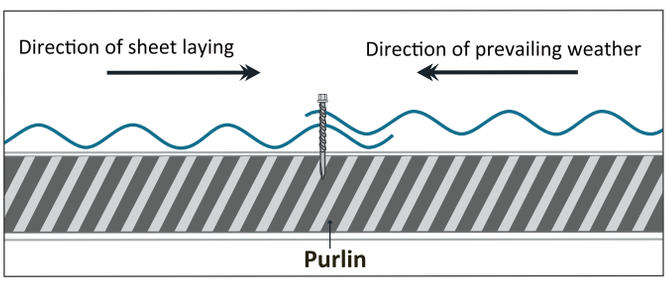
Minicorr is pierce-fixed to timber or steel supports. This means that fastener screws pass through the sheeting. You can place screws for Minicorr through the crests or in the valleys. To maximize water tightness, always place roof screws through the crest. For walling, you may use either crest or valley fixing. Always drive the screws perpendicular to the sheeting, and in the centre of the corrugation or rib. Don't place fasteners less than 25mm from the ends of sheets.

The edge of Minicorr with the anti-capillary groove is always the under-lap. it is generally considered good practice to use fasteners alongside lap however, when cladding is supported as indicated in purlin spacings, side-lap fasteners are not usually needed for strength.

End-laps are not usually necessary because Minicorr is available in long lengths. If you want end laps, seek advice from your nearest MRM office on the sequence of laying and the amount of overlap. When Minicorr is laid on slopes of 7.5 degrees or more, cut back the corner of the under sheet, at the downhill end of the sheet to block capillary action.

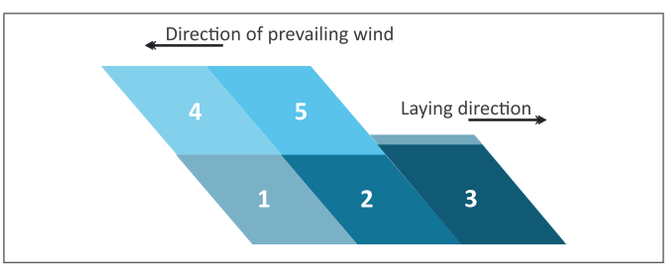
INSTALLATION

The recommended roof fixing method for Covermax profile is as shown in the figure below.



FIXING PROCEDURE

Lay each run of sheets in turn from side to side before moving onto the next run as depicted below. Similar procedure for wall cladding too.



DUMUZAS

PRODUCT DESCRIPTION

Dumuzas® is a revolutionary brand made from high tensile steel that has a protective metal coating of 55% Aluminium, 43% Zinc and 1.6% Silicon, resulting in a product with an extremely long life. Now with thin organic coating (TOC). The New DumuZas has increased durability and a beautiful silver finish. It has a corrugated profile with 11 ribs and a pitch [distance between ribs] of 76.2mm. It is mainly used for roofing and walling in domestic applications. It comes with matching accessories for a complete roofing solutions.

FEATURES AND BENEFITS

- Lasts longer than a Zinc galvanized product of the same coated thickness.
- Offers up to 4 degrees' cooler interiors.
- Has a shining beautiful silver finish.
- It is very easy to install.

SPECIFICATIONS

Normal Corrugation 110 (NC 110) is a sinusoidal profile with 11 corrugations and a pitch (distance between any two crests) of (76 +/- 2 mm) hence its name, and is the oldest most common of all profiles, mainly used for roofing and walling especially in domestic applications.

STEEL SHEETS SUPPORT SYSTEM

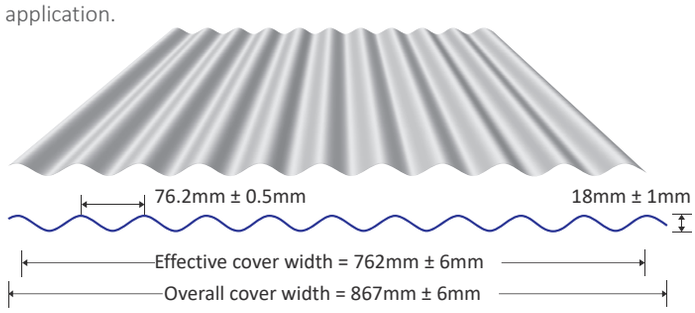
TOTAL COATED THICKNESS [TCT] mm	MAXIMUM PURLIN SPACING IN METRES (m)		
	SIMPLY SUPPORTED (2 SUPPORTS)	CONTINUOUS SUPPORTS (3 SUPPORTS)	CONTINUOUS SUPPORTS (>3 SUPPORTS)
ROOF			
0.20	0.4	0.5	0.6
0.25	0.5	0.6	0.7
0.32	0.6	0.7	0.8
0.40	0.8	0.9	1.0
0.50	0.7	0.9	1.1
0.60	0.9	1.1	1.3
WALLS			
0.20	0.5	0.6	0.7
0.25	0.6	0.7	0.8
0.32	0.8	1.0	1.2
0.40	1.0	1.2	1.4
0.50	1.2	1.4	1.5
0.60	1.3	1.5	1.7

RECOMMENDED END-LAPPING

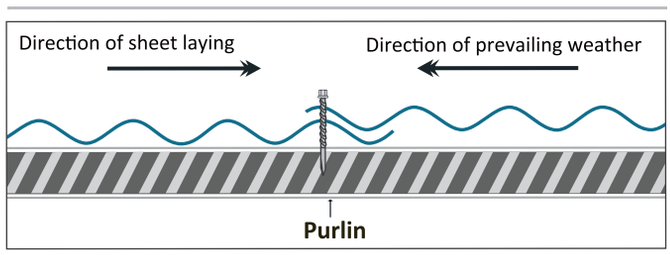
	SLOPE/PITCH	ENDLAP MIN. mm	ENDLAP MAX. mm
ROOFS	Less than 15º	250	300
	Greater than 15º	200	250
WALLS		150	200

PURLIN SPACINGS

Purlin Spacings are dependent on both downward loading and negative suction loading caused by wind. Your engineer should be consulted to calculate your load [kN/m²] for your particular application.

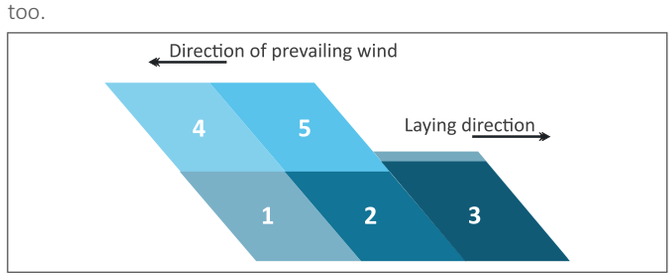


INSTALLATION



FIXING PROCEDURE

Lay each run of sheets in turn from side to side before moving onto the next run as depicted below. Similar procedure for wall cladding too.



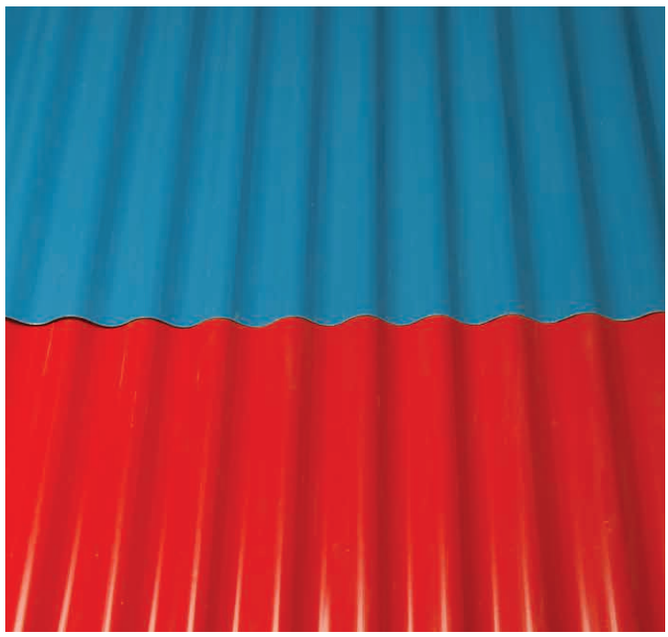
Notes:

1. These spacings are indicated as a guide for information purposes only. The user should ensure to have a qualified professional work out the precise spacing specifications based on the design considerations unique to the project/site.
2. It is important to reduce the purling spacings by 20% when spring curving a roof.

DUMURANGI

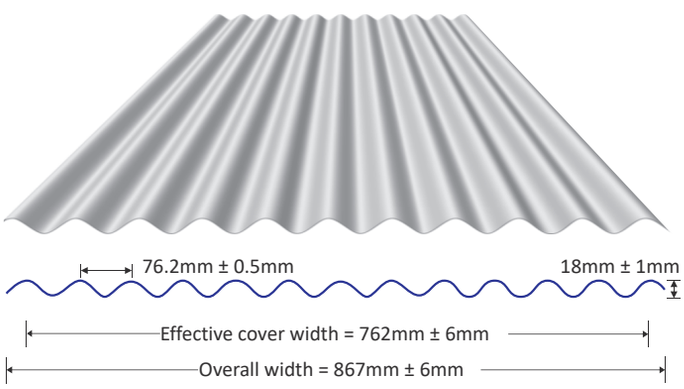
PRODUCT DESCRIPTION

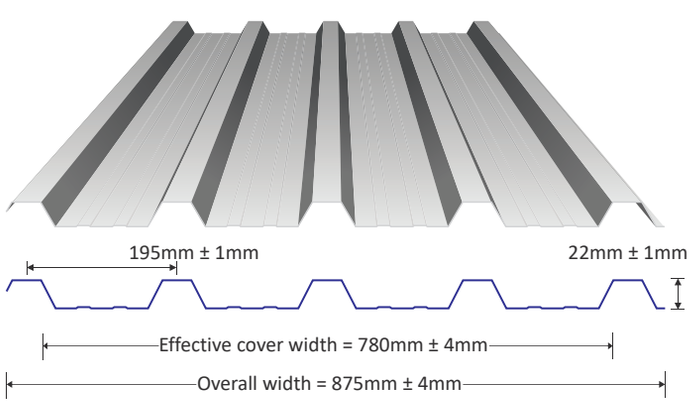
Dumurangi® is the new revolutionary brand from Mabati Rolling Mills that offers the benefits of durability and beauty at an affordable price. The Aluminium Zinc Coated steel is pre-painted at our modern state of the art factory to bring out the desired colour aesthetics and longevity.



FEATURES AND BENEFITS

- DumuRangi has Aluminium Zinc coated substrate base for extra protection. It lasts longer than ordinary colour coated Mabati.
- Comes in gauge 30 (0.25mm) and 3m, 2.5m and 2m as standard lengths.
- Available in five main colours: Bahari blue, Maasai Red, Karura Green, Jacaranda Purple and Safari Green.
- Matching and requisite accessories are available for a total roofing solution. Recommended matching accessories include Ridges, Fixtite screws, Valleys and Flashings (on request).
- Available in both normal corrugation and box profiles.

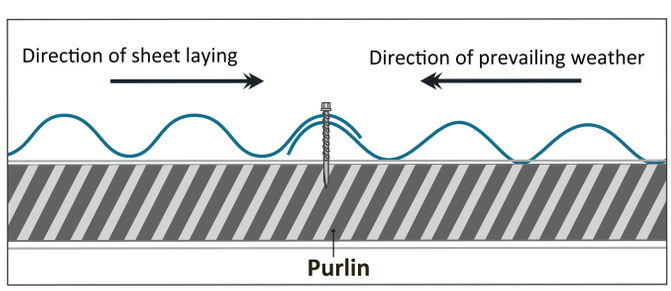




PURLIN SPACINGS

Purlin Spacings are dependent on both downward loading and negative suction loading caused by wind. Your engineer should be consulted to calculate your load [kN/m²] for your particular application.

INSTALLATION

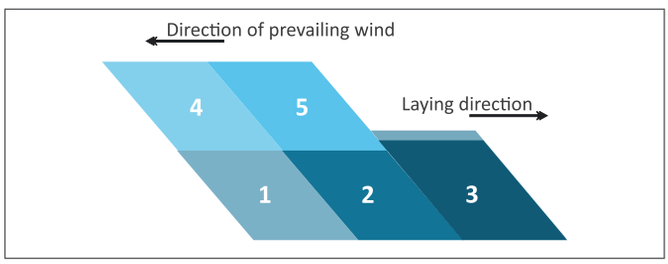


Notes:

1. These spacings are indicated as a guide for information purposes only. The user should ensure to have a qualified professional work out the precise spacing specifications based on the design considerations unique to the project/site.
2. It is important to reduce the purling spacings by 20% when spring curving a roof.

FIXING PROCEDURE

Lay each run of sheets in turn from side to side before moving onto the next run as depicted below. Similar procedure for wall cladding too.



BAHARI BLUE | KARURA GREEN | JACARANDA PURPLE | MAASAI RED | SAFARI GREEN

RESINCOT

PRODUCT DESCRIPTION

Resincot® is a unique brand that offers coating of an Aluminum -Zinc protective alloy on a carbon steel base which is pre-painted in controlled factory conditions. It promises durability and is available in over 16 different colours making it the obvious choice of architects and designers with a bias for class and aesthetics. Resincot features a five year fade free warranty. The Aluminum- Zinc coated base offer an extremely long life.

FEATURES AND BENEFITS

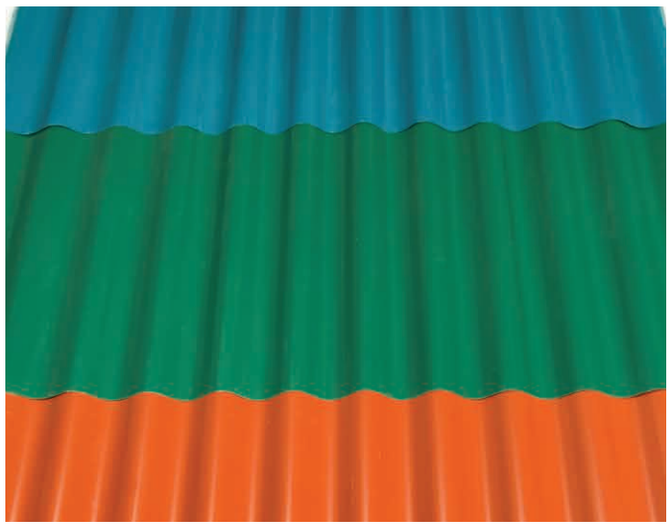
- Aluminum-Zinc alloy offers extra corrosion resistance lasting two times longer than ordinary colour coated roofing sheets.
- Superior quality of paint-systems allows MRM to offers fade free warranties of between 5 years-15 years.
- Available in a variety of colours to suit a client's style with the option to customize.
- Customized lengths tailor made to customer requirements. Less joints hence minimal chances of leakage; more economical owing to less wastage.
- Available matching accessories offer a truly total roofing solution that is in complete harmony with itself.

STEEL SHEETS SUPPORT SYSTEM

TOTAL COATED THICKNESS [TCT] mm	MAXIMUM PURLIN SPACING IN METRES (m)		
	SIMPLY SUPPORTED (2 SUPPORTS)	CONTINUOUS SUPPORTS (3 SUPPORTS)	CONTINUOUS SUPPORTS (>3 SUPPORTS)
ROOF			
0.25	0.5	0.6	0.7
0.32	0.6	0.7	0.8
0.40	0.8	0.9	1.0
0.50	0.9	0.9	1.1
0.60	1.0	1.1	1.3
WALLS			
0.25	0.6	0.7	0.8
0.32	0.8	1.0	1.2
0.40	1.0	1.2	1.4
0.50	1.2	1.4	1.5
0.60	1.3	1.5	1.7

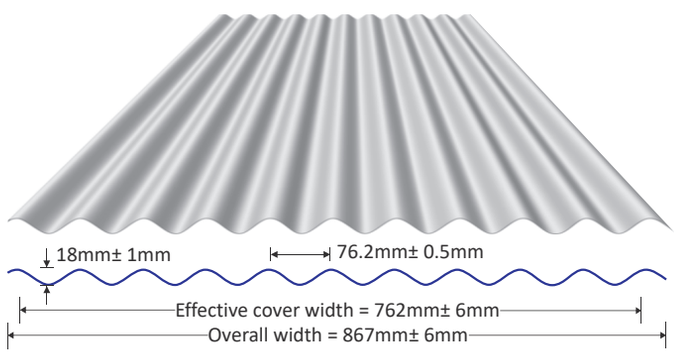
RECOMMENDED END-LAPPING

	SLOPE/PITCH	ENDLAP MIN. mm	ENDLAP MAX. mm
ROOFS	Less than 15º	250	300
	Greater than 15º	200	250
WALLS		150	200



Notes:

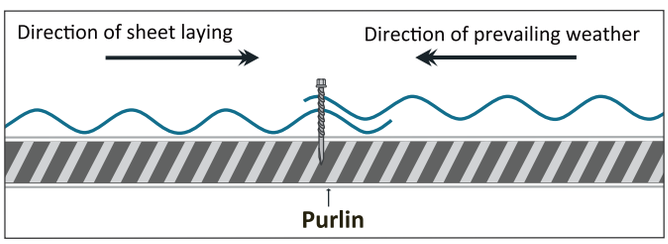
1. These spacings are indicated as a guide for information purposes only. The user should ensure to have a qualified professional work out the precise spacing specifications based on the design considerations unique to the project/site.
2. It is important to reduce the purling spacings by 20% when spring curving a roof.



PURLIN SPACINGS

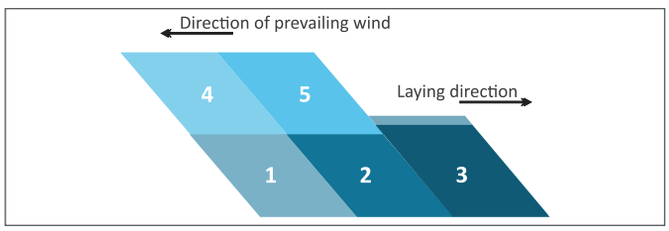
Purlin Spacings are dependent on both downward loading and negative suction loading caused by wind. Your engineer should be consulted to calculate your load [kN/m²] for your particular application.

INSTALLATION



FIXING PROCEDURE

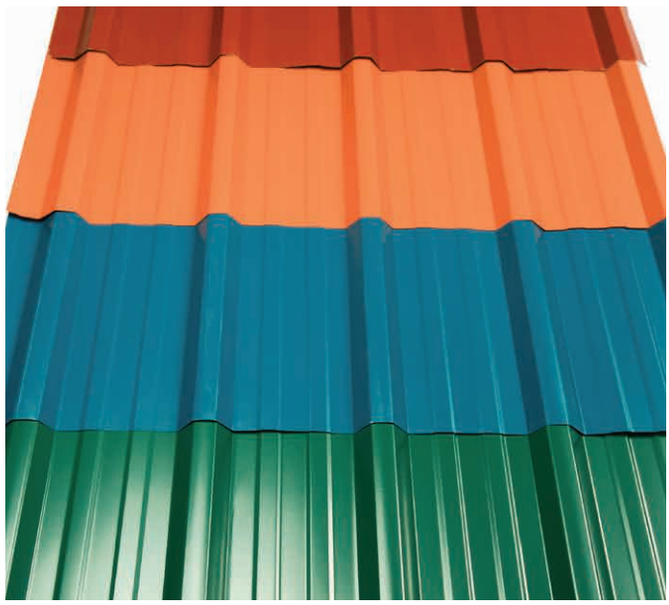
Lay each run of sheets in turn from side to side before moving onto the next run as depicted below. Similar procedure for wall cladding too.



SKY BLUE | DARK GREEN | MAROON | TILE RED | BRICK RED | CHARCOAL

PRODUCT DESCRIPTION

Covermax® is a unique brand that offers coating of an Aluminum-Zinc protective alloy on a carbon steel base which is pre-painted in controlled factory conditions. Box profile roofing sheets are available in a variety of colors. They are suitable for domestic and light industrial or commercial application.



FEATURES AND BENEFITS

- CX780 is a trapezoidal profile with box crest and valleys suitable for roofing and wall cladding.
- It is especially targeted at domestic and light industrial/commercial applications where the goal is economy and aesthetics.
- CX780 has 4 troughs and 5 ribs. The valley (trough) is wider than the crest (rib) and stiffened using two 25mm wide strips.
- Box CX780 can be factory cranked into curves of minimum 400mm radius to enhance their use and aesthetic properties.

STEEL SHEETS SUPPORT SYSTEM

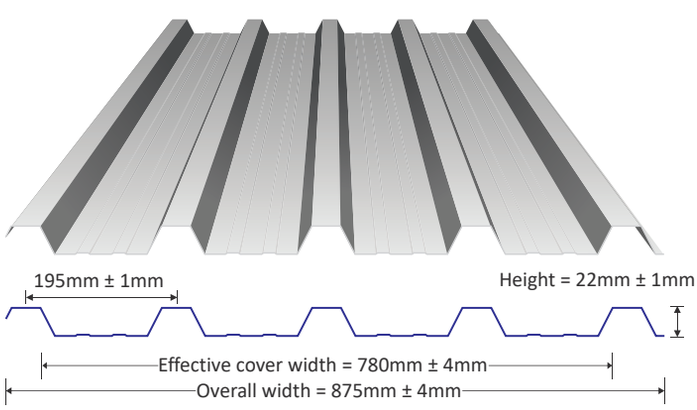
TOTAL COATED THICKNESS [TCT] mm	MAXIMUM PURLIN SPACING IN METRES (m)		
	SIMPLY SUPPORTED (2 SUPPORTS)	CONTINUOUS SUPPORTS (3 SUPPORTS)	CONTINUOUS SUPPORTS (>3 SUPPORTS)
ROOF			
0.25	0.5	0.6	0.7
0.32	0.6	0.8	0.9
0.40	0.8	1.0	1.1
0.50	0.9	1.1	1.2
0.60	1.0	1.3	1.4
WALLS			
0.25	0.7	0.8	0.9
0.32	0.8	1.1	1.2
0.40	1.0	1.9	1.4
0.50	1.2	1.5	1.6
0.60	1.3	1.6	1.8

RECOMMENDED END-LAPPING

	SLOPE/PITCH	ENDLAP MIN. mm	ENDLAP MAX. mm
ROOFS	Less than 15º	250	300
	Greater than 15º	200	250
WALLS		150	200

PURLIN SPACINGS

Purlin Spacings are dependent on both downward loading and negative suction loading caused by wind. Your engineer should be consulted to calculate your load [kN/m²] for your particular application.



COVERAGE CALCULATOR

To calculate the number of sheets (N) to cover a given area. Required, use the formula: N = W/0.780 where; W is the linear width of the roof in metres and N is the number of sheets.

Note:
During installation, clean the roof daily by removing all swarf, pop rivets and unused fasteners or any other debris.

LENGTHS & ROOF PITCH

When using Covermax sheeting the recommended minimum pitch for roof slopes in excess of 15m is 10º and for slopes less than 15m is 7.5º. Covermax sheeting is offered to the mass market in lower gauges of 0.25 & 0.32m [30 & 28G] and corresponding standard lengths of 2.0, 2.5 & 3.0. It can also be ordered in special lengths, subject to transport limitations, up to 9 [min 0.4mm thickness]. Lower thickness up to 6mm a lengths.

TOLERANCES

A length variation range of +/-5.0mm, and width tolerance of +/-3.0m are permissible.

FASTENING

Covermax is pierce-fixed to timber or steel supports. This means that fastener screws pass through the sheeting. You can place screws for Covermax through the crests or in the valleys. To maximize water tightness, always place roof screws through the crest. For walling, you may use either crest or valley fixing. Always drive the screws perpendicular to the sheeting, and in the centre of the corrugation or rib. Don't place fasteners less than 25mm from the ends of sheets.

The edge of Covermax with the anti-capillary groove is always the under-lap. it is generally considered good practice to use fasteners alongside lap however, when cladding is supported as indicated in purlin spacings, side-lap fasteners are not usually needed for strength.

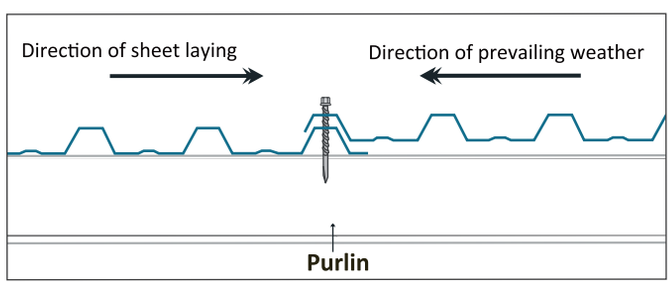
End-laps are not usually necessary because Covermax is available in long lengths. If you want end laps, seek advice from your nearest MRM office on the sequence of laying and the amount of overlap. When Covermax is laid on slopes of 7.5 degrees or more, cut back the corner of the under sheet, at the downhill end of the sheet to block capillary action.

Notes:

1. These spacings are indicated as a guide for information purposes only. The user should ensure to have a qualified professional work out the precise spacing specifications based on the design considerations unique to the project/site.
2. It is important to reduce the purling spacings by 20% when spring curving a roof.

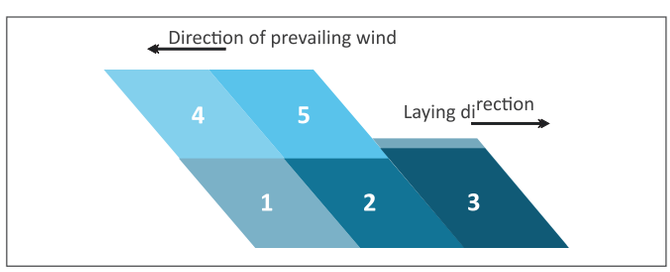
INSTALLATION

The recommended roof fixing method for Covermax profile is as shown in the figure below.



FIXING PROCEDURE

Lay each run of sheets in turn from side to side before moving onto the next run as depicted below. Similar procedure for wall cladding too.



COLOUR CHART

SKY BLUE | DARK GREEN | MAROON | TILE RED | BRICK RED | CHARCOAL

MaxCover

PRODUCT DESCRIPTION

Maxcover®1015 is a box profile roofing sheet from MRM's stable of high quality brands that offers a coating of an Aluminum-Zinc protective alloy on a carbon steel base which is pre-painted in controlled factory conditions. It offers consumers the benefit of a box profile with an effective cover width of 1015mm, offering a more economical sheet for budget sensitive projects. Maxcover is ideal for domestic and light industrial or commercial applications.

FEATURES AND BENEFITS

- Has an effective cover width of 1015 mm.
- Comes in Gauge 28-30 and requisite accessories available.
- Wide range of colours over 16+ to choose from.
- They are aesthetically appealing.
- Has an anti-capillary groove to prevent leaking.

STEEL SHEETS SUPPORT SYSTEM

TOTAL COATED THICKNESS [TCT] mm	MAXIMUM PURLIN SPACING IN METRES (m)		
	SIMPLY SUPPORTED (2 SUPPORTS)	CONTINUOUS SUPPORTS (3 SUPPORTS)	CONTINUOUS SUPPORTS (>3 SUPPORTS)
ROOFS			
0.32	0.6	0.8	0.9
0.40	0.8	1.0	1.1
0.50	0.9	1.1	1.2
0.60	1.0	1.3	1.4
WALLS			
0.32	0.8	1.1	1.2
0.40	1.0	1.3	1.4
0.50	1.2	1.5	1.6
0.60	1.3	1.6	1.8

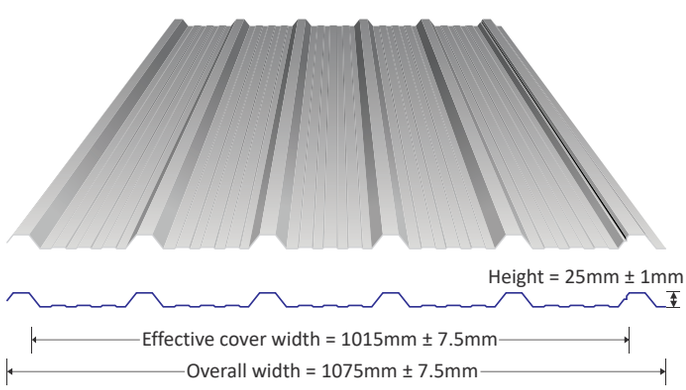
RECOMMENDED END-LAPPING

	SLOPE/PITCH	ENDLAP MIN. mm	ENDLAP MAX. mm
ROOFS	Less than 15º	250	300
	Greater than 15º	200	250
WALLS		150	200

Note:
During installation, clean the roof daily by removing all swarf, pop rivels and unused fasteners or any other debris.

PURLIN SPACINGS

Purlin Spacings are dependent on both downward loading and negative suction loading caused by wind. Your engineer should be consulted to calculate your load [kN/m²] for your particular application.



COVERAGE CALCULATOR

To calculate the number of sheets [N] to cover a given area. Required, use the formula: N= W/1.015 where; W is the linear width of the roof in metres and N is the number of sheets.

LENGTHS & ROOF PITCH

When using Maxcover sheeting the recommended minimum pitch for roof slopes in excess of 15m is 10º and for slopes less than 15m is 7.5º. Maxcover sheeting is offered to the mass market in lower gauges of 0.25 & 0.32m [30 & 28G] and corresponding standard lengths of 2.0, 2.5 & 3.0. It can also be ordered in special lengths, subject to transport limitations, up to 9 [min 0.4mm thickness]. Lower thickness up to 6mm a lengths.

TOLERANCES

A length variation range of +/-5.0mm, and width tolerance of +/-3.0m are permissible.

FASTENING

Maxcover is pierce-fixed to timber or steel supports. This means that fastener screws pass through the sheeting. You can place screws for Maxcover through the crests or in the valleys. To maximize water tightness, always place roof screws through the crest. For walling, you may use either crest or valley fixing. Always drive the screws perpendicular to the sheeting, and in the centre of the corrugation or rib. Don't place fasteners less than 25mm from the ends of sheets.

The edge of Maxcover with the anti-capillary groove is always the under-lap. it is generally considered good practice to use fasteners alongside lap however, when cladding is supported as indicated in purlin spacings, side-lap fasteners are not usually needed for strength.

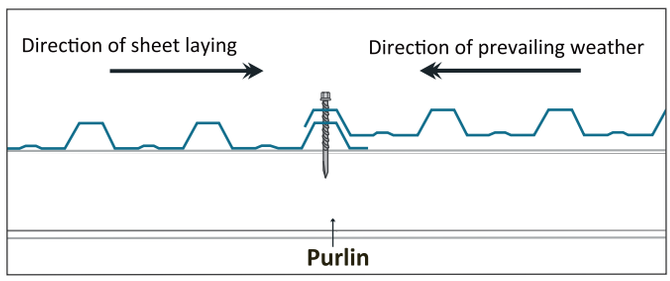
End-laps are not usually necessary because Maxcover is available in long lengths. If you want end laps, seek advice from your nearest MRM office on the sequence of laying and the amount of overlap. When Maxcover is laid on slopes of 7.5 degrees or more, cut back the corner of the under sheet, at the downhill end of the sheet to block capillary action.

Notes:

1. These spacings are indicated as a guide for information purposes only. The user should ensure to have a qualified professional work out the precise spacing specifications based on the design considerations unique to the project/site.
2. It is important to reduce the purling spacings by 20% when spring curving a roof.

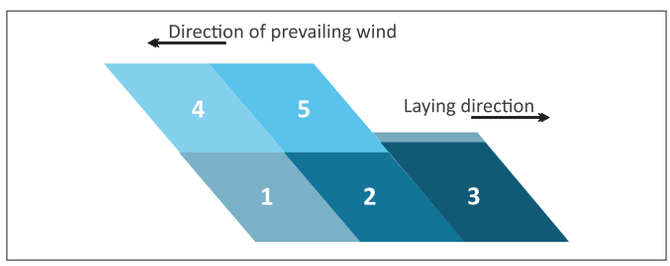
INSTALLATION

The recommended roof fixing method for Maxcover profile is as shown in the figure below



FIXING PROCEDURE

Lay each run of sheets in turn from side to side before moving onto the next run as depicted below. Similar procedure for wall cladding too.



COLOUR CHART

SKY BLUE | DARK GREEN | MAROON | TILE RED | BRICK RED | CHARCOAL

Trimflute

PRODUCT DESCRIPTION

Trimflute® is a subtle square fluted profile. The long flute gives the profile its strength with long spanning capabilities. Trimflute can be used as a roofing as well as a cladding profile.

FEATURES AND BENEFITS

- The square flutes of Trimflute type sheeting ensure excellent drainage characteristics.
- The contemporary appearance of Trimflute is aesthetically appealing.
- Trimflute can be factory cranked, curved and bull nosed to a wide range of radii. For further details contact our Technical Department.

PURLIN SPACINGS

Purlin Spacings are dependent on both downward loading and negative suction loading caused by wind. Your engineer should be consulted to calculate your load [kN/m²] for your particular application.

STEEL SHEETS SUPPORT SYSTEM

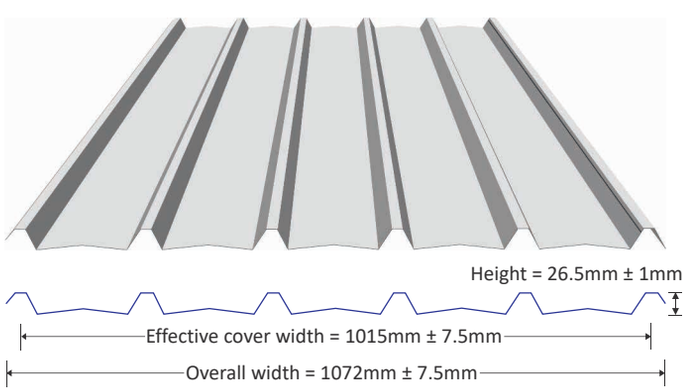
TOTAL COATED THICKNESS [TCT] mm	MAXIMUM PURLIN SPACING IN METRES (m)		
	SIMPLY SUPPORTED (2 SUPPORTS)	CONTINUOUS SUPPORTS (3 SUPPORTS)	CONTINUOUS SUPPORTS (>3 SUPPORTS)
ROOFS			
0.40	0.8	1.0	1.1
0.50	0.9	1.1	1.2
0.60	1.0	1.3	1.4
WALLS			
0.40	1.0	1.3	1.4
0.50	1.2	1.5	1.6
0.60	1.3	1.6	1.8

RECOMMENDED END-LAPPING

	SLOPE/PITCH	ENDLAP MIN. mm	ENDLAP MAX. mm
ROOFS	Less than 15º	250	300
	Greater than 15º	200	250
WALLS		150	200

Notes:

1. These spacings are indicated as a guide for information purposes only. The user should ensure to have a qualified professional work out the precise spacing specifications based on the design considerations unique to the project/site.
2. It is important to reduce the purling spacings by 20% when spring curving a roof.



COVERAGE CALCULATOR

To calculate the number of sheets [N] to cover a given area. Required, use the formula: N= W/0.910 where; W is the linear width of the roof in metres and N is the number of sheets.

LENGTHS & ROOF PITCH

When using Trimflute sheeting the recommended minimum pitch for roof slopes in excess of 15m is 10º and for slopes less than 15m is 7.5º. Trimflute sheeting can be ordered in lengths up to 12m [length of semi- trailer], however, 9m lengths are recommended due to handling challenges.

TOLERANCES

A length variation range of +/-5.0mm, and width tolerance of +/-3.0m are permissible.

FASTENING

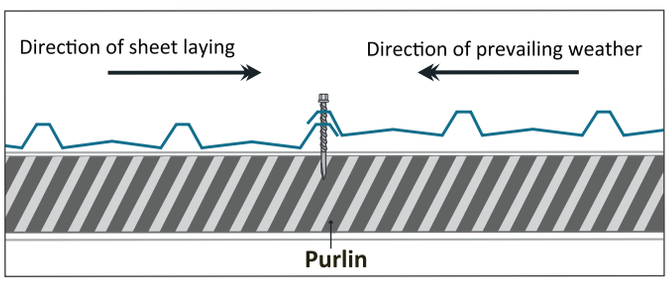
Trimflute is pierce-fixed to timber or steel supports. This means that fastener screws pass through the sheeting. You can place screws for Trimflute through the crests or in the valleys. To maximize water tightness, always place roof screws through the crest. For walling, you may use either crest or valley fixing. Always drive the screws perpendicular to the sheeting, and in the centre of the corrugation or rib. Don't place fasteners less than 25mm from the ends of sheets.

The edge of Trimflute with the anti-capillary groove is always the under-lap. it is generally considered good practice to use fasteners alongside lap however, when cladding is supported as indicated in purlin spacings, side-lap fasteners are not usually needed for strength.

End-laps are not usually necessary because Trimflute is available in long lengths. If you want end laps, seek advice from your nearest MRM office on the sequence of laying and the amount of overlap. When Trimflute is laid on slopes of 7.5 degrees or more, cut back the corner of the under sheet, at the downhill end of the sheet to block capillary action.

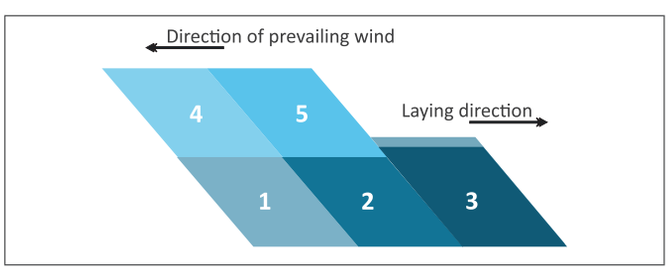
INSTALLATION

The recommended roof fixing method for Trimflute profile is as shown in the figure below.



FIXING PROCEDURE

Lay each run of sheets in turn from side to side before moving onto the next run as depicted below. Similar procedure for wall cladding too.



tekdek IT5

PRODUCT DESCRIPTION

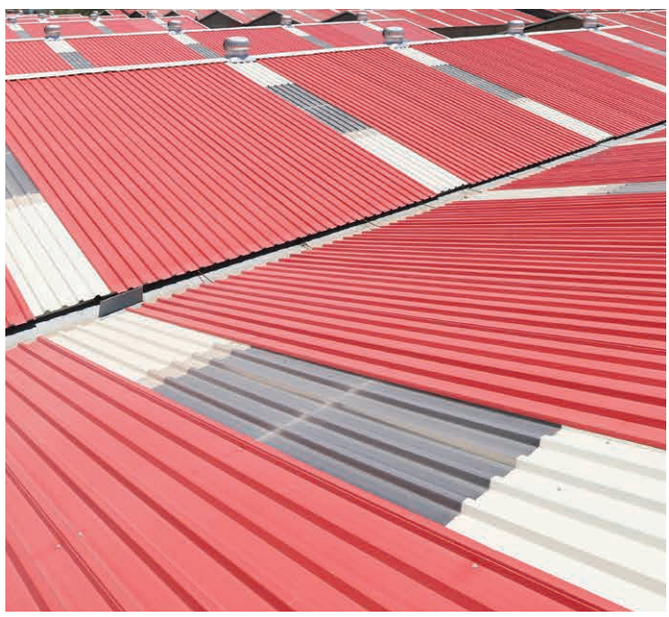
Tekdek IT5® is an angular trapezoidal – ribbed profile of five troughs and six ribs. The profile depth of 34mm gives it remarkable strength to suit its use in roofing and walling primarily in industrial applications. It offers a distinct advantage of 32% wider coverage than conventional IT4, hence better economy.

FEATURES AND BENEFITS

- The Tekdek IT5 profile can be factory cranked in both forward and reverse directions into curves of minimum 500mm radius.
- It can also be naturally sprung without mechanical cranking for radius of 36 meters and above.

PURLIN SPACINGS

Purlin Spacings are dependent on both downward loading and negative suction loading caused by wind. Your engineer should be consulted to calculate your load [kN/m²] for your particular application.

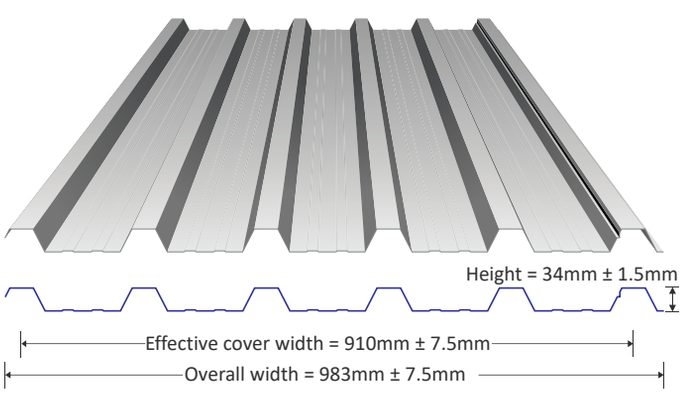


STEEL SHEETS SUPPORT SYSTEM

TOTAL COATED THICKNESS [TCT] mm	MAXIMUM PURLIN SPACING IN METRES (m)		
	SIMPLY SUPPORTED (2 SUPPORTS)	CONTINUOUS SUPPORTS (3 SUPPORTS)	CONTINUOUS SUPPORTS (>3 SUPPORTS)
ROOFS			
0.40	1.1	1.3	1.4
0.50	1.3	1.4	1.6
0.60	1.4	1.6	1.8
0.70	1.6	1.8	2.0
WALLS			
0.40	1.4	1.6	1.8
0.50	1.6	1.9	2.1
0.60	1.8	2.1	2.4
0.70	1.9	2.3	2.6

Notes:

1. These spacings are indicated as a guide for information purposes only. The user should ensure to have a qualified professional work out the precise spacing specifications based on the design considerations unique to the project/site.
2. It is important to reduce the purling spacings by 20% when spring curving a roof.



RECOMMENDED END-LAPPING

	SLOPE/PITCH	ENDLAP MIN. mm	ENDLAP MAX. mm
ROOFS	Less than 15º	250	300
	Greater than 15º	200	250
WALLS		150	200

COVERAGE CALCULATOR

To calculate the number of sheets [N] to cover a given area. Required, use the formula: N= W/0.910 where; W is the linear width of the roof in metres and N is the number of sheets.

Note:
During installation, clean the roof daily by removing all swarf, pop rivets and unused fasteners or any other debris.

LENGTHS & ROOF PITCH

When using Tekdek IT5 sheeting the recommended minimum pitch for roof slopes in excess of 15m is 10º and for slopes less than 15m is 7.5º. Tekdek IT5 sheeting can be ordered in lengths up to 12m [length of semi- trailer], however, 9m lengths are recommended due to handling challenges.

TOLERANCES

A length variation range of +/-5.0mm, and width tolerance of +/-3.0m are permissible.

FASTENING

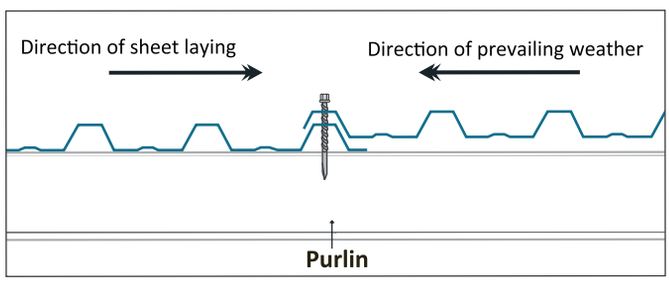
Tekdek IT5 is pierce-fixed to timber or steel supports. This means that fastener screws pass through the sheeting. You can place screws for Tekdek IT5 through the crests or in the valleys. To maximize water tightness, always place roof screws through the crest. For walling, you may use either crest or valley fixing. Always drive the screws perpendicular to the sheeting, and in the centre of the corrugation or rib. Don't place fasteners less than 25mm from the ends of sheets.

The edge of Tekdek IT5 with the anti-capillary groove is always the under-lap. it is generally considered good practice to use fasteners alongside lap however, when cladding is supported as indicated in purlin spacings, side-lap fasteners are not usually needed for strength.

End-laps are not usually necessary because Tekdek IT5 is available in long lengths. If you want end laps, seek advice from your nearest MRM office on the sequence of laying and the amount of overlap. When Tekdek IT5 is laid on slopes of 7.5 degrees or more, cut back the corner of the under sheet, at the downhill end of the sheet to block capillary action.

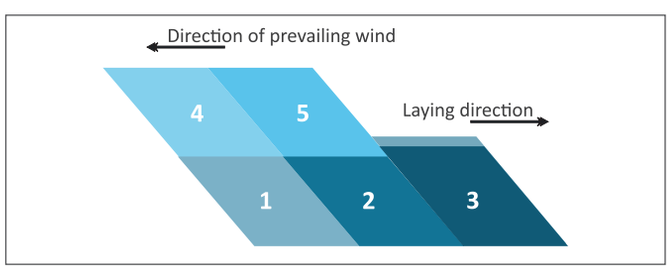
INSTALLATION

The recommended roof fixing method for Tekdek IT5 profile is as shown in the figure below.



FIXING PROCEDURE

Lay each run of sheets in turn from side to side before moving onto the next run as depicted below. Similar procedure for wall cladding too.

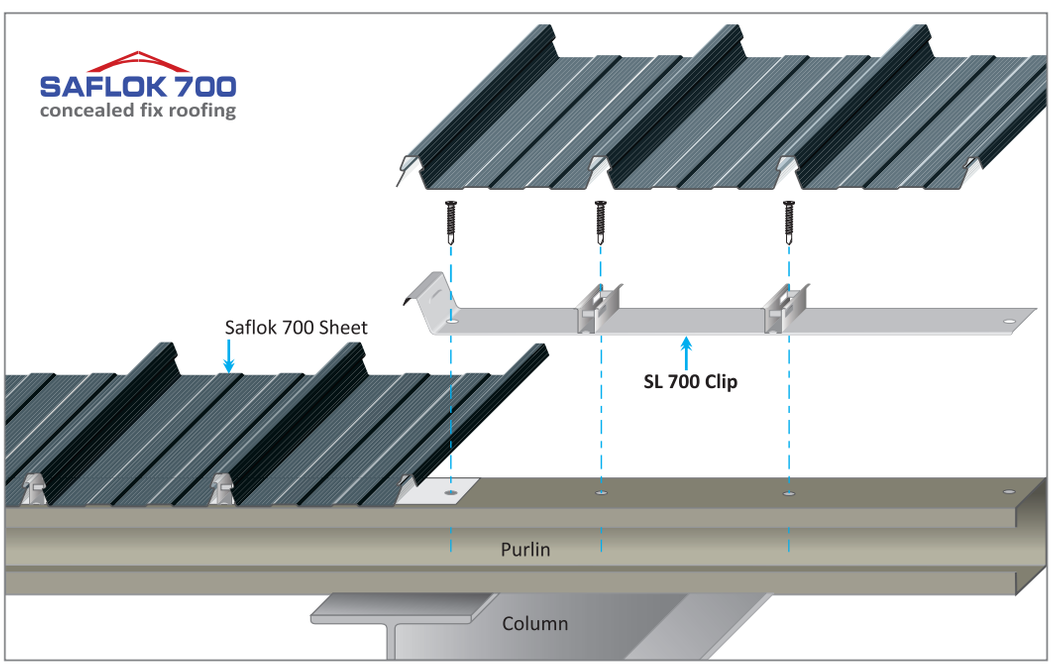


PRODUCT DESCRIPTION

Concealed-fix roofing, also referred to as secret fix, is designed for very low pitched roofs. Because clips under the sheet hold it down, the sheet is not punctured with fasteners, and remains completely watertight even at a very low slope. The securing clips are pre-fixed into the purlins and the sheet is mechanically snapped onto the clip

A concealed fix sheet can also expand and contract over the clips as the temperature changes, this system is ideal for long spans on industrial, commercial and retail buildings. The Saflok 700® concealed fix roofing system is an interlocking trapezoidal rib profile that can be rolled on site in lengths of up to 120metres

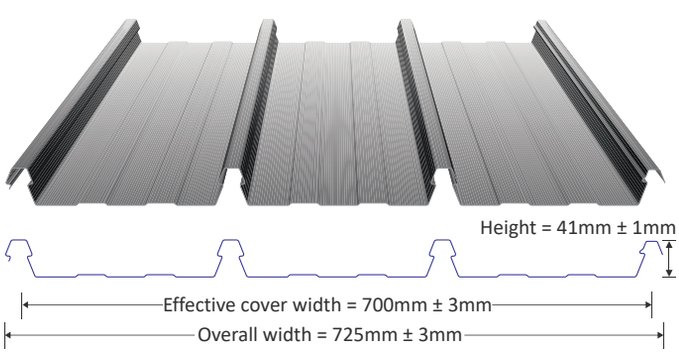
Saflok 700® may be rolled in coating of an 55% aluminium-zinc protective alloy on a carbon steel base, (bare or colour coated) or Aluminium (Mill Finish or G4 Colortech) On high slope roofs, the aesthetics of Saflok may be affected by occasional oil canning in the pans. This becomes visually apparent on slopes greater than 5 degrees, as the roof material becomes increasingly visible. It does not affect the structural integrity of the sheet in any way, and MRM will not entertain claims made for all canning. Saflok 700® can be curved or bullnosed to a minimum internal radius of 450mm-500mm. Reverse cranking is not possible.
Further information available on request.



SAFLOK 700 CLIP

The fully interlocking SAFLOK 700 clip incorporates two anchors to clasp the two inner ribs and a dual action component to positively hold down the male-female joint.

1. Stiffener ribs on 1mm baseplate and formidable strength, specifically over the goose-neck.
2. The clip's male hooks allow for full width engagement on the profile's female goose-neck grooves.
3. The clips have 4 fastening points along their length for stability, particularly over the blanket insulation.
4. The geometry of the anchor unit is engineer- designed for optimal performance under high wind load and foot traffic.
5. The entire clip is manufactured from 1mm high-tensile GI or AZ coated steel for strength and compatibility with sheeting.



SAMPLE SPECIFICATION

MRM 0.50mm thick SAFLOK 700 Colorplus ® AZ150 interlocking roof sheeting fixed to steel internal purlins at 2000mm, and ridge/eaves purlins at 1700mm centres using SAFLOK 700 clips which must be screw fixed to steel purlins with Fixtite ®. The sheeting will be a double interlocking concealed fix SAFLOK 700 profile as manufactured by MRM, roll formed in continuous lengths from certified G550 steel or aluminium 3004 H14. The profile shall be roll formed with 4ribs and centres not exceeding 233mm and a cover width not exceeding 700mm. The male rib is to include spurs to ensure a double interlocking action with adjacent sheets. The minimum sheet depth will be 41mm. Two stiffening ribs are incorporated in each pan. We do not recommend using Saflok on a pitch exceeding 5 degrees due to possibility of oil canning.

PURLIN SPACINGS

GAUGE	0.4mm	0.5mm	0.6mm
MATERIAL	**ALUMINIUM -ZINC**	**ALUMINIUM -ZINC**	**ALUMINIUM -ZINC**
ROOF	**mm**	**mm**	**mm**
Single Span	1400	1700	1400
End Span	1600	1900	1500
Internal/Double Span	1800	2100	2000
Cantilever (Unstiffened)	150	150	180
Cantilever (Stiffened)	350	300	380
SIDE CLADDING	**mm**	**mm**	**mm**
Single Span	2100	2300	1600
End Span	2400	2600	2200
Internal Span	2600	2700	2400
Cantilever	300	400	300
Approximate Mass/m²	5.2kg	6.2kg	2.9kg

Saflok 700 clips are calculated at 330g per clip – require approximately 1.5 clips per m²

Span tables are for SAFLOK 700 with light foot traffic only. Span tables are based on 1.5Kn downward point load, and1.6kPa upward pressure. The span tables are maximum recommended spans are based on buildings up to 10m high for a basic design wind speed of 28m/s, Terrain Category .

Note:
It is important to reduce purlin spacings by 20% when spring curving a roof.

LENGTHS & ROOF PITCH

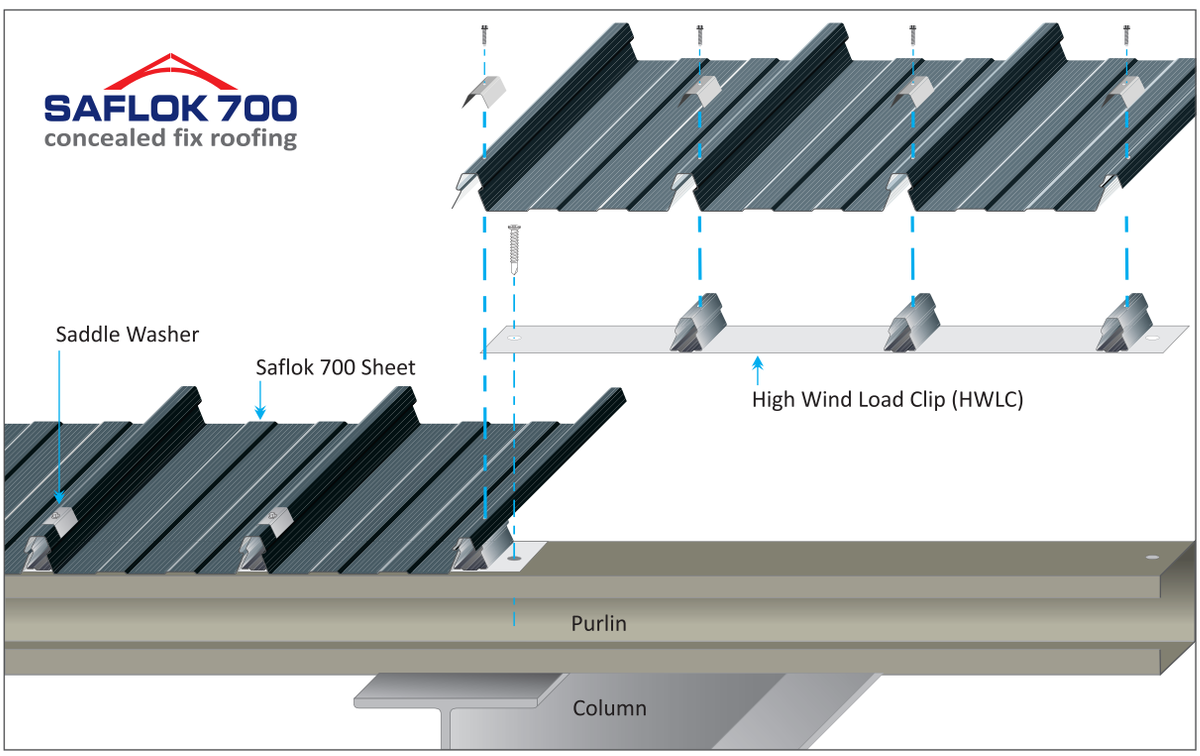
SAFLOK 700 can be ordered in any practical length as per customer requirements. On site rolling is recommended for length in excess of 13metres. The minimum roof pitch when using SAFLOK is 2º on steel and 3º on wood.

DRAINAGE TABLE

DRAINAGE TABLE	ROOF SLOPE				
RAINFALL INTENSITY MM/HOUR	**2°**	**3°**	**5°**	**8°**	**10°**
250	75	90			
300	65	75	95		
400	50	55	70	80	90
500	40	45	55	65	70
Maximum roof run for roof slopes and rainfall intensities shown.					

HIGH WIND LOAD INSTALLATION DETAILING (HIGH WIND ZONE AND COASTAL WIND BELTS)

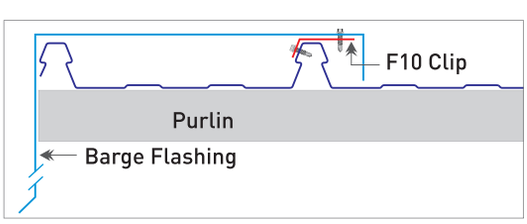
The installation process for using the High Wind Load System (HWLS) is a pierced fix method. The High Wind Load System is recommended for terrain categories A & B, (For reference on terrain categories, please refer to the Safal Group Design and installation Manual). Note that the HWLS is not a concealed fix system, and is therefore recommended only for the perimeter and/or overhang areas of the building. Buildings taller than 10m would also require special design attention and the use of the HWLS.



Step1. Starting with the female rib first, align first sheet and hold down.
Step2. Place saddle washers over the first 3 ribs above the purlins [starting from the female rib side]. Align, and fasten the saddle washers through the rib using an appropriate Fixtite® or Safintra approved fastener.
Step3. Position the next sheet, engaging the female rib firmly over the male rib of the previous sheet. Repeat step 2.

Note: The bonded washer can only be fixed from the top.

F10 BRACKET FOR FLASHINGS



Note:
This clip is positively fixed. Care should be taken when detailing industrial length sheeting and flashing due to thermal expansion.

MRM recommends the use of a Flashing Slider Clip for very long sheets. Please consult our Technical Department for assistance.

SPECIALISED FIXING ACCESSORIES

POLYSIDER CLIP

For use with Saflok polycarbonate sheeting. Must be installed with saddle washer. Polycarbonate sheets must be positively fixed – consult our technical department for advice.

FASTENERS

Where insulation is to be installed, you may need to increase the length of the fasteners given below, depending on the density and thickness of the insulation. When the fastener is properly tightened:

- Into metal: there should be at least three threads protruding past the purling you are fixing to, but the shankguard must not reach that purlin.

- Into timber: the fastener must penetrate the timber by the same amount that the recommended fastener would do if there were no insulation.

CRANKING

SAFLOK 700 sheets may be cranked and bullnosed but not reverse bullnosed. Minimum radius is 450mm. On – site cranking is available on request.

CURVING

Natural springing occurs at 36m radius in the convex and 60m radius in the concave. It is important to reduce purlin spacing's by 20% when spring curving a roof.

ROLLING STRAIGHT ONTO A ROOF

It is possible to roll form straight onto a roof using a scaffold ramp. The limitations are the building height and space needed to roll. A departure angle would damage the sheet when leaving the mill and again when bending to settle onto the roof. The sheeting cannot be roll formed onto a building higher than 10m.

SEALED JOINTS

For sealed joints use fasteners or rivets and neutral – cure silicone sealant branded as suitable for use with AZ steel.

CONCEALED FIX ROOFING INTRODUCTION

Saflok and Newlok (unseamed) are both concealed fix or secret fix profiles as the anchoring system is not visible, which provides unstrained thermal expansion or contraction.

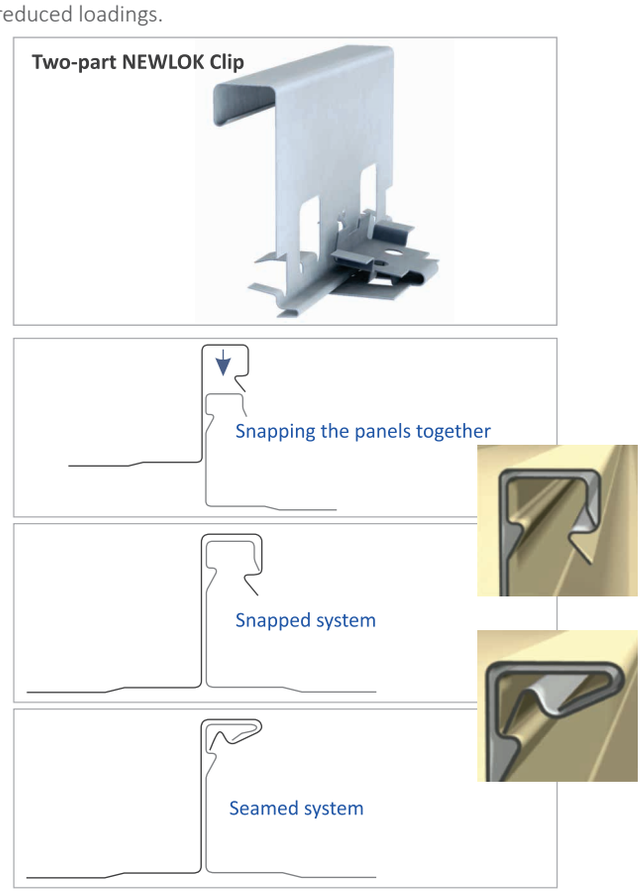
The difference between concealed fix and standing seam [Newlok] is that the Newlok profile can be seamed either mechanically or by hand, giving it additional wind uplift strength. Concealed fix roofing [also referred to as secret fix], is designed for very low pitched roofs. Because clips under sheet hold it down, the sheet is not punctured with fasteners, and remains completely watertight even at a very low slope. The securing clips are fixed over the male rib of the previous sheet and fastened to the purlins, and the female rib of the next sheet is mechanically snapped over the clip.

As a concealed fix sheet can also expand and contract with the clips as the temperature changes, this system is ideal for long spans on industrial and commercial buildings.

CLIPPING SYSTEM

The NEWLOK clip incorporates a two-part component to positively hold down the male female joint on every rib. It also incorporates a sliding halter to allow for thermal movement.

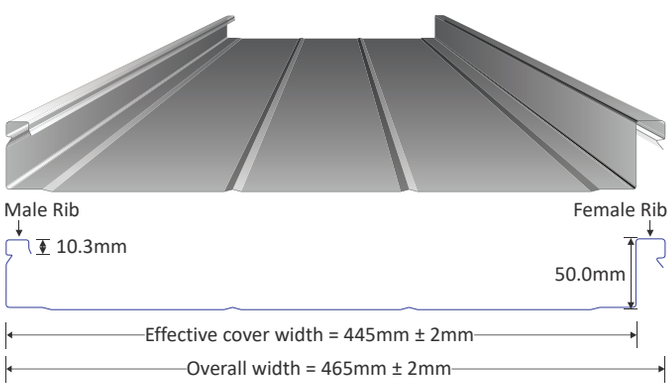
Seaming is recommended for industrial and commercial applications. For residential purposes, a snapped configuration is adequate due to reduced loadings.



NEWLOK PRODUCT DESCRIPTION

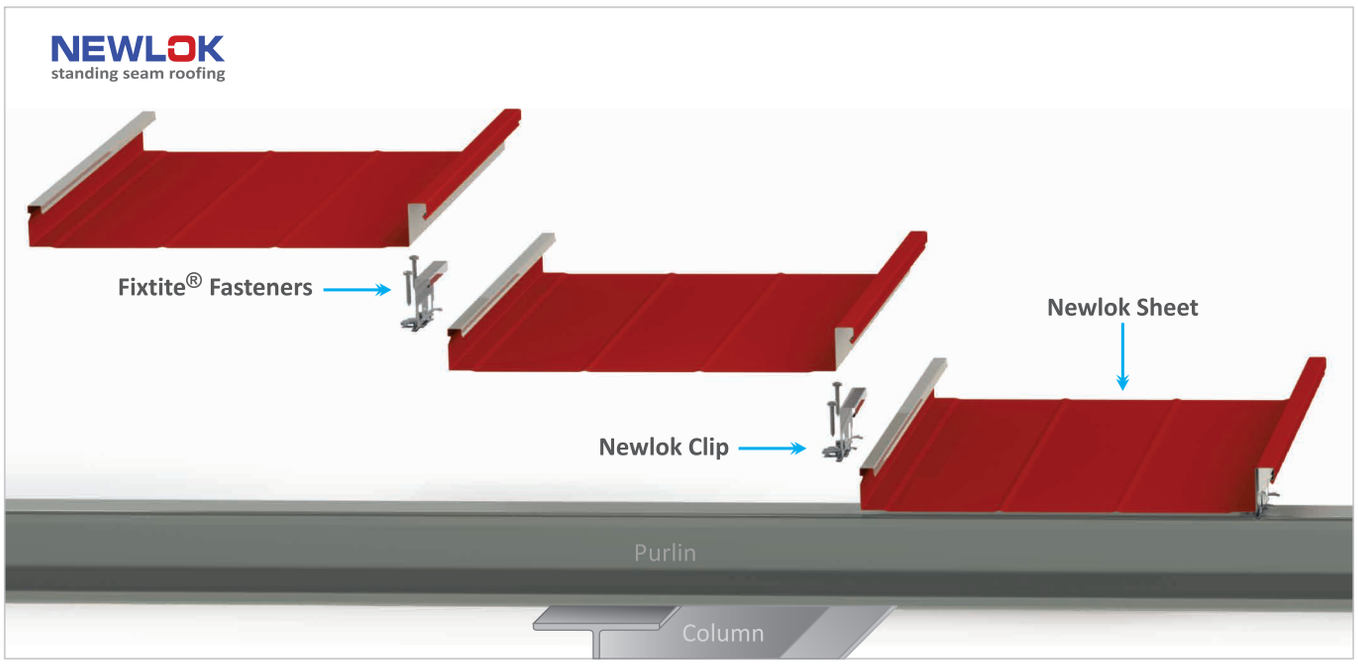
NEWLOK is a concealed fix, standing seam sheet profile with an effective cover width of 445mm, and a height of 50.8mm. it is designed for use on low pitched roofs and can withstand high wind conditions and has commercial, industrial and residential applications.

NEWLOK'S unique interlocking clipping system incorporates a concealed clip to positively hold down the male- female joint at every rib. The profile is usually roll formed on mobile mills on the building site, in lengths of up to 120m. The two-part clip allows for natural thermal expansion and contraction of the sheet, and the 50mm rib height delivers optima water shedding capabilities at slopes as low as 1.5 degrees.



NEWLOK FEATURES AND BENEFITS

- Unique profile offers either a snap- together or a snap- and- seam interlocking mechanism for optimum wind stability.
- Exceptional hold down strength, in excess of 3kPa hold down on negative wind uplift on the seamed profile.
- Interlocking system allows natural thermal expansion and contraction, without unclipping between purlin supports.
- Concealed fasteners provide increased security, as roof sheets cannot easily be removed from the outside.



PURLIN SPACINGS

Purlin spacing is dependent on both downward loading and negative suction loading caused by wind. Your engineer should be consulted to calculate your load [kN/m²] for your particular application.

Span tables are for NEWLOK with light foot traffic only. Span Tables are based on 1.5 kN downward pressure, 1.6kPa upward pressure and 0.75kPa for the side cladding, inward and outward.

The span tables are for a maximum of recommended spans based on buildings up to 10m high in medium wind zone, Terrain Category B. [See Safal Group Design & Installation Manual].

ROOFS:
Cpi=+0.20, Cpe=0.90, Kl=2.0 for single and end spans, Kl=1.5 for internal spans.

WALLS:
Cpi= 0.20, Cpe=0.65, Kl=2.0 for single and end spans, Kl=1.5 for internal Spans. These spacings may vary by service ability and strength limit stated for particular projects.

	WIND LOADING		POINT LOAD		GAUNGE		
	*ASTE1592 - 01				0.55mm	0.55mm	0.8mm
MATERIAL	0.55mm Negative wind pressure [unfactored]	0.55mm Negative wind pressure	0.55mm Live point load [unfactored]	0.55mm Live point load	ALUMINIUM -ZINC	ALUMINIUM -ZINC	ALUMINIUM -ZINC
ROOF	**KPa**	**KPa**		**kN**	**mm**	**mm**	**mm**
End Span	3.597	2.767		1.5	1300	1600	900
Internal / Double Span	3.28	2.526		1.5	1500	1800	1400
Cantilever (Unstiffened)	-	-		-	150	150	100
Cantilever (Stiffened)	-	-		-	300	300	200
SIDE CLADDING	**KPa**	**KPa**		**kN**	**mm**	**mm**	**mm**
Single Span	3.027	2.329		-	1700	2000	1400
End Span	2.916	2.243		-	1800	2100	1600
Internal Span	2.548	1.960		-	2100	250	1900
Cantilever	-	-		-	300	300	300
Approximate Mass/m²	-	-		-	5.4kg	6.2kg	2.9kg

NEWLOK clips are calculated at 110g per clip- require approximately 3 clips per m².
***Factored ultimate loading [SANS 10237- reduction factor of 1.3].**

Note:
It is important to reduce purlin spacings by 20% when spring curving a roof.

SAMPLE SPECIFICATION

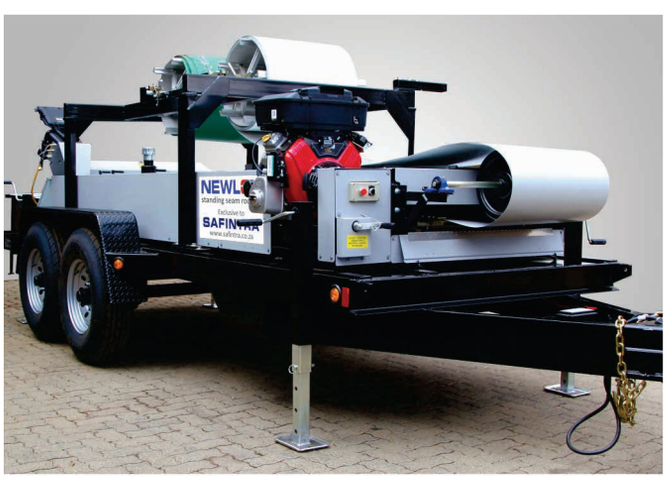
NEWLOK, roll- formed in 0.5mm Colorplus® AZ150, and snap-locked or snap-locked and seamed roof sheeting, fixed to steel internal purlins at 1500mm, and steel ridge/eaves purlins at 1300mm centres using NEWLOK clips which must be screw fixed to purlins with Fixtite®, all in accordance with manufacturer's recommendations.

The roof sheeting shall be manufactured by MRM, roll formed in continuous lengths and cut to length from Aluminium-Zinc coated steel.

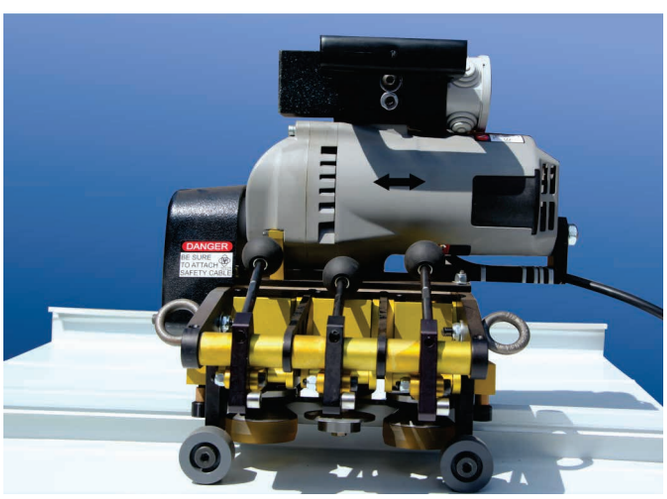
The profile shall be roll formed with 2 ribs of 50.8mm and a cover width of 445mm. two stiffening ribs shall be incorporated in the pan.

LENGTHS

With the aid of a mobile rolling mill, custom lengths can be rolled on-site. To date the longest continuous sheets have been in the region of 130m long. Off- site rolled sheets are cut to transportable lengths [approximately 12m]



NEWLOK Mobile Mill



Mechanical Seamer

90° Hand Crimper

AVAILABLE TESTING	DESCRIPTION	RESULT
ASTM E- 1592	1 Foot and 5 Foot Wind Test	The max, sustained test pressure was – 3.735kPa for 1 foot & -12.942kPa for 5 foot.
ASTM E-1680	Air leakage Test	Air Infiltration 7.665kPa as leakage of 2.631 x 10-6m³ /min per m² & 0.017m³ / min per m. Air Infiltration 30.466kPa has leakage of .261 x 10-6m³/min per m² & 0.026 x 10-3m³ / min per m.
ASTM E – 1646	Water penetration test	Water penetration 30.466kPa has no water leakage.
FM 4471	Foot Traffic Test [pending]	Results pending.

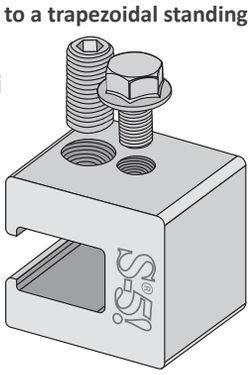
NEWLOK ROOFING WITH S-5 CLAMPS

Top quality clamps, such as the S-5 range, may be attached to the ribs without penetrating the roof sheet, thus preserving metal material warranties as well as installation warranties on water- tightness.

The S-5 H90 Mini clamp (pictured) is ideal for the NEWLOK profile, particularly for light weight attachments such as solar arrays, satellite dishes, walkways and mechanical equipment.

S-5 H90 Mini clamp affixed to a trapezoidal standing seam profile.

S-5 H90 Mini



RAIL ATTACHMENT OF SOLAR PV PANELS

In some cases, rail may be required to maximise space, but at a premium cost of substructure. Even in this instance, the rails can be attached using S-5, with zero penetration of the roof sheet.

DIRECT ATTACHMENT

Direct attachment maximizes economy, removing the need for expensive railing. The S-5 PV attachment unit has a Mid-Fix option (picture above) and End-Fix option to accommodate any solar array design.

Disclaimers:

- Test results available on S-5 website.
- S-5 H90 mini clamps are suitable for seamed profiles only.
- S-5 H-Clamp available ex USA for unseamed NEWLOK

FLASHINGS

Flashings are made for particular applications and locations on the roof, with variations to suit the specific profile being used.

Industrial and commercial flashings tend to be functional more than aesthetic, and MRM makes a range of standard flashings which are suitable for this purpose.

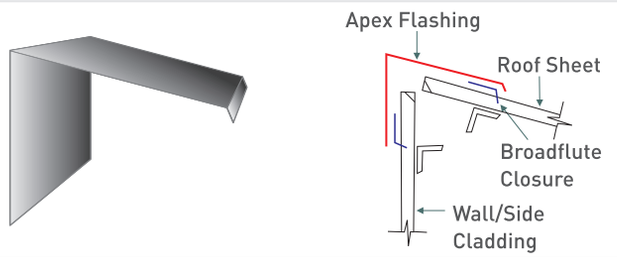
Residential flashings however, usually have an important aesthetic role which necessitates that they are designed for the structure in question.

MRM is able to produce most custom designed flashings for residential and other applications- please ask your local branch for more information.

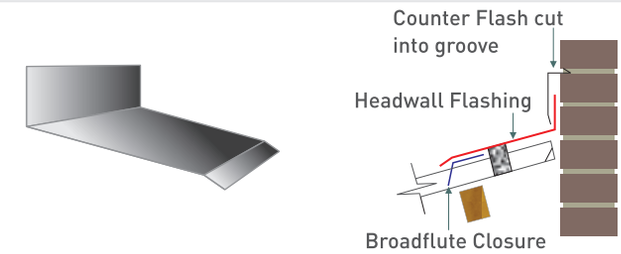
Flashings are usually made in the same material as the roof, for colour matching. MRM flashings are offered in Aluminium –Zinc coated steel and Aluminium. All counter flashings are sealed with silicone-not cement.

Please speak to our flashings department for further guidance and technical assistance.

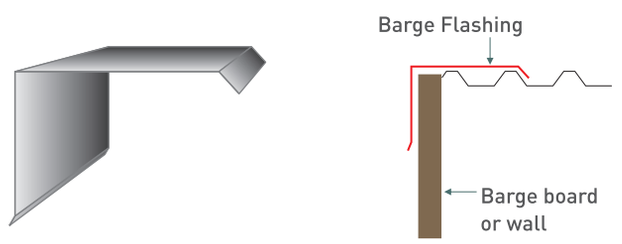
Apex Flashing



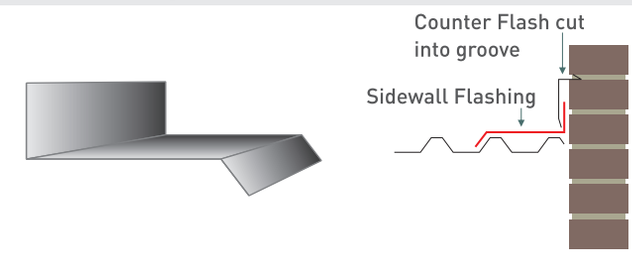
Headwall Flashing



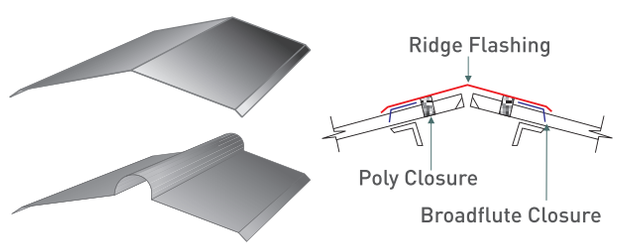
Barge Flashing



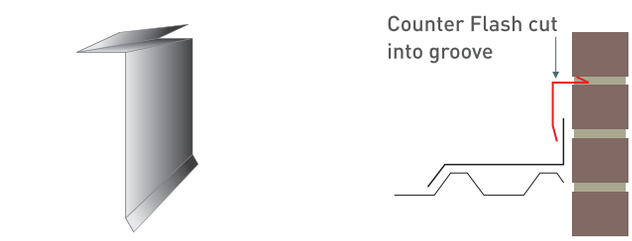
Sidewall Flashing



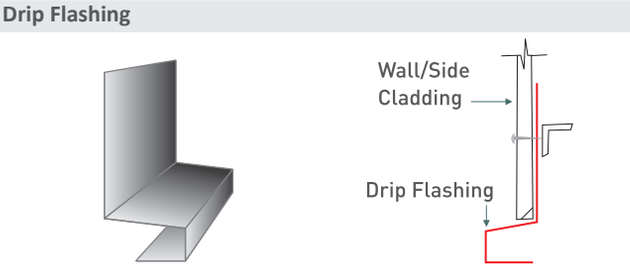
Ridge/Hip Flashing



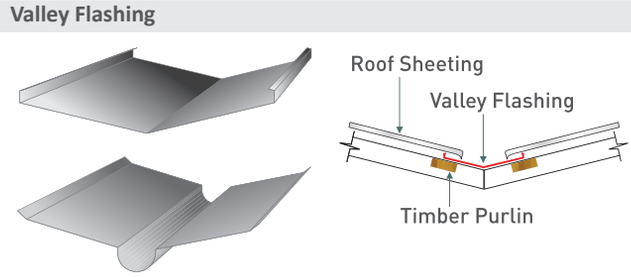
Counter Flashing



Drip Flashing



Valley Flashing



GENERAL NOTES

TRANSPORT

MRM profiles can be supplied in any length, limited only by handling and transport ordinance regulations. The normal length that can be transported by road is 13.2 meters. Saflok 700 and Newlok is rolled on-site to any length required

STORAGE

WET STORAGE STAIN

Steel sheets are normally treated with a special chromate solution, under strictly controlled conditions (i.e. the sheet is passivated) before leaving the Mill. Although this process ensures long and satisfactory protection to sheets, wet storage stain or white rust can still occur. One of the main conditions which may give rise to this problem is sheets being exposed to water while stacked, which restricts air circulation between sheets.

It is therefore important that sheets remain dry and that they do not come into contact with each other at any point if exposed to water. If sheets cannot be stored in a dry storage space, they should be stood on end and spaced out at the bottom.

A drop in temperature after a warm, humid day may also lead to condensation of moisture throughout the stack. And because the temperature is usually at its lowest during the night, the risk of condensation is increased.

The stain that is created does not compromise the integrity of the sheet, but does have a negative impact on the aesthetic value.

TECHNICAL

EDGE WAVE AND OIL CANNING

The amount of edge wave or oil canning is dependant upon the varying mechanical properties of the coil used. Stiffeners ribs are incorporated into the troughs to minimise the effects of oil canning.

SURFACE CONTAMINATION

Care should be taken to ensure that none of the debris arising from the fixing of steel roof remains on the sheets after completion of work. If nails, swarf, etc. are allowed to remain on roof sheets, unsightly spots will soon appear. Initially these rust sport will merely be stains from rapidly rusting fine particles of steel, if allowed to develop further, a loss of zinc coating in the stained areas will appear. Nails, particles of steel, etc. will also stain and ultimately reduce the life expectancy of sheets. Sheets are often subject to wet cement splashes that create an area that is subject to alkali attack. Cement splashes should therefore be cleaned off immediately.

Note:
During installation, clean the roof daily by removing all swarf, pop rivets and unused fasteners or an other debris.

WIND TERRAIN CATEGORIES

It is important to consultant an engineer at design stage, to ensure the correct specification of purlin spacing and roof sheet gauge.

CORROSION

The coast line of Africa is a particularly harsh enviroment which carries coastal chlorides. In urban areas, corrosion is accelrated by the presence of sulphur emissions from industry and traffic. The choice of the correct steel substrate is therefore important to avoide high replacement costs and losses in rentals, etc. Please request additional information from MRM in this regard.

BULLNOSING AND CRANKING

CRANKING OF PROFILED SHEETING

Cranking of a profiled sheet incorporates lateral rib indentations pressed in at uniform distances which vary according to the radius requirements.

Cranked sheets can be supplied in standard radii as follows:

PROFILE	MINIMUM RADIUS (INSIDE CURVE)
SAFLOK 700	500 mm
TEKDEK-IT5	500 mm
TRIMFLUTE	500 mm
MAXCOVER	500 mm
CORRUGATED	500 mm

NB. Negative (Reverse) Cranking on SAFLOK 700 cannot be performed due to the nature of the profile
Please contact the manufacturer if any clarification is required.

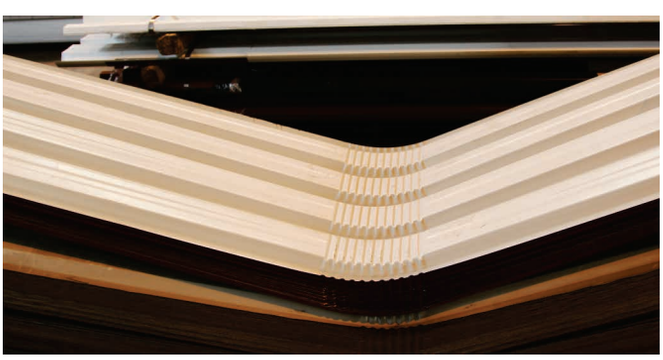
When ordring cranked sheets, details should be given using our standard information sheet- please contact technical department at your nearest branch.

EXPANSION

It should be noted that Aluminium has ann expansion co-efficient which is twice that of conventional steel substrates. If the sheet is the opposite direction.

With the use of Saflok 700 this problem is reduced due to the fact that the profile will slide on the clip.

NB: Profiles can be cranked to a minimum thickness of 0.4mm.



STANDARD CRANK

Normally with the narrow flute uppermost and the bend away from the angular inclination.

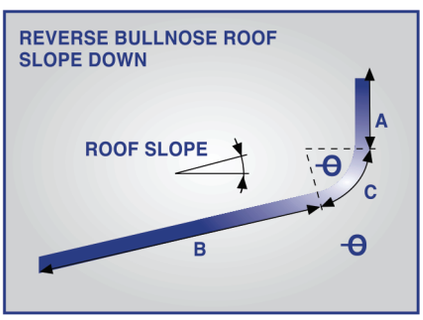
REVERSE CRANK

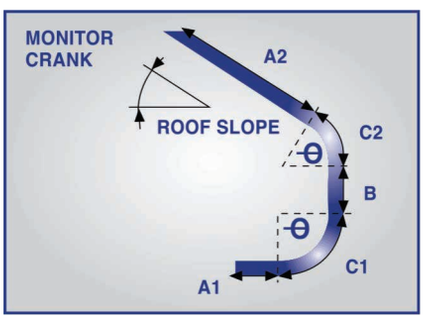
Normally with the narrow flute downward and the bend into the narrow flute. Applies to pierced fix profiles only.

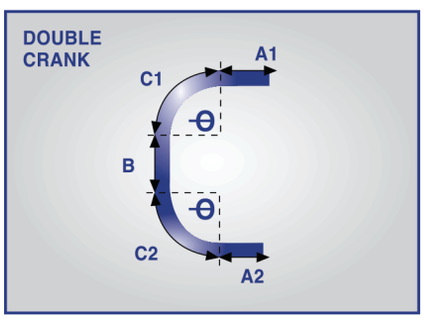
BULLNOSING AND CRANKING

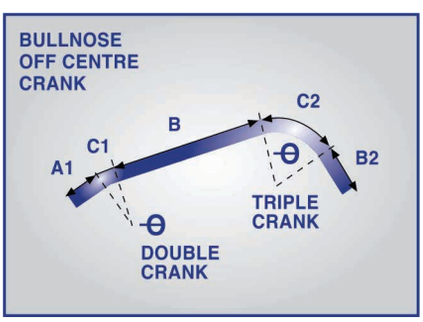
These drawings show the various types of bullnosing and cranking available on MRM sheeting. Before production may commence, we will require a detailed drawing giving all the required data, and duly authorized by the customer.

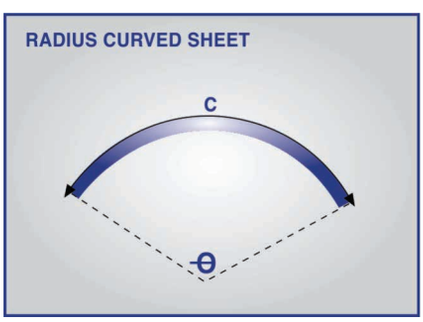
Note:
During installation, clean the roof daily by removing all swarf, pop rivets and unused fasteners or any other debris.

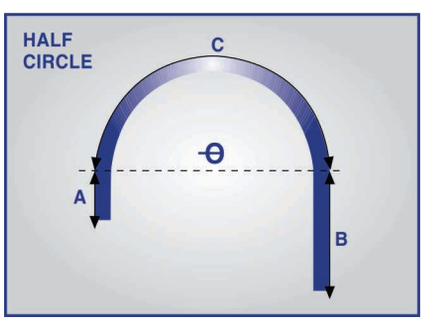


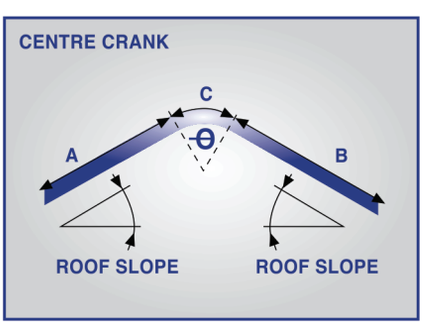


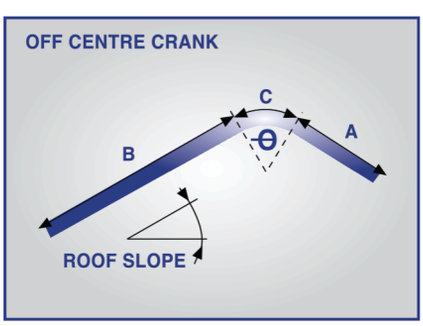


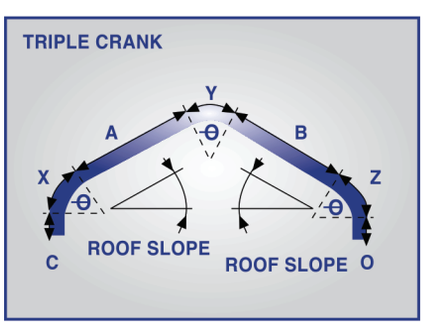


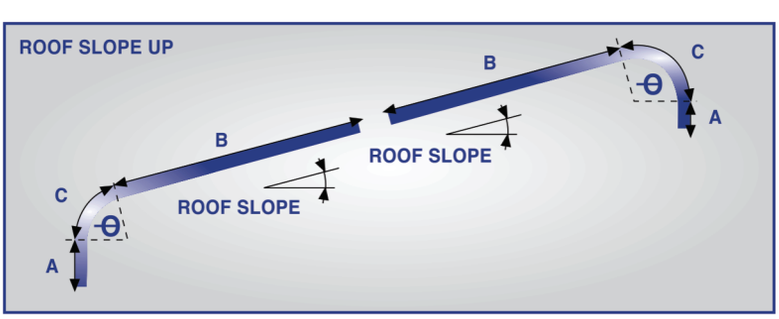










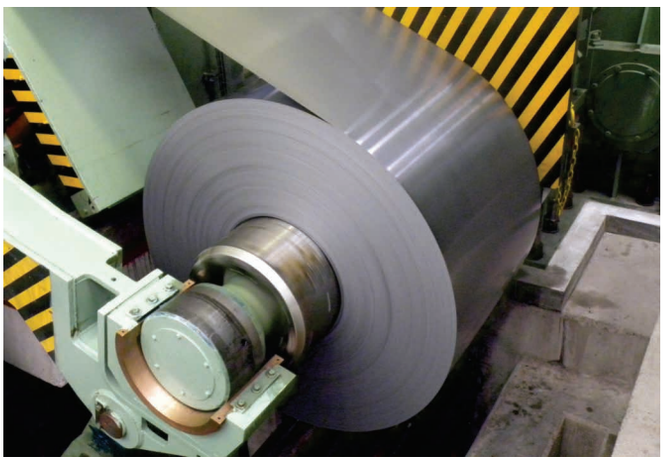


MINIMUM RADII FOR NATURALLY SPRUNG SHEETING		
	CONVEX	CONCAVE
SAFLOK 700	36 metres	60 metres
TEKDEK-IT5	30 metres	60 metres
TRIMFLUTE	28 metres	55 metres
MAXCOVER	28 metres	55 metres
CORRUGATED	25 metres	25 metres

ADDITIONAL SERVICES

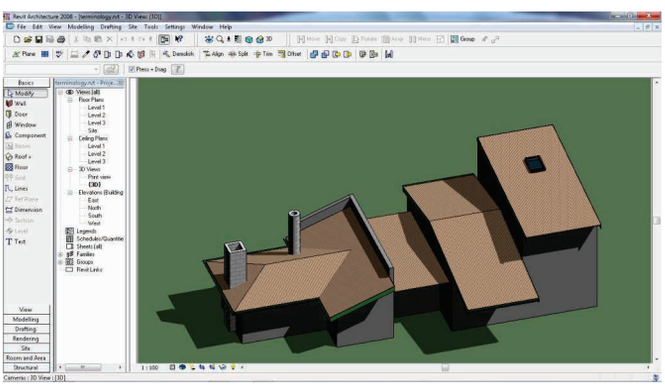
ON SITE ROLLING

MRM offers on-site rolling of Saflok 700 and Newlok.



TECHNICAL SERVICES

A full technical advicory service is available on request.



TILING INDEX

Disclaimer:

- Care has been taken to ensure that the information provided is accurate. MRM does not assume responsibility for inaccuracies or misinterpretations of this data.
- MRM is continuously engaged in product development, please ensure that you have the most recent issue of information from MRM.
- Photographs and illustrations are typical examples of roofing and cladding products and cladding products and applications.

PRODUCT DESCRIPTION

Versatile® is Kenya's longest running painted steel tile that has built a legacy of affordable beauty for thousands of product users. A pragmatic choice for any developer. Versatile is a premium steel tile roofing sheet with the look of a classic roof tile but with a much longer life span. Count on a Versatile Roof to provide unmatched beauty, durability and cost efficiency.

Renowned for beauty and durability. Versatile is the market leader in steel tile roofing sheets among homeowners countrywide.

FEATURES

Sheets:

- Continous length profile increases visual uniformity.
- Reduces chance leakage.
- Lightweight safer to lift and install while enabling the supporting structure to be less bulky/costly.

Installation:

- No underlays needed.
- Rapid roof coverage.
- Large panel size enables roofing to be completed faster.
- Easy and secure- roofing sheets are fixed to the roof structure.

Quality:

- MRM Mark of Quality - each sheet is inspected over 6 times before dispatch.

Coating:

- Engineered to prevent leakage by capillary action.
- World class patented coating technology.

PURLIN SPACINGS

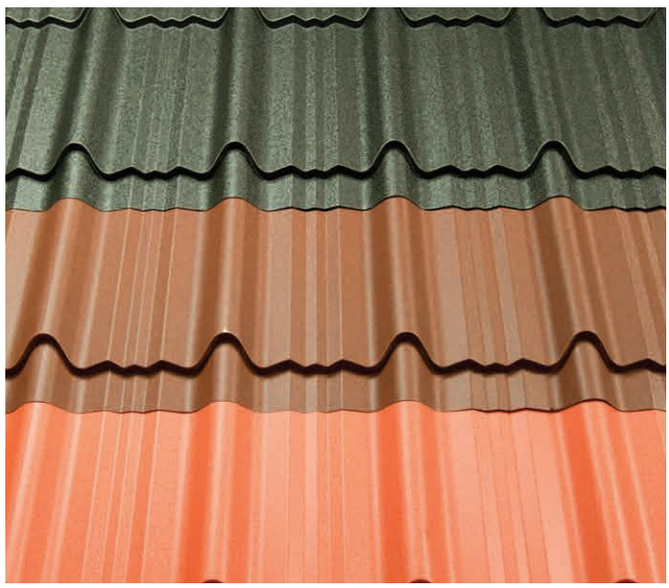
Battens / purlins should be spaced at 300mm on both ridge and eave (i.e.: at every tile step), and at maximum 600mm (i.e.: at every second tile step) 0 internal spans, although battens at every step will be stronger.

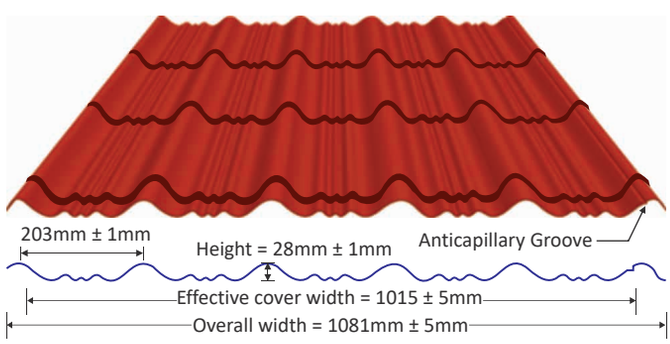
MATERIAL OPTIONS

Aluminium - Zinc	Gauge (mm)
AZ85, AZ100-AZ150	0.32 0.40 0.50 0.60

Versatile is rolled in soft material only- G275

Input Coil Width	1220
Profiled Sheet Width (Overall Width)	1077
Rib to Rib width i.e. pitch	203
Depth of Each Tile (Step To Step)	300
Effective Cover Width	1015
Purling Spacing	300





SPECIFICATIONS

Profiles cover width:	1100 ± 5mm
Effective cover width:	1015 ± 5mm
Length/square meter:	985mm
Lengths:	600mm upwards in multiples of 300mm Maximum recommended lenght for 0.32mm is 6m.
Base materials:	ZINCAL© coils made using world class patented metal coating technology
Paint systems:	Colour plus textured and optima
Finish:	Gloss or textured
Thickness:	0.32mm, 0.4mm, 0.5mm,0.6mm (+/10%) Maximum 0.60mm (22g)

ROOF PITCH

Versatile can be used on a roof pitch from as low as 15°.

Note:
During installation, clean the roof daily by removing all swarf, pop rivets and unused fasteners or any other debris.

DARK GREEN | MAROON | TILE RED | BRICK RED

CHARCOAL | CHOCOLATE | AQUA GREEN | GRAPHITE GREY

ZENTILE

PRODUCT DESCRIPTION

Zentile® is the true expression of harmony and elegance in a painted steel tile, alluding to the quiet power of ocean waves in a beautiful roof finish. Zentile is a steel tile roofing sheet with a durable and water resistant surface while offering a good-looking contemporary appearance.

Zentile is fast becoming a popular choice for designers and home owners alike. The wave like shape inspires peace, harmony and well-being while allowing for one's creativity to flow freely.

FEATURES

Sheets:

- Continous length profile increases visual uniformity.
- Reduces chance leakage.
- Lightweight safer to lift and install while enabling the supporting structure to be less bulky/costly.

Installation:

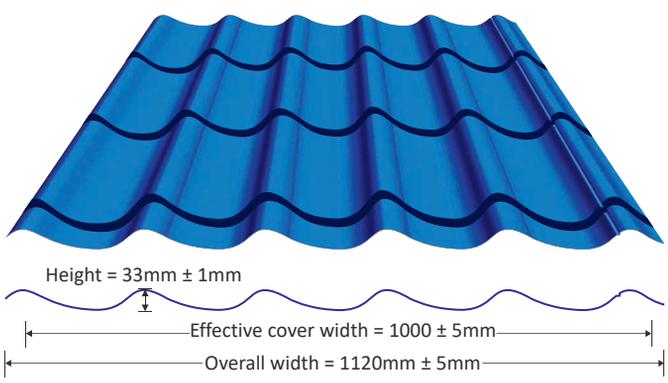
- No underlays needed.
- Rapid roof coverage.
- Large panel size enables roofing to be completed faster.
- Easy and secure- roofing sheets are fixed to the roof structure.

Quality:

- MRM Mark of Quality - each sheet is inspected over 6 times before dispatch.

Coating:

- Engineered to prevent leakage by capillary action.
- World class patented coating technology.



PURLIN SPACINGS

Battens / purlins should be spaced at 300mm on both ridge and eave (i.e.: at every tile step), and at maximum 600mm (i.e.: at every second tile step) 0 internal spans, although battens at every step will be stronger.

MATERIAL OPTIONS

Aluminium - Zinc	Gauge (mm)
AZ85, AZ100-AZ150	0.32 0.40 0.50 0.60

Zentile is rolled in soft material only- G275

Input Coil Width	1220
Profiled Sheet Width (Overall Width)	1120
Rib to Rib width i.e. pitch	200
Depth of Each Tile (Step To Step)	300
Effective Cover Width	1000
Purling Spacing	600

SPECIFICATIONS

Profiles cover width:	1120 ± 5mm
Effective cover width:	1000 ± 5mm
Length/square meter:	1000mm
Lengths:	600mm upwards in multiples of 300mm Maximum recommended lenght for 0.32mm is 6m.
Base materials:	ZINCAL© coils made using world class patented metal coating technology
Paint systems:	Colour plus textured and optima
Finish:	Gloss or textured
Thickness:	0.32mm, 0.4mm, 0.5mm, 0.6mm (+/-10%) Minimum 0.3mm(28g) Maximum 0.60mm (22g)

ROOF PITCH

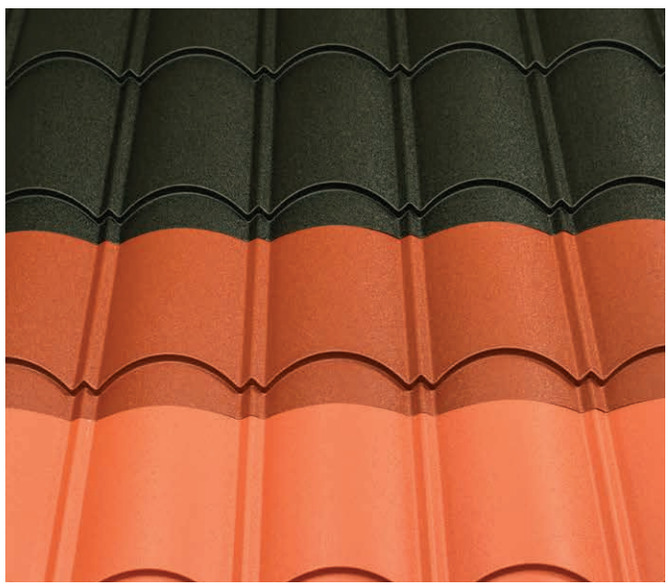
Zentile can be used on a roof pitch from as low as 15°.

Note:
During installation, clean the roof daily by removing all swarf, pop rivets and unused fasteners or any other debris.

DARK GREEN | MAROON | TILE RED | BRICK RED
CHARCOAL | CHOCOLATE | AQUA GREEN | GRAPHITE GREY

PRODUCT DESCRIPTION

Orientile® combines the exotic aesthetic of the orient with the widest coverage for economy and practicality. The shape is the embodiment of grace and distinction. A very popular modern day choice Orientile is an aesthetically pleasing steel sheeting profile that gives the look of an exotic tile finish.



FEATURES

Sheets:

- Continous length profile increases visual uniformity.
- Reduces chance leakage.
- Lightweight safer to lift and install while enabling the supporting structure to be less bulky/costly.

Installation:

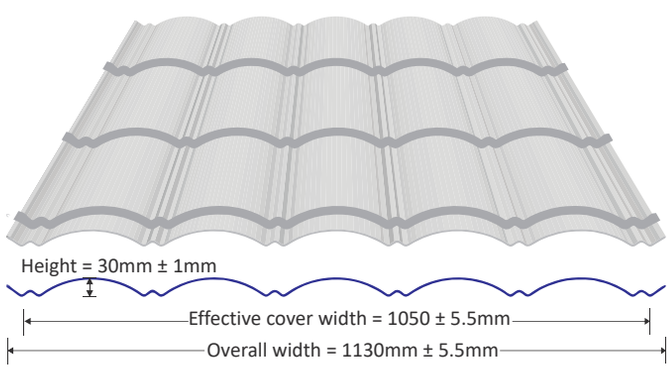
- No underlays needed.
- Rapid roof coverage.
- Large panel size enables roofing to be completed faster.
- Easy and secure- roofing sheets are fixed to the roof structure.

Quality:

- MRM Mark of Quality - each sheet is inspected over 6 times before dispatch.

Coating:

- Engineered to prevent leakage by capillary action.
- World class patented coating technology.



PURLIN SPACINGS

Battens / purlins should be spaced at 300mm on both ridge and eave (i.e.: at every tile step), and at maximum 600mm (i.e.: at every second tile step) 0 internal spans, although battens at every step will be stronger.

MATERIAL OPTIONS

Aluminium - Zinc	Gauge (mm)
AZ85, AZ100-AZ150	0.32 0.40 0.50 0.60

Orientile is rolled in soft material only- G275

Input Coil Width	1220
Profiled Sheet Width (Overall Width)	1130
Rib to Rib width i.e. pitch	210
Depth of Each Tile (Step To Step)	300
Effective Cover Width	1050
Purling Spacing	600

SPECIFICATIONS

Profiles cover width:	1130 ± 5mm
Effective cover width:	1060 ± 5mm
Length/square meter:	963mm
Lengths:	600mm upwards in multiples of 300mm
Base materials:	ZINCAL© coils made using world class patented metal coating technology
Paint systems:	Colour plus textured and optima
Finish:	Gloss or textured
Thickness:	0.32mm, 0.4mm, 0.5mm, 0.6mm (+/-10%) Minimum 0.3mm(28g) Maximum 0.60mm (22g)

ROOF PITCH

Orientile can be used on a roof pitch from as low as 15°.

Note:
During installation, clean the roof daily by removing all swarf, pop rivets and unused fasteners or any other debris.

DARK GREEN | MAROON | TILE RED | BRICK RED

CHARCOAL | CHOCOLATE | AQUA GREEN | GRAPHITE GREY

ELEGANTILE

PRODUCT DESCRIPTION

Elegantile® combines an aesthetic from the royal Romanesque palaces with the graceful curves of a grounded tile form.

FEATURES

Sheets:

- Continous length profile increases visual uniformity.
- Reduces chance leakage.
- Lightweight safer to lift and install while enabling the supporting structure to be less bulky/costly.

Installation:

- No underlays needed.
- Rapid roof coverage.
- Large panel size enables roofing to be completed faster.
- Easy and secure- roofing sheets are fixed to the roof structure.

Quality:

- MRM Mark of Quality - each sheet is inspected over 6 times before dispatch.

Coating:

- Engineered to prevent leakage by capillary action.
- World class patented coating technology.

PURLIN SPACINGS

Battens / purlins should be spaced at 300mm on both ridge and eave (i.e.: at every tile step), and at maximum 600mm (i.e.: at every second tile step) 0 internal spans, although battens at every step will be stronger.

MATERIAL OPTIONS

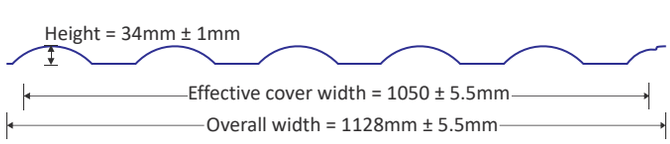
Aluminium - Zinc	Gauge (mm)
AZ85, AZ100-AZ150	0.32 0.40 0.50 0.60

Elegantile is rolled in soft material only- G275

Input Coil Width	1220
Profiled Sheet Width (Overall Width)	1128
Rib to Rib width i.e. pitch	210
Depth of Each Tile (Step To Step)	300
Effective Cover Width	1050
Purling Spacing	600

ROOF PITCH

Elegantile can be used on a roof pitch from as low as 15°.



SPECIFICATIONS

Profiles cover width:	1128 ± 5mm
Effective cover width:	1050 ± 5mm
Length/square meter:	953mm
Lengths:	600mm upwards in multiples of 300mm Maximum recommended lenght for 0.32mm is 6m.
Base materials:	ZINCAL© coils made using world class patented metal coating technology
Paint systems:	Colour plus textured and optima
Finish:	Gloss or textured
Thickness:	0.32mm, 0.4mm, 0.5mm, 0.6mm (+/-10%) Minimum 0.3mm(28g) Maximum 0.60mm (22g)

Note:
During installation, clean the roof daily by removing all swarf, pop rivets and unused fasteners or any other debris.

DARK GREEN | MAROON | TILE RED | BRICK RED
CHARCOAL | CHOCOLATE | AQUA GREEN | GRAPHITE GREY

TILE PROFILED SHEETS
INSTALLATION, HANDLING & MAINTENANCE

FEATURES

Sheets:

- Continuous length profile increases visual uniformity and reduces chance of leakage.
- Engineered to prevent leakage by addition of a capillary break during roll forming.
- Lightweight- safer to lift and install while enabling the supporting structure to be less bulky / costly.
- A wide colour range available in 7 standard colours.

Installation:

- Large panelsize enables roofing to be completed faster.
- Easy & secure- roofing sheets are fixed to the roof structure.
- No underlays needed to ensure weather- proofness, unlike traditional tiles.

Quality:

- MRM mark of quality- each sheet is inspected over 6 times before dispatched.

Coating:

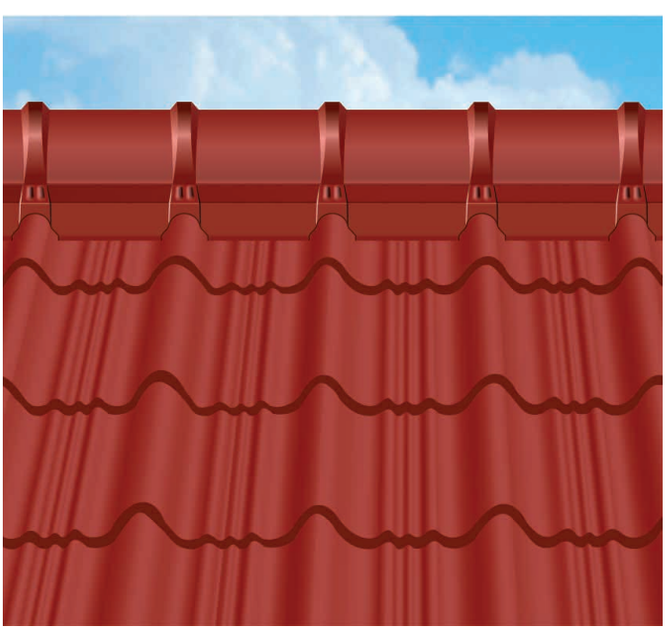
- World class patented coating technology for extended durability and lasting colour.

ROLL TOP RIDGES

All tile profiled sheets are sold as a complete system, with their own distinctive roll top ridges which are designed to complement the profile. The roll top ridge is notched, to allow it to be bent into the tiles as a closure.

NOTE:
The ridges have matching notches on either side.

During installation, ensure that the sheets are lined up to fit the notches on both sides of the roof. If laying sheets from left to right on the face, the sheets on the opposite face should be laid starting from the same side.



ON SITE CUTTING

For cutting thin metal on site, we recommend a circular saw with a metal cutting blade because it produces fewer damaging hot metal particles and leaves less resultant burn than a carborundum disc.

Cut materials over the ground and not over other materials.

Sweep all metallic swarf and other debris from roof areas and gutters at the end of each day and at the completion of the installation. Failure to do so can lead to surface staining when the metal particles rust.

SEALED JOINTS

For sealed joints use screws or rivets and neutral-cure silicone sealant branded as suitable for use with Aluminium-Zinc coated steel.

STORAGE AND HANDLING

Keep the product dry amd clear of the ground. If stacked or bindled product becomes wet, separate and wipe with clean cloth to dry thoroughly. Handle materials carefully to avoid damage, don't drag materials over rough surfaces or each other, don't drag tools over materials, protect from swarf.

MAINTENANCE

Optimum product life will be achieved if roofs are washed regularly.

TILE PROFILED SHEETS
INSTALLATION, HANDLING & MAINTENANCE

INSTALLING TILE PROFILED SHEETS

ORDERING AND INSTALLING THE SHEETS

Tile profiled sheets are always laid into the prevailing weather- this should guide your installation process, which in turn affects the detail of your order.

Recommended structure: Custom designed light gauge steel structure or Minimum 50 x 50mm purlins (recommended) 100 x 50mm (trusses/rafters) for timber structures.

Whereever possible, it is recommended that one use single lengths to cover each run of roof from ridge/crest to eave (avoid endlapping) for better aesthetics, economy and reduced chance of leakage.

Maximum Purlin Spacing: 600mm centers.

Roofing Procedure: Always overlap the left edge of the sheet over the right edge (looking from outside).

Roof Pitch: The tile can be used on roof pitches from minimum 12.5°.

Crest Fixing: The sheets are pierce fixed to steel or timber supports. This means that fastener screws pass through the sheeting. to maximize water tightness, always place roof screws through the crest of the sheeting. Always drive the screws through the crest of the sheeting and in the center of the crest. We recommend self-drilling screws fixed through the crest of the profile ribs using an electric screw-gun (drill). Screws must be used in conjunction with appropriate EPDM washers.

Please call our technical department for assistance.

SIDE LAPPING

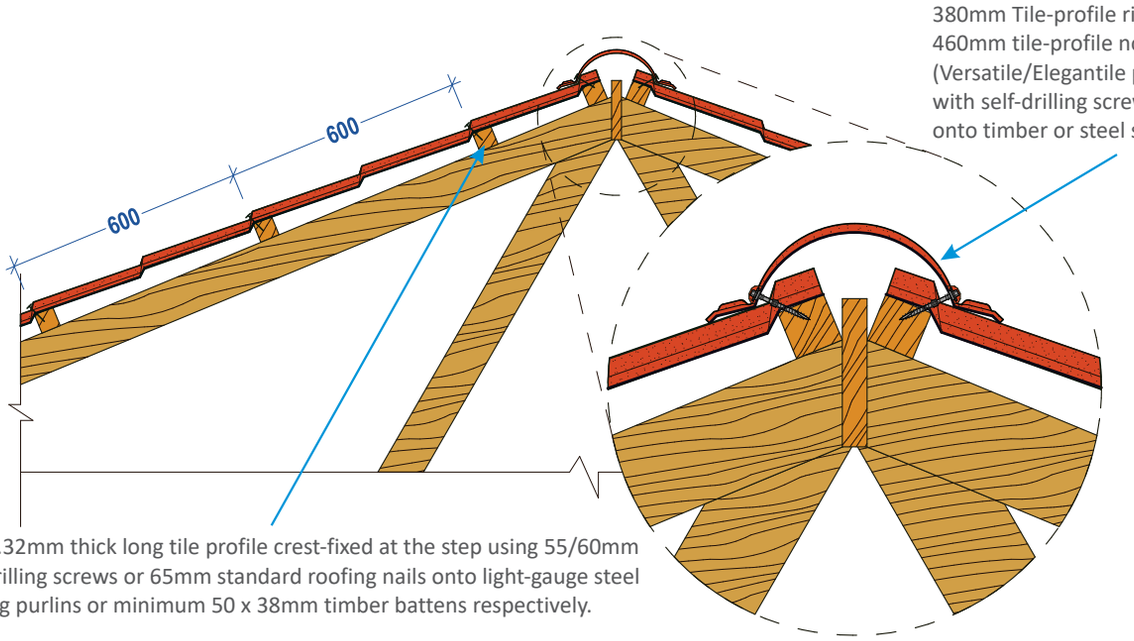
A standard lap is 1 flute. It is generally considered good practice to use fasteners along side laps.

FASTENERS

MRM recommends only Fixtite or MRM approved class 3 fasteners for inland regions and class 4 fasteners in coastal regions, especially within 5 kilometres of the coastline or similar conditions.

Steel: Class 3 (or 4) #12 x 68mm fasteners.
Timber: Class 3 (or type 17) #12 x 90mm fasteners.
Side Lapping: Class 3 (or 4) #14 x 20mm fasteners.

TILE PROFILES TYPICAL RIDGE FIXING DETAIL



380mm Tile-profile ribbed ridge or 460mm tile-profile notched ridge (Versatile/Elegantile profiles) fixed with self-drilling screws or roofing nails onto timber or steel structure purlins.

Min 0.32mm thick long tile profile crest-fixed at the step using 55/60mm self-drilling screws or 65mm standard roofing nails onto light-gauge steel roofing purlins or minimum 50 x 38mm timber battens respectively.

Max recommended purlin/batten spacing:
0.32mm tile profiles- 600mm
≥0.40mm profiles- 900mm (600mm preferred)

Lifestile Shingle

PRODUCT DESCRIPTION

Top your home off with timeless elegance. The Shingle tile evokes an old world Italian style to give your house a classic finish that never goes out of style. Roof your home with timeless elegance.

SPECIFICATIONS

Panel Size	1,350 x 420mm
Installed exposure	1,330 x 370mm
Length of cover	1,330mm
Width of cover	370mm
Panels/ m²	2,03PC's
PC's Tile area	0,4921m²
Weight/ m²	5,69 kg/ m²

ROOF PITCH

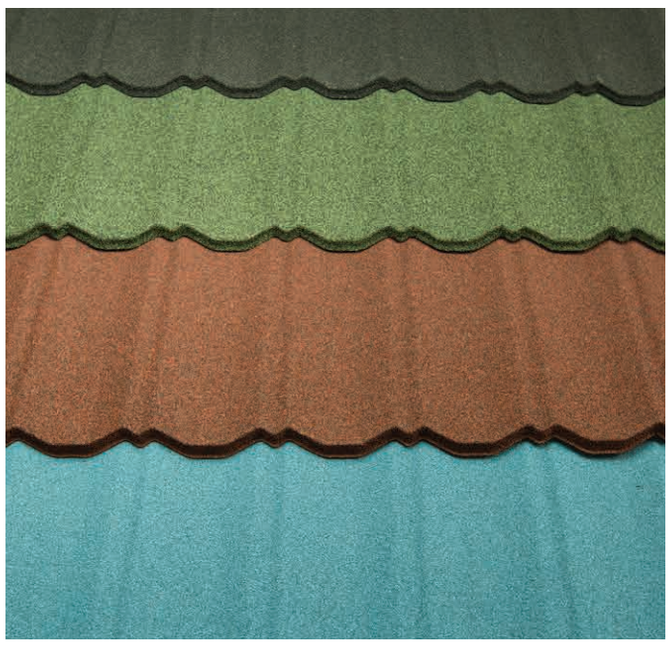
Lifestile shingle can be used on a roof pitched from as low as 10 degrees while reinforced with a water- proofing underlay like MRM's Minicorr.

COLOURS

Lifestile Wave

PRODUCT DESCRIPTION

The Wave tile with a profile similar to a traditional terracotta tile will stamp your personality on your house with a sophisticated, unique look.



SPECIFICATIONS

Panel Size	1,340 x 420mm
Installed exposure	1,265 x 370mm
Length of cover	1,265mm
Width of cover	370mm
Panels/ m²	2,14PC's
PC's Tile area	0,46805m²
Weight/ m²	5,98 kg/ m²

ROOF PITCH

Lifestile shingle can be used on a roof pitched from as low as 10 degrees while reinforced with a water- proofing underlay like MRM's Minicorr.

COLOURS

COMPONENT DETAIL

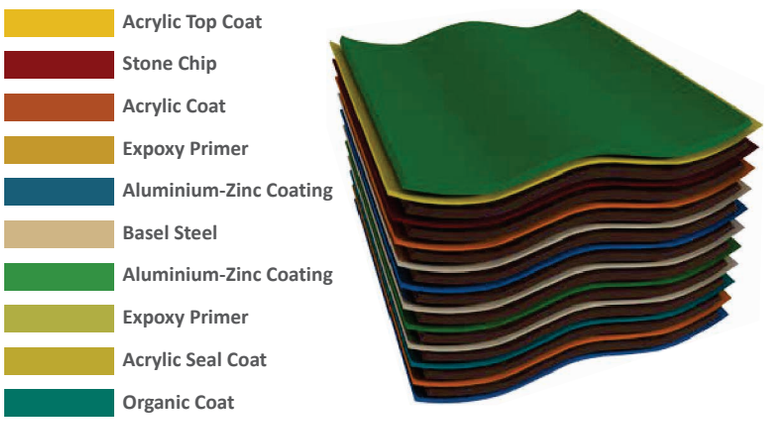
The Stone Coating Process
Quality Promise

Mabati Rolling Mills Ltd uses only the latest and best in stone coating technology.

MRM's Lifestile Roofing System is composed of several layers of materials pressed into different profiles then sealed with our exclusive polymer coating. Ceramic-coated stone chips that resist fading and UV degradation.

Lifestile roofing products are light-weight, yet extremely durable and trouble-free.

Why just build a roof when you can build a Lifestile?
Standards of beauty have changed over time when it comes to houses and roofs. The new standard of beautiful homes is having a Lifestile Roof on your house.



BEAUTY THAT LASTS A LIFETIME

Beauty is the quality of being pleasing to look at someone or something that gives great pleasure and this is the essence of our latest Brand – Lifestile. Form and function meet on Lifestile roofs. With texture, style and longevity not found in traditional roofing products, they exude timeless appeal – a good thing because every Lifestile roof is guaranteed for 50 years.

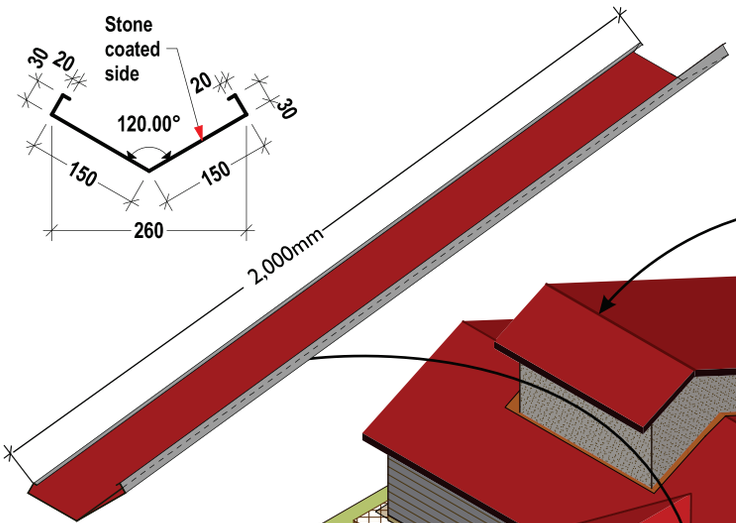
ATTRACTIVE APPEARANCE:
Appearance of Lifestile roofing has a premium finish and design to satisfy the most descerning homeowner

LIGHT WEIGHT:
At just 2,8 kg/ pc (5,98kg/ sqm) Lifestile roofs are eight times lighter tha clay or concrete tiles. This means less strain on the structure, easier and cheaper construction process.

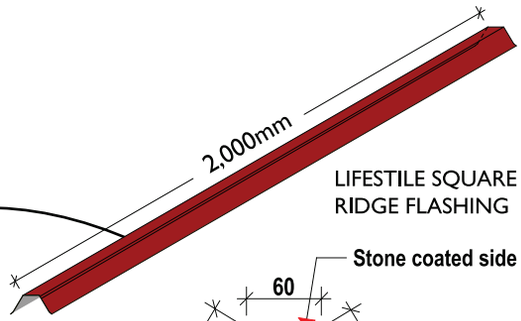
WIND RESISTANCE:
Despite being lightweight, Lifestile roofs are designed to withstand prolonged exposure to winds up to 233 kph

FIRE RESISTANCE:
All the materials that go into Lifestile roofing are non-combustible, ensuring protection from any fires.

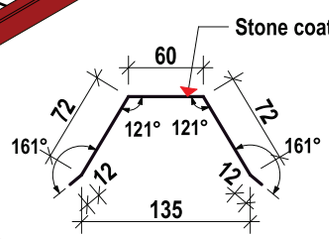
FLASHINGS FOR TILES

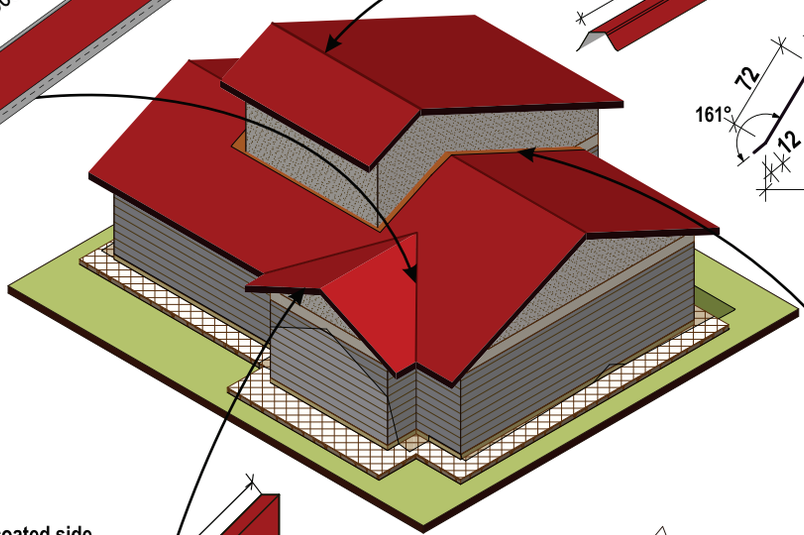


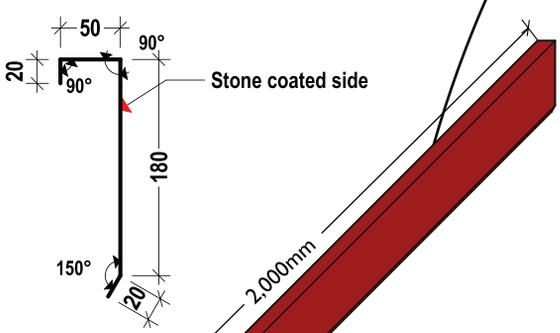
LIFESTILE VALLEY FLASHING - TYPE A



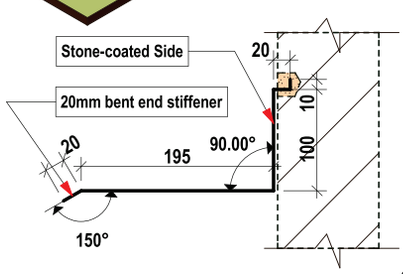
LIFESTILE SQUARE RIDGE FLASHING

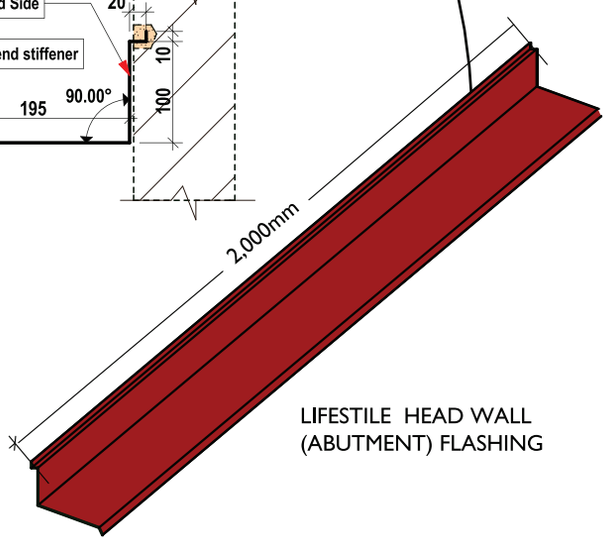






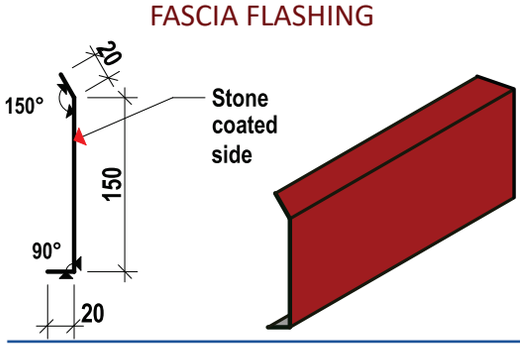
LIFESTILE BARGE FLASHING



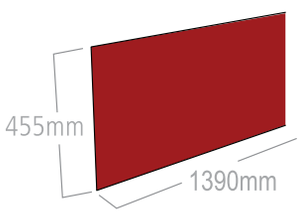


LIFESTILE HEAD WALL (ABUTMENT) FLASHING

FASCIA FLASHING



FLAT SHEET



TOUCH UP KIT

SAFDECK

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- Photographs and illustrations are typical examples of roofing and cladding products and cladding products and applications.

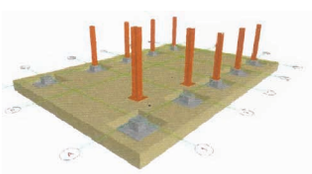
PRODUCT DESCRIPTION & FEATURES

SAFDECK® is MRM's brand of trapezoidal profiled, coated steel structural decking sheets that are used as a structural base layer for Multi- Storey steel Buildings. SAFDECK is fitted on to secondary steel beams using self- drilling screws to form a diaphragm onto which light concrete works are cast. Their structural design and heavy gauge allows for large spans between supports. This fixing helps to brace the building while making significant savings on material costs by reducing the structural steelwork needed and minimizing associated labour costs.

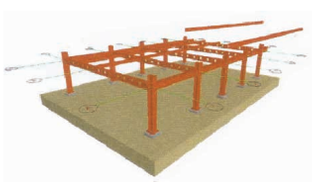
FEATURES AND BENEFITS:

- Faster construction by up to half that of concrete framed buildings
- Longer spans and fewer columns possible with a lighter structure
- Lighter building loads result in reduced foundation costs
- No internal props/ shuttering required during construction
- Shallower beam and slab heights can result in reduced floor to floor heights with same functionality
- Reduced concrete use is more environmental friendly. Steel is also 100% recyclable
- All weather construction possible
- Earlier revenue generation from completed buildings

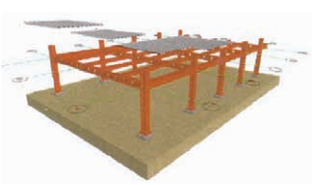
CONSTRUCTION PROCEDURE



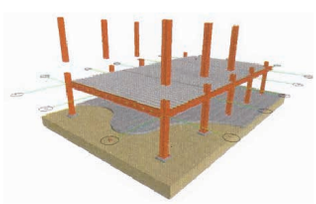
Step 1: Construction of foundation & casting of columns



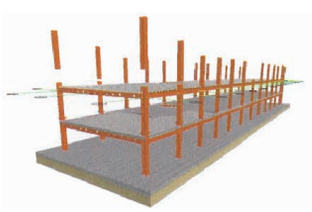
Step 2: Erection of primary & secondary steel beams



Step 3: Fixing of Decking sheets & casting of thin concrete slab

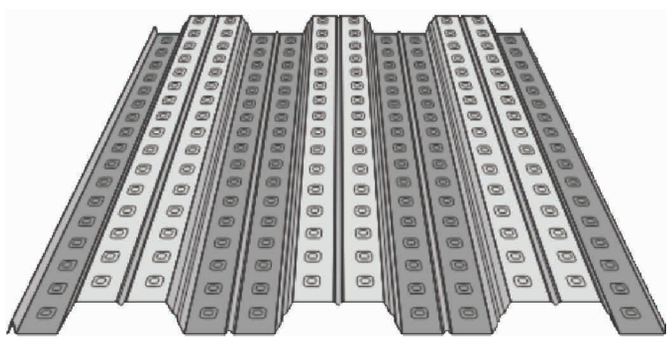


Step 4: Fixing of upper floor columns



Step 5: Repeat steps 1 to 4 for the upper floors & lay concrete on floors below

Step 6: Do all the finishing work



COVERAGE CALCULATOR

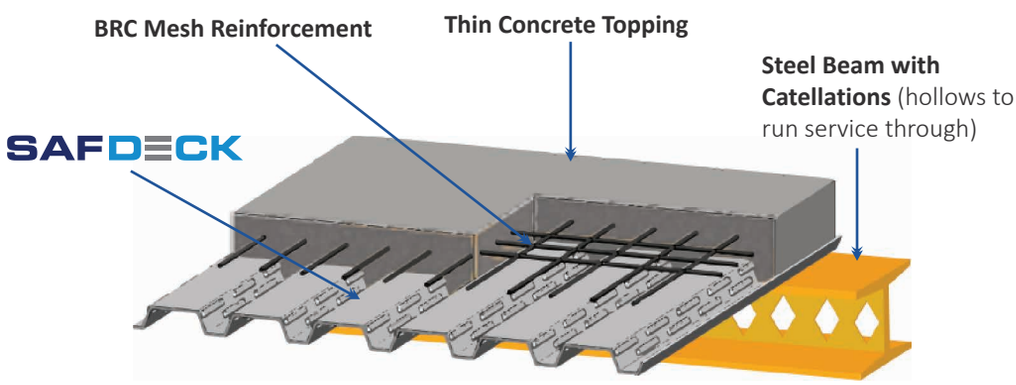
To calculate the number of sheets [N] to cover a given area required, use the formula: N=W/1.00 where; W is the linear width of the roof in metres and N is the number of sheets.

LENGTHS & ROOF PITCH

Slab Thick-ness (mm)	Deck Thick-ness (mm)	MAX unshored Span			Self weight	Comp moment of inertia	Deck-Slab total UDL (KN/M²)										
		Single	Double	Triple													
		(mm)	(mm)	(mm)	KN/M²	106	1,75	1,9	2,05	2,2	2,35	2,5	2,65	2,8	2,9	3,7	3,25
100																	
	0.6	2077	2783	2565	1,88												
	0.7	2184	2184	2697	1,89												
	0.8	2281	3057	2818	1,90	5,509	14	14	14	14	14	14	14	14	14	14	14
120																	
	0.6	1987	2663	2454	2,36												
	0.7	2090	2800	2581	2,37												
	0.8	2183	3926	2696	2,38	8,262	14	14	14	14	14	14	14	14	14	14	14
140																	
	0.6	1910	250	2359	2,85												
	0.7	2009	2692	2482	2,85												
	0.8	2100	2814	2593	2,86	14,128	14	14	14	14	14	14	14	14	14	14	14
150																	
	0.6	1875	2513	2316	3,09												
	0.7	1973	2644	2436	3,10												
	0.8	2061	2762	2546	3,11	16,843	14	14	14	14	14	14	14	14	14	14	14
160																	
	0.6	1844	2471	2277	3,33												
	0.7	1939	2599	2359	3,34												
	0.8	2027	2716	2818	3,35	20,336	14	14	14	14	14	14	14	14	14	14	14
180																	
	0.6	1786	2394	2206	3,81												
	0.7	1879	2519	2321	3,82												
	0.8	1964	2632	2425	3,83	28,743	14	14	14	14	14	14	14	14	14	14	14

NOTES:

- The maximum unshored span is checked for bending under self-weight and construction loads and for deflection under wet concrete to be less than Ls/180.
- The loads in the table have been limited to 14kPa.
- For decks having a thickness less than 0.8mm they have been considered as a form deck for permanent shuttering and not for composite action.



PURLIN SPACINGS

Purlin Spacings are dependent on both downward loading and negative suction loading caused by wind. Your engineer should be consulted to calculate your load [kN/m²] for your particular application.

STEEL SHEETS SUPPORT SYSTEM

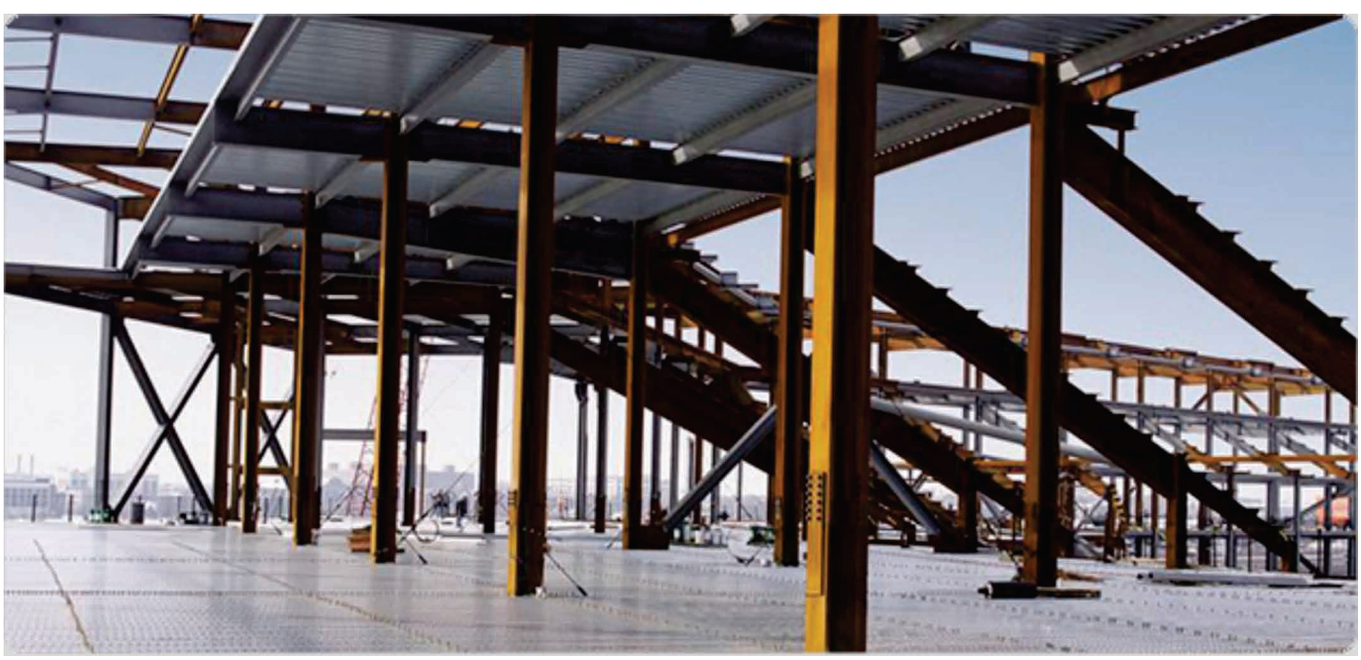
TOTAL COATED THICKNESS [TCT] mm	MAXIMUM PURLIN SPACING IN METRES (m)		
	SIMPLY SUPPORTED (2 SUPPORTS)	CONTINUOUS SUPPORTS (3 SUPPORTS)	CONTINUOUS SUPPORTS (>3 SUPPORTS)
FLOOR DECKING			
0.32	0.8	1.1	1.2
0.40	1.0	1.2	1.4
0.50	1.1	1.4	1.6
0.60	1.3	1.6	1.8

RECOMMENDED END-LAPPING

	SLOPE/PITCH	ENDLAP MIN. mm	ENDLAP MAX. mm
ROOFS	Less than 15°	100	200
	Greater than 15°	N/A	N/A
WALLS			

NOTES:

- These spacings are indicated as a guide for information purposes only. The user should ensure to have a qualified professional work out the precise spacing specifications based on the design considerations unique to the project/site.
- SAFDEK must be specified to bear the significant mass of wet concrete, hence the conservative spanning values recommended compared to sloped roof profiles.



ULTRA-SPAN®
LIGHT GAUGE STEEL TRUSS SYSTEM

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ULTRA-SPAN®

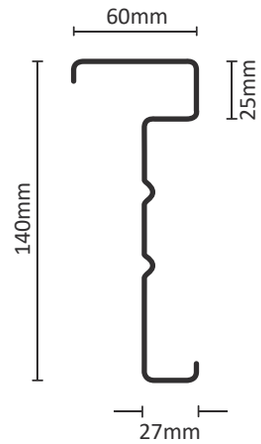
LIGHT GAUGE STEEL TRUSS SYSTEM

OVER
1,000,000 SQM
INSTALLED

A member of the SAFAL GROUP

SAFAL Building Systems Ltd.

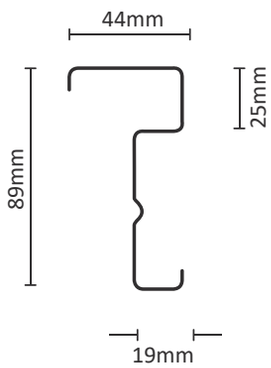
PRODUCT SPECIFICATIONS



CHORDS

USC140 x 1.0, 1.2 or 1.6mm Steel
(Suitable for large spans/girders)

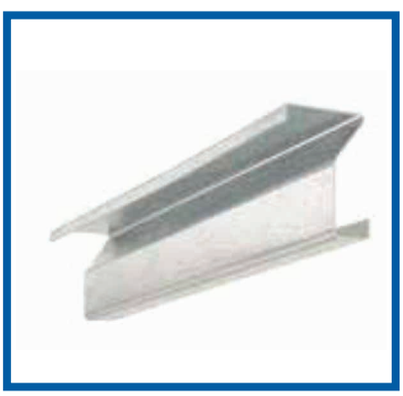
Weight Kg/m
Approx: 2.07, 2.49 & 3.34 Kg/m respectively



CHORDS

USC89 x 1.0 or 1.2mm Steel
89mm in 1.0mm or 1.2mm Steel

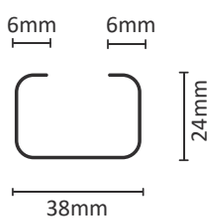
Weight Kg/m
Approx: 1.42, 1.69 Kg/m respectively



CHORDS

USC64 x 0.8 or 1.0mm Steel
64mm Chord in 0.8mm or 1.0mm Steel

Weight Kg/m
Approx: 0.91, 1.13 Kg/m respectively

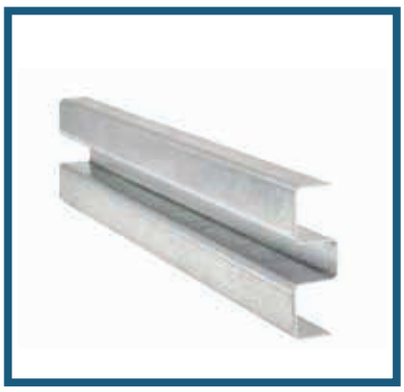


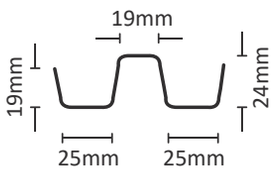
WEBS

USW38 x 0.8 or 1.0mm Steel
38mm Web in 0.8mm or 1.0mm Steel

Weight Kg/m
Approx: 0.56 & 0.70 Kg/m respectively

PRODUCT SPECIFICATIONS

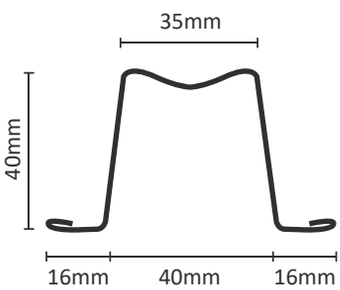




WEBS

USW76 x 0.8, 1.0, 1.2 or 1.6mm
76mm Web in 0.8, 1.0, 1.2 & 1.6mm

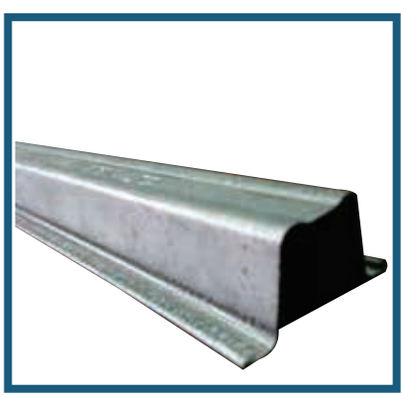
Weight Kg/m
Approx: 0.90, 1.12, 1.35 & 1.8 Kg/m respectively

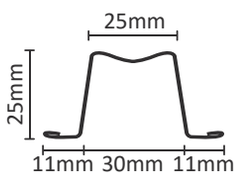


HAT CHANNEL

40 x 0.5mm

Weight Kg/m
Approx: 0.6 Kg/m respectively





BATTEN

25 x 0.5mm

Weight Kg/m
Approx: 0.42 Kg/m

KING POST

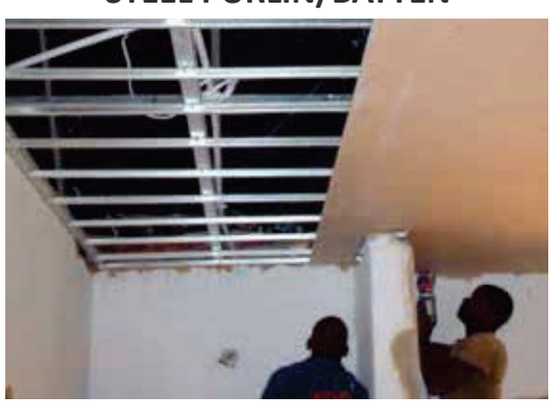
APEX JOINT

BASIC TOOLS REQUIRED FOR FABRICATION.

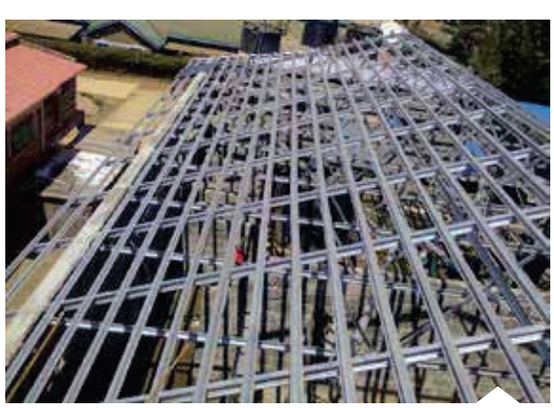
TRUSS TO TRUSS CONNECTIONS

STEEL PURLIN/BATTEN

STEEL PURLINS ON TIMBER ROOF



CEILING BRANDERING OPTIONS



STEEL PURLIN/BATTEN

TYPICAL FACT PROFILE

Optimum design has truss centres suitable for all kinds of roofing like clay tiles, steel tiles, thatched roof, steel profiled sheeting.

Saves Cost

Saves Construction Time

Environmental Friendly

Recyclable

High Accuracy

ULTRA-SPAN®
LIGHT GAUGE STEEL TRUSS SYSTEM

ADVANTAGES

- Durability – lasts for generations to come
- Pre-cut to unique specifications
- Superior and consistent quality
- Fire resistant
- Termite resistant
- Light weight (25% lighter than timber)
- Superior strength
- Increased spanning capabilities
- Increased design capabilities
- Minimal wastage
- Increased construction periods
- Environmentally friendly

ULTRA-SPAN®
LIGHT GAUGE STEEL TRUSS SYSTEM

Application

- Residential, Commercial & industrial buildings
- Warehouses/Godowns
- Churches
- Schools
- Health Centres
- Affordable Houses
- Kiosks
- Sports facilities/Stadiums
- Petrol Stations
- Exibition Centres
- Cargo handling & Storage Complexes
- Shopping Centres/Malls
- Temporary Site offices

Completed Projects

- KPLC Retirement Mass housing projects
- Graceland Construction Ltd
- Kengen Roselyn Mass housing projects
- EPCO brookside
- Mtihani House
- Chuka University
- Projects of Marine Argo
- Leopard Beach Hotel
- Golden Beach Resort
- Kenyatta University
- Ministry of Energy
- Butterfly Properties
- PEFA Church - Dandora
- NHC Mass housing project - Ruai
- St. Patrick Catholic Church - Uthawala
- Redeemed Gospel Church
- God is Able Church - Athi river
- PEFA Church - Kibwesi
- ACK St. James Kiaritha Church
- RAMBA SDA Church, Mfangano Island
- St. Faustin Church
- Orchid Bay Hotel
- Project in East African Countries

Safal Building Systems Ltd.

Old Mombasa Road, P.O. Box 244-00204, Athi River, Nairobi, Kenya.
Cell: +254 786 388 882/6/7, Tell: • +254 (20) 6427000, • +254 (20) 2019169/70 Fax: +254 (20) 6427500/1
Web: www.safalbuildingsystems.com

ACCESSORIES

FIXTITE FASTENERS

Saftherm thermal insulation

VENTILATORS AND LOUVRES

FOAM FILLERS

BUTYL TAPE

ASHGRID
Roof Spacer Support System

CLEARDEK

S-5!® The Right Way
Clamps for all metal roof attachments

FIXTITE
FASTENERS

PRODUCT SET OVERVIEW

TERMINOLOGY

Head Types


HWF - Hex Head with Integrated Washer Flange


HWF - Hex Head with Serrated Integrated Washer Flange


WFRPHD - Wafer No 3 Phillips Drive


WFRSQD - Wafer No 2 Square Drive

Drill Points


T17 - Type 17 Timber


#NP - Needle Point


#RP - Reduced Point


#DF - Duo-Fix Point


#3 - No. 3 Point

Thread Types


TT - Tapered Full Thread Coarse


TT - Tapered Thread Medium


FT - Full Thread Fine


FTH - Harpoon Full Thread Medium


FTW - Full Thread Detachable Wings Coarse


DT - Dual Thread Shank Guard Coarse

Sockets & Bits


5/16 Magnetic Socket


No. 3 Phillips


No. 2 Square Drive

LIGHT STEEL

Applications

	Code	Diameter (mm)	Length (mm)	Effection Thread Length (mm)
	FT3|LS20|HWF|12-14 FT|#3	5,5	20	20
	FT4|LS25|HWF|12-14 DT|#3|EPDM CW	5,5	25	25
	FT4|LS50|HWF|12-14 DT|#3|EPDM CW	5,5	50	35
	FT4|LS65|HWF|12-14 DT|#3|EPDM CW	5,5	65	40
	FT4|LSP75|HWF|12-14 DT|#3|EPDM CW	5,5	75	75
	FT4|LSP22|WFRSQD|12-14| FT|#3	5,5	22	22
	FT4|LS22|WFRPHD|12-14 FT|#3	5,5	22	22

LIGHT GAUGE STEEL TRUSSES

Code	Diameter (mm)	Length (mm)	Effective Thread Length (mm)
FT3|TR16|HWFS|10-16| FTH|#3	4,8	16	16

Code	Diameter (mm)	Length (mm)	Effective Thread Length (mm)
FT3|TR20|HWFS|12-14| FTH|#3	4,8	20	20

Applications
- Single Skin Sheeting
- Built Up Systems

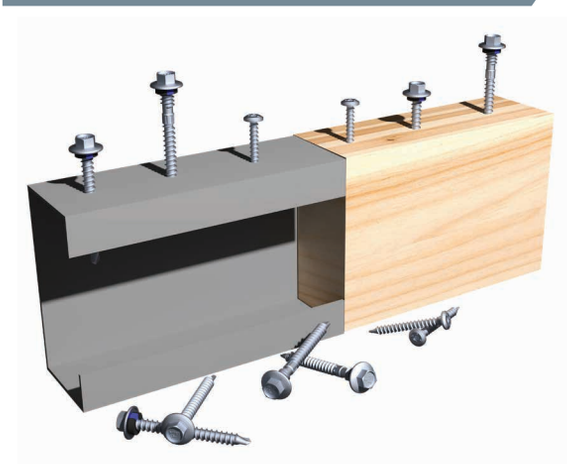
TIMBER FIX

Code	Diameter(mm)	Length(mm)	Effective Thread Length(mm)
FT3|TF70|HWF|129 DT|T17|EPDM-CW	5,5	70	45

Applications

DUO-FIX

Timber or Steel - 1,2-3,2mm



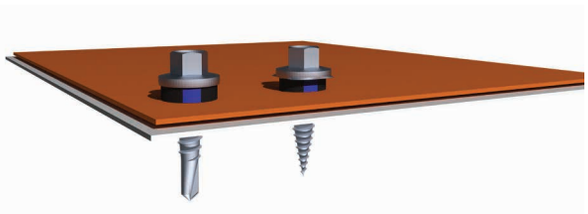
Applications

Code	Diameter(mm)	Length(mm)	Effective Thread Length(mm)
FT3|DF65|HWF|1211 DT #DF|EPDM CW	5,5	65	50

Code	Diameter(mm)	Length(mm)	Effective Thread Length(mm)
FT3|DF55|HWF|1211 FT #DF|EPDM CW	5,5	55	55

Code	Diameter(mm)	Length(mm)	Effective Thread Length(mm)
FT3|DF45|WFRSQD|10-12 FT	4,8	45	45

THIN GAUGE STEEL



Code	Diameter (mm)	Length (mm)	Effective Thread Length (mm)
FT4|ST22|HWF|14-20|TT|#1|EPDW|CW	6,3	22	22

Code	Diameter (mm)	Length (mm)	Effective Thread Length (mm)
FT4|ST22|HWF|14-20|TT|NP|EPDW|CW	6,3	22	22

Applications
- Single Skin Sheeting
- Built Up Systems

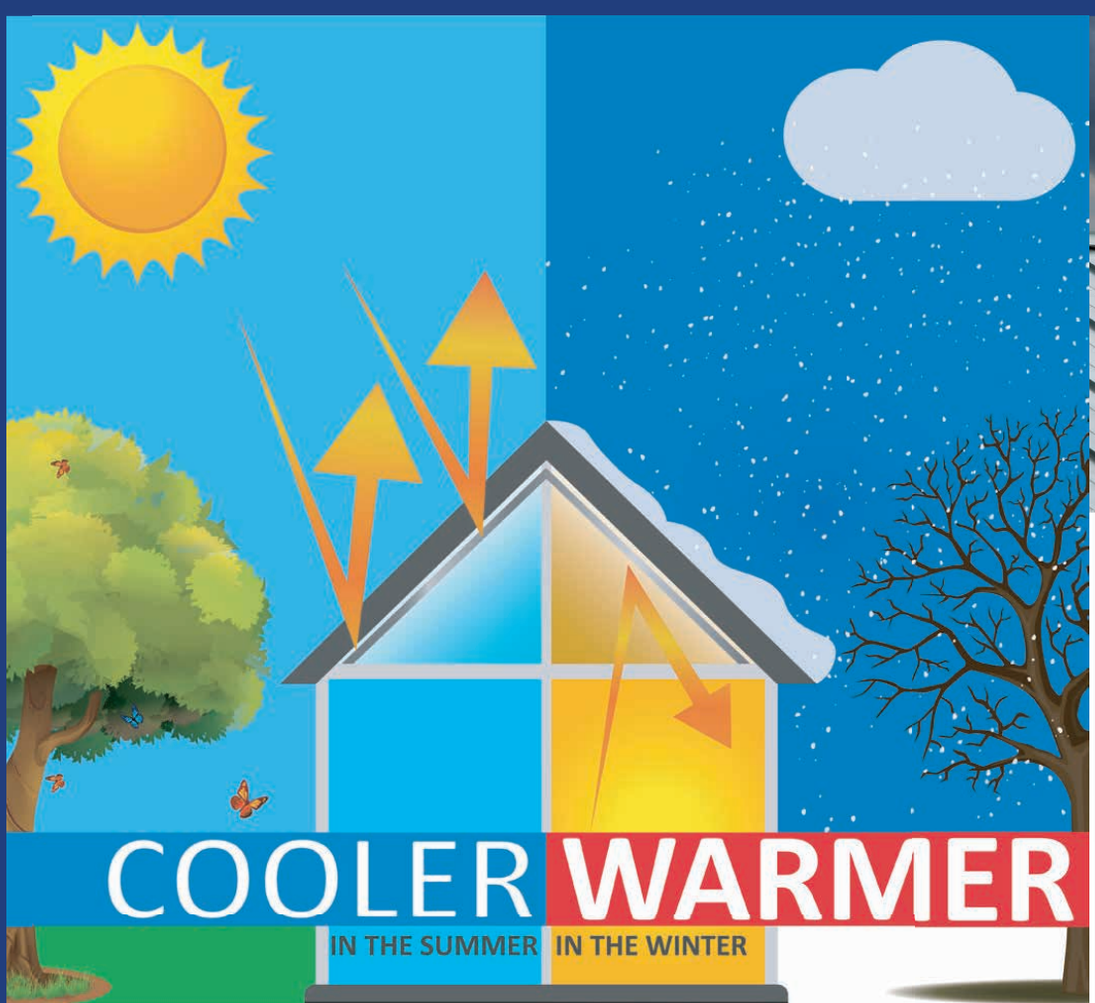
WARRANTY & USAGE GUIDANCE

Corrosion Class	C2	C3	C4	C5-1	C5-M
Evironment Corrosion	Low	Average	High	Very High	Very High
Visual					
Outdoors	Atmospheres with low levels of airborne pollution	Atmospheres with moderate levels of airborne pollution	Atmospheres with high levels of airborne pollution	Atmospheres with high levels of humidity and aggresive atmosphere	Atmospheres with high levels of salt content
	Rural Areas	Coastal areas with low salt levels	Coastal areas with low salt levels	High levels of airborne pollution	Costal with breaking surf and offshore areas
		Urban and Industrial areas	Urban and Industrial areas	Industrial areas	
Indoors	Non-heated areas with fluctuating levels of temprature and humidity	Areas with moderate levels of humidity and considerable airborne pollution from production processes	Areas with high levels of humidity and considerable airborne pollution from production processes	Areas with almost permanent condition and high airborne pollution	Areas with almost permanent condition and high airborne salt
	Sports Halls and Warehouses	Laundries, breweries and dairies	Chemical plants, swimming pools and dockyards		
Steel					
Mass Loss (g/m²)	>10 - 200	>200 - 400	>400 - 650	>650 - 1500	>650 - 1500
Thickness Reduction (um)	>1,3 - 25	>25 - 50	>50 - 80	>80 - 200	>80 - 200
Zinc					
Mass Loss (g/m²)	>0,7 - 5	>5 - 15	>15 - 30	>30 - 60	>30 - 60
Thickness Reduction (um)	>0,1 - 0,7	>0,7 - 2,1	>2,1 - 4,2	>4,2 - 8,4	>4,2 - 8,4
Recommended Fastener Material	Carbon Steel	Carbon Steel	Carbon Steel	Stainless Steel 304 or Carbon Steel Mouled	Stainless Steel 304 or Carbon Steel Mouled
Recommended Fastener Class	Class 2	Class 3	Class 4	Class 5	Class 5
Warranty Period	5 Years	15 Years	20 Years	40 Years	40 Years
				20 Years	20 Years

TERMINOLOGY

Terminology	Example of Code	Definition
Fastener Range	FT	FT = Fixtite
Class	3	3 = Class 3 4 = Class 4
Substrate	TF	TF = Timber LS = Light Steel DF = DuoFix Timber or Light Steel 0,8-3,0mm ST = Thin Gauge Steel 2 x 0,8mm TR = Light Gauge Steel Trusses 0,8-3,0mm
Length(mm)	70	Length (mm)
Head Type	HWF	HWF = Hexagonal Head with Integrated Washer Flange HWFS = Hexagonal Head with Integrated Washer Flange Serrated WFRSQD = Wafer Head Square Drive WFRPHD = Wafer Head Phillips Drive
Gauge	12	Gauge
Threads Per Inch	9	Threads Per Inch
Thread Type	FT	FT = Full Thread DT = Dual Thread FTW = Full Thread with Wings FTH = Full Thread Harpoon TT = Tapered Thread
Drill Point	T17	T17 = Timber #3 = Light Steel 1,2-3,0mm #DF = DuoFix Timber or Light Steel 0,8-3,0mm #RP = Reduced Point Thin Gauge Steel 2 x 0,8mm #NP = Needle Point Thin Gauge Steel 2 x 0,8mm
Washer	EPDM CW	EPDM = Low Carbon EPDM CW = Cut Washer DW = BAS Dome Washer

Saftherm
thermal insulation
RADIANT BARRIER



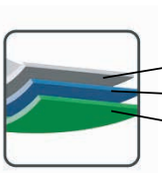
MRM
MABATI ROLLING MILLS

A member of the
SAFAL™ GROUP

PRODUCT RANGE OVERVIEW

SAFTHERM RADIANT BARRIER RESIDENTIAL

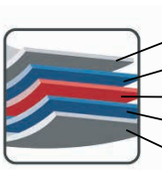
SAFTHERM 201FR



Reflective Aluminium Foil
PE Tie Layer
Woven Fabric

- Non-tear single sided
- Area = 45m2
- Width = 1.25m
- Length = 36m
- R Value range = 1.34-1.49*
- Fire rating = B/B3

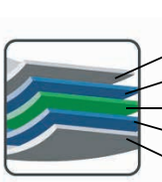
SAFTHERM 202ECO



Reflective MPET
PE Tie Layer
Leno Fabric
PE Tie Layer
Reflective Aluminium Foil

- Non-tear double sided
- Area = 45m2
- Width = 1.25m
- Length = 36m
- R Value range = 1.36-1.49*
- Fire rating = B/B1

SAFTHERM 202FR

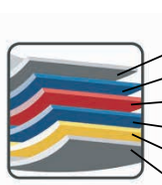


Reflective Aluminium Foil
PE Tie Layer
Woven Fabric
PE Tie Layer
Reflective Aluminium Foil

- Non-tear double sided
- Area = 50m2
- Width = 1.25m
- Length = 40m
- R Value range = 1.41-1.86*
- Fire rating = B/B1

SAFTHERM RADIANT BARRIER COMMERCIAL/INDUSTRIAL

SAFTHERM 203ECO



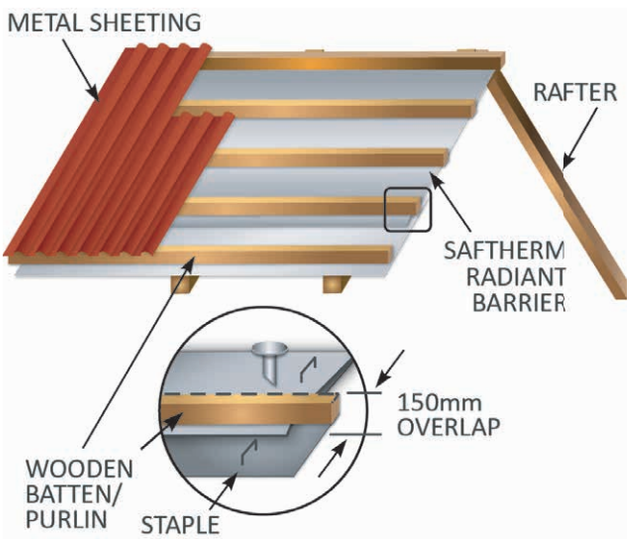
Reflective Aluminium Foil
PE Tie Layer
Paper
PE Tie Layer
Reinforcement
Reflective Aluminium Foil

- Rigid double sided
- Area = 50m2
- Width = 1.25m
- Length = 40m
- R Value range = 2.31-2.42*
- Fire rating = B/B1/2/H only SP

- For more information contact: marketing.mrmroofing@safalgroup.com -

*please contact us should you require further information on the R Value test methods.

RESIDENTIAL INSTALLATION METHOD



1. Saftherm Radiant Barrier must be unrolled horizontally across the rafters with the printed aluminium side facing up.

2. Saftherm Radiant Barrier must be overlapped by 150mm at all joints.Overlap guideline markings are printed onto the rolls for ease of use.

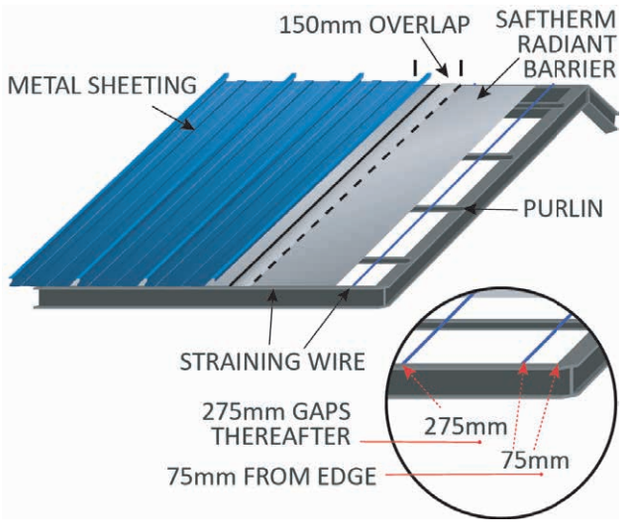
3. To ensure maximum performance, an air-gap is required between the Saftherm Radiant Barrier and the roof sheeting.

4. Saftherm Radiant Barrier must be fixed between the rafters and the battens.

5. It is suggested that Saftherm Radiant Barrier be pulled hand-taut across the rafters. Do not excessively stretch the material.

6. Saftherm Radiant Barrier should not be left exposed to sunlight or wind for long periods of time.

INDUSTRIAL / COMMERCIAL INSTALLATION



1. Straining wire to be installed above the purlins and evenly tensioned. The initial straining wire is to be spaced 75mm away from the gable end, with subsequent spacing at 275mm or 367mm spacings.

2. Saftherm Radiant Barrier must be installed with the printed side facing up.

3. To ensure maximum performance, an air-gap is required between the Saftherm Radiant Barrier and the roof sheeting.

4. Saftherm Radiant Barrier must be overlapped by 150mm at all joints. Overlap Guideline markings are printed onto the rolls for ease of use.

5. It is suggested that Saftherm Radiant Barrier be pulled hand-taut across the rafters. Do not excessively stretch the material.

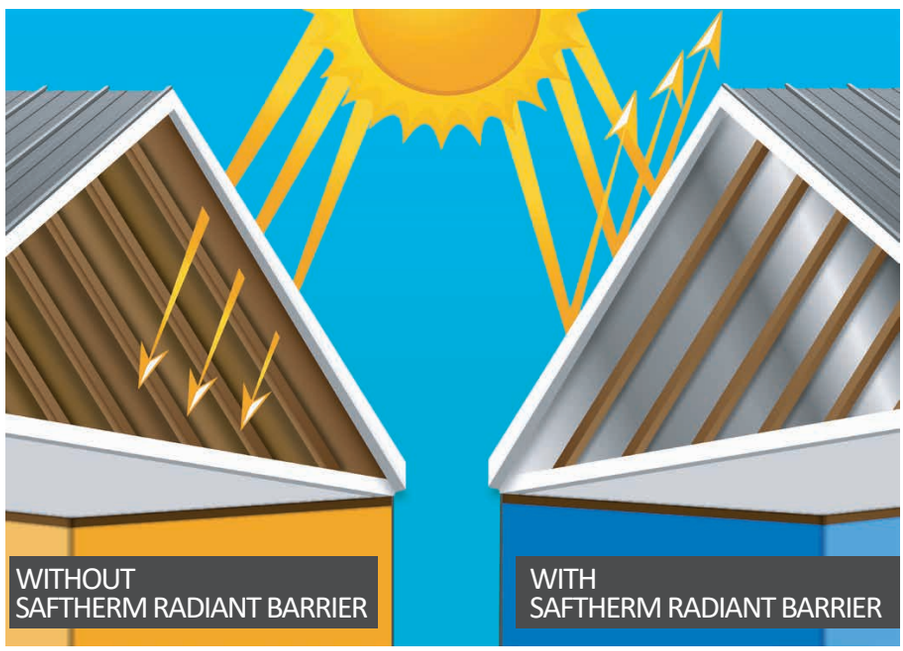
6. Saftherm Radiant Barrier should not be left exposed to sunlight or wind for long periods of me.

WHAT IS SAFTHERM RADIANT BARRIER?

Saftherm Radiant Barrier is your first line of defense against radiant heat and is made from high quality aluminum membranes. This reflective foil insulation material provides effective insulation properties adding indoor comfort against heat, cold, dust, moisture and reduces energy consumption.

HOW DOES SAFTHERM RADIANT BARRIER WORK?

Saftherm Radiant Barrier prevents heat transfer between indoor and outdoor tempratures, keeping it cool in the summer and cosy in the winter.



WHY SHOULD I INSTALL SAFTHERM RADIANT BARRIER?

Fire rating is **SANS 428 compliant**

Radiant Barrier offers **SUPERIOR TEMPERATURE CONTROL**

ADDED BENEFITS

Energy Efficient: Allows for reduced energy consumption.

Vapour Barrier: Prevents moisture from entering the building.

Thermal Resistance: Effectively re ects up to 97% of Radiant heat.

Dustproofs: Reduces dust entering the roof space.

Economical: Maintenance free and prolonged longevity.

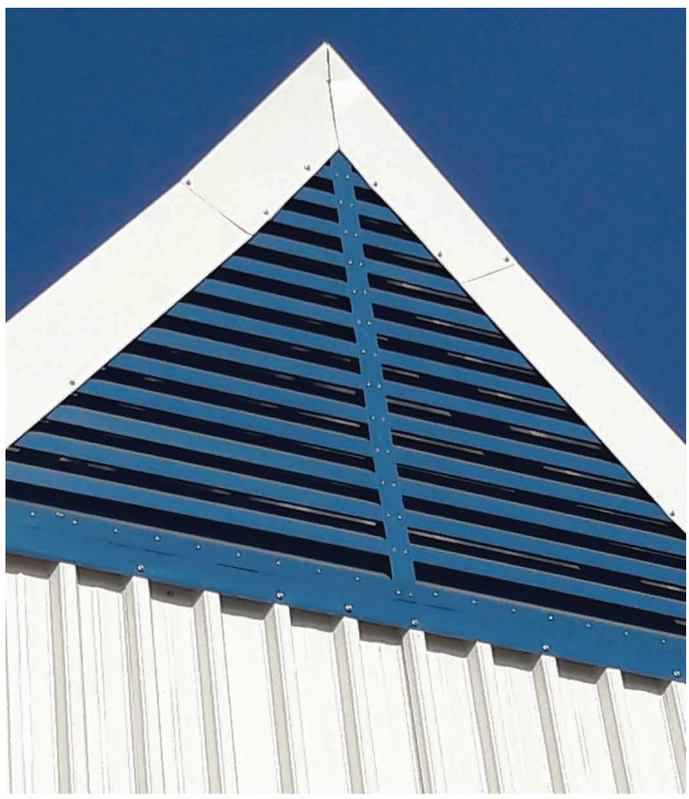
Environmentally-friendly: Allows for reduced energy demand inside building.

VENTILATORS AND LOUVRES
FOR INDUSTRIAL & ARCHITECTURAL APPLICATIONS

PRODUCT DESCRIPTION

Mabati Rolling Mills offers a range of locally manufactured architectural and industrial louvres as well as air vents for a variety of air intake or exhaust applications.

All Vents and Louvres are manufactured from Aluminium-Zinc coated steel or Aluminium, to match the roofing material used, providing maximum corrosion resistance and aesthetic appeal.



THE IMPORTANCE OF VENTILATION

Ventilation is important as it regulates the exchange of air to the outside as well as circulation of air within the building. Ventilators evacuate stale air from within a building, replacing it with cool fresh air from fixed louvres and other openings at low level.

Good building ventilation will also assist in maintaining indoor air quality in buildings by limiting the concentration of carbon dioxide and airborne pollutants such as dust, smoke and volatile organic compounds (VOCs).

Natural ventilation refers to the process of supplying and removing air to and from indoor spaces by deliberate natural ventilation strategies, as opposed to mechanical ventilation.

Ventilation Recommendations

- Natural ventilation through the exterior wall in the form of openable doors and windows (including Louvre's and Ventilators) of which the aggregate area is at least 5% of the floor area.
- Natural ventilation through the roof, such as ventilators, of which the aggregate area is at least 2% of the floor area.
- Mechanical smoke ventilation or roof ventilators of which the aggregate area is between 3% and 5% of the floor area.

Mabati Rolling Mills Ventilators & Louvres

Mabati Rolling Mills manufactures bespoke ventilators and louvres for natural ventilation. They are not mechanical, and require no power.

Features & Benefits

- Available in a variety of colours to complement architectural features
- Wide range of fixed louvre shapes available
- Various dimensions of ridge & slope mounted ventilators
- Manufactured from Aluminium-Zinc coated steel or Aluminium, to match the roofing material used & ensure aesthetic appeal.
- No operating costs

TECHNICAL SERVICES & SUPPORT

Mabati Rolling Mills offer full technical support and advice from project design to installation. It is strongly recommended that an approved installation company is appointed to install any roofing system or component thereof. This includes sheeting, louvres and ventilators.

MAINTENANCE AND CARE INSTRUCTIONS

Fasteners & Accessories

- All fasteners should have rubber sealing washers which should be free of carbon fillers.
- Fasteners should be as durable as the roof sheeting. We recommend the use of Fixtite® fasteners or Mabati Rolling Mills approved fasteners for the appropriate metal sheeting.

VENTILATORS AND LOUVRES
FOR INDUSTRIAL & ARCHITECTURAL APPLICATIONS

COLOUR AVAILABILITY

Colours available as per standard colour options provided by MRM. Bespoke colours available on request.

***Images & colours represented may vary from actual product.**

Sky Blue | Tile Red | Dark Green | Brick Red | Maroon | Charcoal

MABATI ROLLING MILLS FIXED LOUVRES (MRMFL)

The Mabati Rolling Mills range of fixed louvre systems are designed to complement any metal cladding profile and are ideal for use in commercial applications both for practicality as well as architectural aesthetics.

SAMPLE SPECIFICATION

Mabati Rolling Mills branded MRMFL4 fixed Louvres in AZ 150/200 in Square/Rectangular/Round/Triangular (in height x width (mm), in Zincal®/Colorplus® (specify colour), mounted in a metal surround frame, into cladding /masonry, flashed according to manufacturer's recommendations.



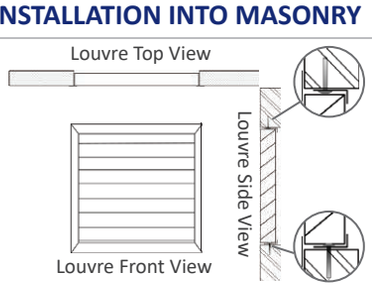
FIXED LOUVRE MODEL STANDARD DIMENSIONS

	MRMFL3	MRMFL4	MRMFL5	MRMFL6	MRMFL7	MRMFL8	MRMFL9	MRMFL10
Overall Height A (mm)	300	400	500	600	700	800	900	1 000
Overall Width STD B (mm/m)	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000
Overall Depth STD (mm)	100	100	100	100	100	100	100	100
Free Measured Throat Area (m^2/m)	0.156	0.234	0.312	0.390	0.468	0.546	0.624	0.702
Zincal®/Colorplus® Steel Mass (kg/m)	4.03	4.97	5.91	6.85	7.79	8.73	9.67	10.61
No. of Blades	3	4	5	6	7	8	9	10

Note 1
Louvres can be made in customized sized as required. It must further be noted that the aggregate throat area may be affected.

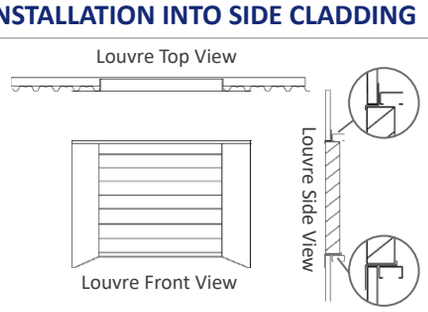
$$\text{*Number of vents required} = \frac{\text{SFL = Mabati Rolling Mills Fixed Louvres Ventilation required } (m^2)}{\text{free measured throat area } (m^2)}$$

LOUVRES INSTALLATION INTO MASONRY



Note 1
Louvres installation details are for illustrative purposes only. Every installation should be treated as project specific and flashing accordingly.

LOUVRES INSTALLATION INTO SIDE CLADDING



FOAM FILLERS

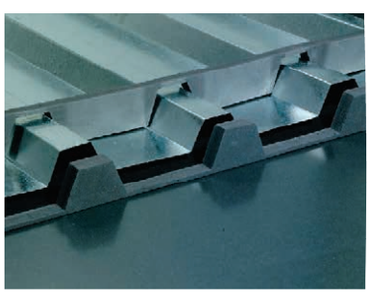
Eaves and ridge fillers made from cross-linked, closed cell, expanded Polyethylene

APPLICATION

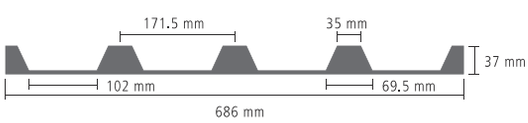
- Prevents dust, draughts and birds from nesting in eaves and ridges.

ADVANTAGES

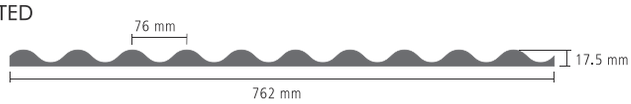
- Waterproof, weather and UV resistant.
- Dust proof and extremely durable.
- Easy to install and available in both broad and narrow flutes in a wide variety to fit all standard profiles.
- Polyclosures are resilient and fit snugly into all types of roofing profiles.



IBR

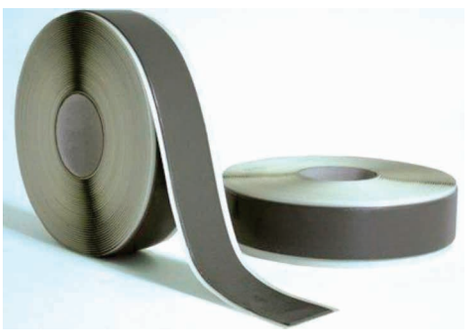


CORRUGATED



BUTYL TAPE

SPECIALLY FORMULATED FOR USE ON METAL ROOF & WALL PANELS



BUTYL TAPE was designed specifically for the metal building industrial to provide optical sealing in the harshest enviroments.

It adheres to most clean, dry metal surfaces and does not harden, blled or stain. With pressure, it fills minor irregularities in the surface and seals the joints providing an effective barrier against water, moisture, dust and dirt.

BENEFITS OF BUTYL TAPE

- Butyl tape increases the structural strength of the roof by more than 40%.
- Prevents chemical reaction when two galvanised sheets contact each other.
- Bonds the sheets together and lessons the risk of wind damage and leakage.
- Will not crack or lose adhesion under expansion and contraction.
- Excellent anti-vibration properties.
- Seals against moisture and rust.
- Has effective life of over 20 years.
- Oxidation, Chemical and age resistant.
- Will not degrade under UV.
- Heat resistant up to 160°C
- Non Toxic and non Hazardous.

SURFACE PREPARATION

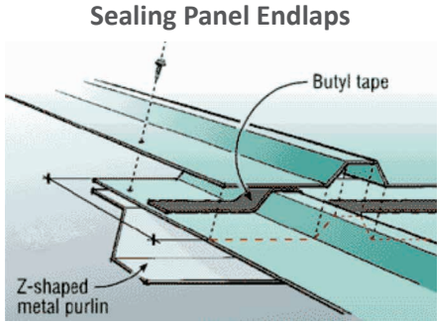
BUTYL TAPE is compatible with most building materials, metals and flexible or hard plastics.
The surface should be clean, dry, smooth and dust free. No special tools are required to install this tape.

INSTALLATION

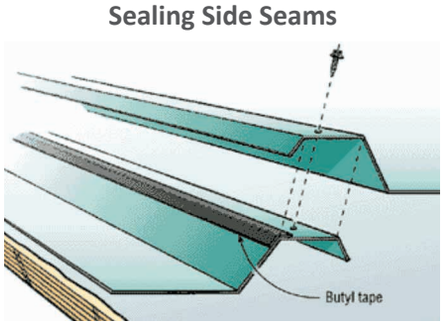
Prepare the surface and proceed as follows:

- Choose the most suitable size of roofing tape
- Unroll the tape until the desired length is reached
- Remove the silicone release film that covers the adhesive part of the tape and position the tape.
- Press with roller or a cloth pad

Sealing Panel Endlaps



Sealing Side Seams



INTRODUCTION TO ASHGRID®

All spacer support systems are at risk during the installation stage when they are not restrained by the sheeting and are subjected to forces from foot traffic, temporary loading and high winds.

Accurate, close fitting and reliable bar connections are also required to ensure the stability of any spacer support system during construction with some systems even having to rely upon screw fixing to prevent their bars from separating**.

The Ashgrid Safe loc™ spacer support system addresses these issues through a combination of innovative design features which improve systems stability, safety and ease of construction, reducing installation time and costs when compared with other spacer support systems.

- The Ashgrid system can accommodate any depth of insulation required by Legisation.
- Safe-Loc™ spigots - fast, secure and safe bar koints
- No need for bar end fixing - saving time and cost
- Raises the standards for spacer support systems
- Maximum spigot efficiency is always achieved and a consistent module maintained
- Allows continuous load transfer throughout the bar run
- High performance brackets with deeper ribs for improved structural performance
- Brackets include an EPDM base pad to elliminate thermal breaks
- No requirements for anti-sway brackets below 250mm* construction depth
- Quick, easy and safe insertion of brackets from the side or from the bar ends
- Brackets can be easily repositioned if required
- Deep ribbed bar, ensuring optimum fixing efficiency for the top sheet
- High fixing torque and increased pull-out strengths achieved
- Comprehensiv and friendly technical backup with nationwide distribution
- Product manufactured to BS EN ISO 9001:2000

**In line forces can be transmitted through the joint without the need for screw fasteners.
*For exceptional site loading conditions and for hights above 250mm advice on performance should be sought from the Ashgrid SA Technical Department.

CLEARDEK

Corrugated Profiled Polycarbonate Sheeting

MRM
MABATI ROLLING MILLS

A member of the
SAFAL™ GROUP

Corrugated Profiled Polycarbonate Sheeting

CLEARDEK® Corrugated UV Co-extruded profiled polycarbonate sheets have been engineered to suit roof lighting and daylight cladding applications for a wide array of specific needs. These include Industries, warehouses, commercial structures and also residences. Sunlight is abundantly available during the day time and CLEARDEK sheets help you to conveniently harness this boundless resource resulting in a reduction of energy use. CLEARDEK Corrugated UV Sheets provide excellent impact resistance, a very wide range of light transmission options and enhanced safety due to excellent fire resistant (self extinguising) properties. A co-extruded UV protective layer ensures that the sheets have superior resistance to weathering and the mechanical & optical properties of the sheets remain intact for an extended period of time.

CLEARDEK Corrugated UV Sheets are 250 times stronger than glass, suitable for extreme weather conditions and can be deployed for use in hostile chemical environments. CLEARDEK sheets are corrosion resistant and offer near total protection from harmful ultraviolet radiation of the sun.

Fire Retardent (Self Extinguishing)
CLEARDEK Corrugated UV sheets have an excellent flammability rating (UL94 V-2), are self extinguishing and suitable for use in areas prone to fire. These sheets do not release toxic gases and are comparatively much less flammable than GRP & Acrylic (PMMA) sheets.

Excellent Impact Resistance
CLEARDEK Corrugated UV sheets possess exceptional impact resistance. Manufactured from high quality Bayer® polycarbonate resin, which has 250 times the impact strength of glass and up to 40 times that of Acrylic (PMMA) sheets of similar thicknesses. TUFLITE Corrugated UV sheets are virtually unbreakable.

Superior Clarity & Light Transmission
Clear CLEARDEK Corrugated UV sheets are as transparent as glass and has a light transmission of 90%. These sheets are also available in translucent configurations for better light diffusion.

Weather Protected
CLEARDEK Corrugated UV Co-extrded sheets possess a special ultraviolet barrier, which cuts of 99.9% of the sun's harmful ultraviolet radiation. This protection ensures zero damage to UV sensitive products like furnishings and upholstery, paint, carpets and also prevents harm to the human skin. Further, this UV layer is co-extruded and hence cannot peel or delaminate from the sheet, ensuring long term durability and sustained weather protection.

Design Flexibility
CLEARDEK Corrugated UV sheets can be cold curved in both directions. That is parallel or perpendicular to the line of corrugation. This offers design flexibility to install these sheets over curved roofs or walls (Radius of curvature wil be defined by the profile and thickness of sheet to be used).

Broad Range Temperature Resistance
CLEARDEK Corrugated UV sheets remain stable under extreme climatic conditions, remaining virtually unchanged between temperatures of 40°C and +120°C. This signifies that the sheets can perform below freezing to be made for thermal movement in the fixing arrangement.

Better Heat / Thermal Insulation
CLEARDEK Corrugated UV sheets exhibit better insulation values against heat or cold when compared to glass or GFRP sheets.

Handling With Ease
Due to their relatively light weight and high impact strength, CLEARDEK Corrugated UV sheets are convenient to store, handle and install. Conventional tools can be used to cut, trim or drill holes in the sheets.

Chemical Resistance
CLEARDEK Corrugated UV sheets are resistant to a wide range of chemicals. They are generally unaffected by acids, alcohols, glycols, minerals oils, animal and vegetable fats, kerosene and non-abrasive cleaners. However, they are effected by benzene, petrol, ketones, acetones, phenols, Chlorinated and aromatic hydrocarbons, petroleum based paints, abrasive cleaners and solvents. For more information contact MRM for a data sheet.

Simple Maintenance
Clean using a mild detergent and warm water. Use a soft sponge. Rinse thoroughly with clean water.

Product Range

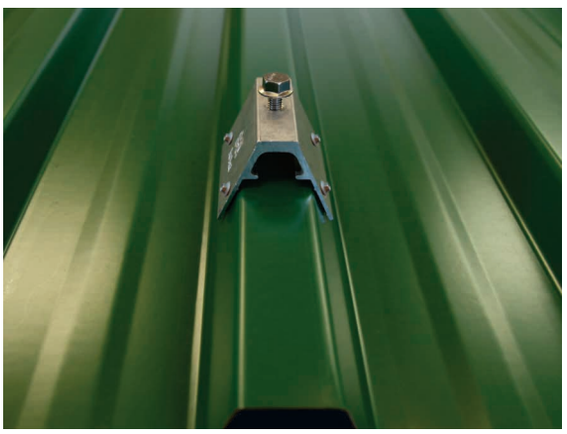
Product: CLEARDEK® (UV1)
Description: Corrugated Polycarbonate sheet with one side UV Coating

Product: CLEARDEK® Plus (UV2)
Description: Corrugated Polycarbonate sheet with both sides UV Coating

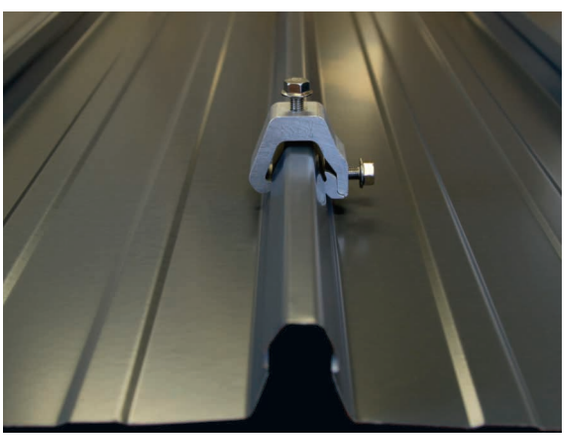
MRM
MABATI ROLLING MILLS

MAKING ROOFS WORK SMARTER

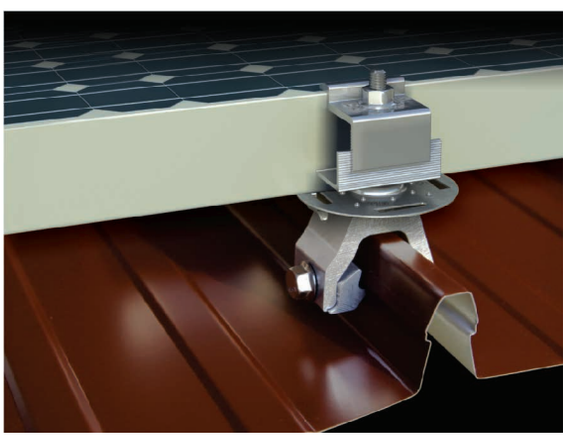
S-5 CorruBracket™ for corrugated profiles



S-5 TrapBracket™ for trapezoidal profiles



S-5 K Grip™ for Saflok and similar concealed fix systems



S-5 PV Kit™ for solar module attachment

S-5!® is the right way to attach almost anything to metal roofs:

- Non-penetrating clamps for concealed fix systems preserves sheeting warranties
- Profile-specific attachment brackets for all pierced fix sheets
- Engineered for attachment of PV panels, walkways, HVAC, safety rails, signage and more

S-5 clamps offer:

- High tensile aluminium and non-ferrous stainless steel hardware
- Material compatibility with aluminium-zinc coated steel
- 25-year manufacturer's warranty on all product components
- Unequalled holding strength, average load-to-failure of 1000kg

S 5!®

A member of the SAFAL GROUP

S-5!®

The right way to attach almost anything to metal roofs.

CLAMPS

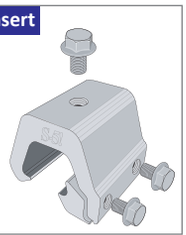
S-5 K Grip™ Standard with S-5 700 Standard Insert

For Saflok 700 profile

COMPONENTS:

1x S-5 K Grip Standard size
1x S-5 700 standard insert
1x M10 1.5 x 16mm hex flange bolt
2x M8 1.25 x 16mm hex flange bolts

CODE: CLAMP - FN0297



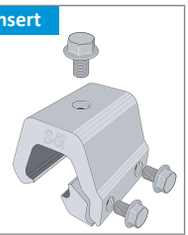
S-5 K Grip™ Standard with S-5 410 Standard Insert

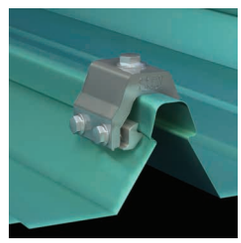
For Saflok 410 profile

COMPONENTS:

1x S-5 K Grip Standard size
1x S-5 410 standard insert
1x M10 1.5 x 16mm hex flange bolt
2x M8 1.25 x 16mm hex flange bolts

CODE: CLAMP - FN0298





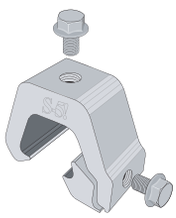
S-5 K Grip™ Mini with S-5 700 Mini Insert

For Saflok 700 profile

COMPONENTS:

1x S-5 K Grip Mini size
1x S-5 700 Mini insert
2x M8 1.25 x 16mm hex flange bolts

CODE: CLAMP - FN0299



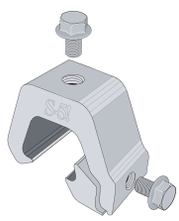
S-5 K Grip™ Mini with S-5 410 Mini Insert

For Saflok 410 profile

COMPONENTS:

1x S-5 K Grip Mini size
1x S-5 410 Mini insert
2x M8 1.25 x 16mm hex flange bolts

CODE: CLAMP - FN0300



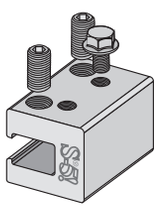
S-5 H90™ Standard

For Newlok profile

COMPONENTS:

1x S-5 H90 Bracket
1x M8 1.25 x 16mm hex flange bolt
2x 1 3/8 (one and three eighths)-24 x 0.8" round point setscrew

CODE: CLAMP - FN0299



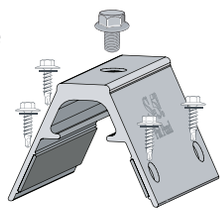
S-5 Trap Bracket™

For Maxcover, Covermax & Tekdek profile

COMPONENTS:

1x S-5 Trap Bracket
1x M8 1.25 x 16mm hex flange bolt
4x Hex head 14 x 22mm stitching screws with EPDM seal

CODE: CLAMP - FN0304



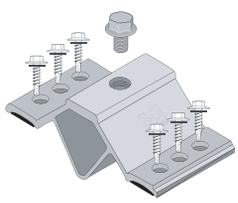
S-5 CorruBracket™ Standard

For Classicorr profile

COMPONENTS:

1x S-5 CorruBracket standard Clamp
1x M8 1.25 x 16mm hex flange bolt
6x Hex head 14 x 22mm stitching screws with EPDM seal

CODE: FN0311



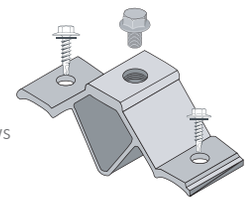
S-5 CorruBracket™ Mini

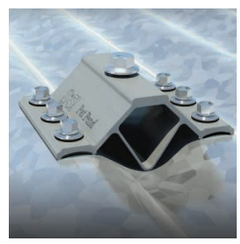
For Classicorr profile

COMPONENTS:

1x S-5 CorruBracket mini Clamp
1x M8 1.25 x 16mm hex flange bolt
6x Hex head 14 x 22mm stitching screws with EPDM seal

CODE: FN0303





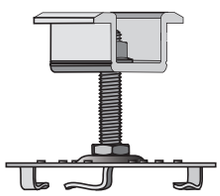
S-5 PV Kit™ with Mid-Grab

For Classicorr profile

COMPONENTS:

1x Stainless steel mounting disc
1x M8 Stud with integral hex nut
1x M8 flanged top nut
1x Mid Grab component

CODE: FN0306



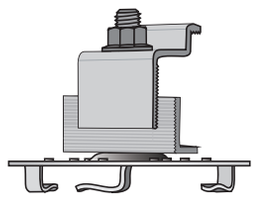
S-5 PV Kit™ with Edge-Grab

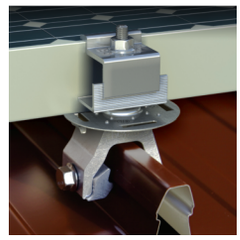
For solar profile

COMPONENTS:

1x Stainless steel mounting disc
1x M8 Stud with integral hex nut
1x M8 flanged top nut
1x Edge Grab component (2 pieces)

CODE: FN0307

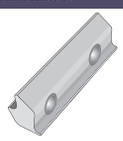




LOOSE COMPONENTS

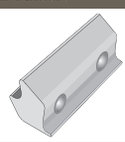
K-Grip 700 Standard Insert

CODE: FN0310



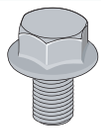
K-Grip 410 Standard Insert

CODE: FN0309



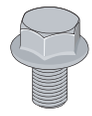
M10 1.5 x 16mm Hex Flange Bolt

CODE: FN0315



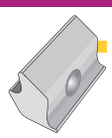
M8 1.25 x 16mm Hex Flange Bolt

CODE: FN0316



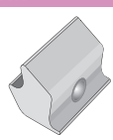
K-Grip 700 Mini Insert

CODE: FN0302



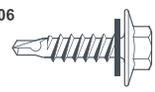
K-Grip 410 Mini Insert

CODE: FN0301



Hex head 14 x 22mm stitching screw with EPDM seal & harpoon thread

CODE: FN0406



Sole Agents for Kenya

MRM
MABATI ROLLING MILLS

PRODUCT DESCRIPTION

The **S-5-K Grip™ Clamp** was specifically developed to fit Saflok® and similar bulb snap-together seams. The design utilizes multiple inserts used for a variety of bulb snap-together profiles. Each insert has a unique shape that allows for a tight fit and provides increased holding strength for that profile.

The head of the flanged bolts control the amount of compression, which reduces the possibility of over-compressing the seam.

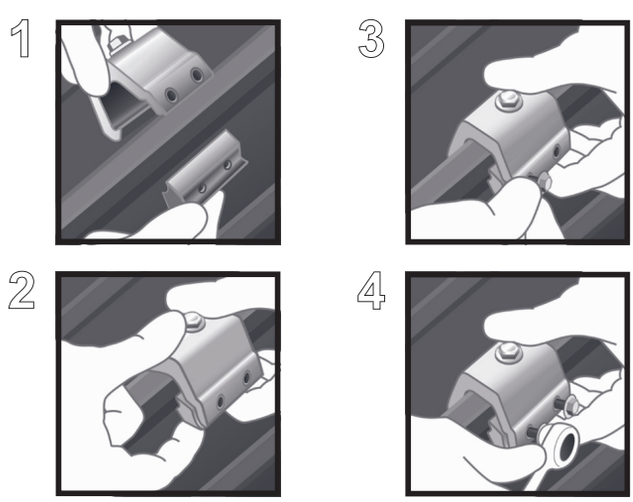
Just place the clamp on the seam, position the insert piece, and tighten the flanged bolts at the base. Then, affix ancillary items using the top bolt provided. Go to: www.S-5.com/tools for information about properly attaching S-5!® clamps.

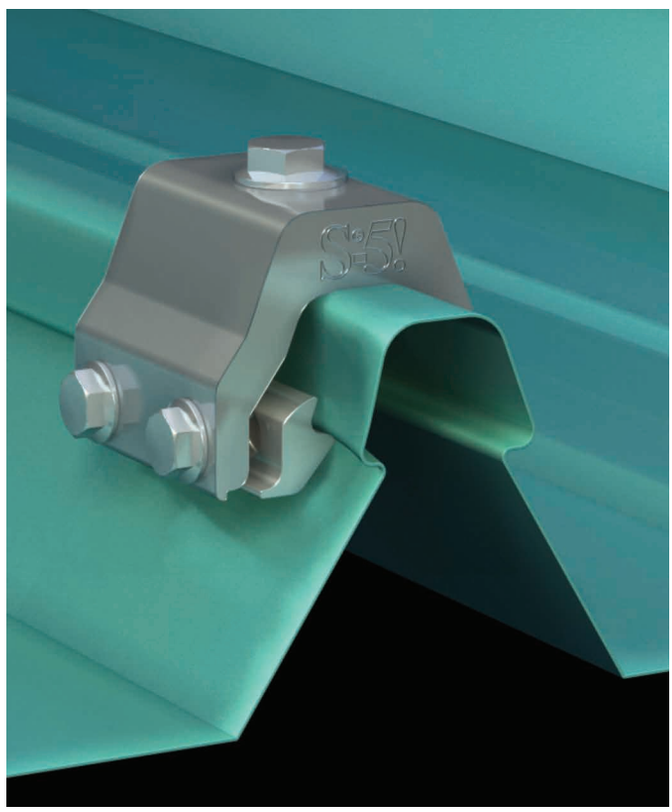
S-5-K Grip™ Mini Clamp
The S-5-K Grip Mini is a bit shorter than the S-5-K Grip and has one base bolt rather than two. The mini is the choice for attaching all kinds of rooftop accessories: solar arrays, signs, walkways, satellite dishes, antennas, rooftop lighting, lightning protection systems, exhaust stack bracing, conduit, condensate lines, mechanical equipment—just about anything!

S-5-K Grip™ is a non-piercing clamp. It was specifically developed to fit Saflok® and similar bulb snap-together seams, and will not void warranties on MRM concealed-fix roofing.

S-5! PV kits have an M8 bolt and are suitable for use with all S-5! clamps.

INSTALLATION





FEATURES

The S-5-K Grip and S-5-K Grip Mini clamps are each furnished with the hardware shown overleaf. A structural aluminum attachment clamp, the S-5-K Grip is compatible with most common metal roofing materials excluding copper. All included hardware is stainless steel.

S-5!® holding strength is unmatched in the industry.
The S-5-K Grip eliminates the large moment arm and features a low mounting surface area with the mounting bolt directly over the centre of the seam, which dramatically increases the strength of the clamp.

The S-5-K Grip clamp has been tested for load-to- failure results on a variety of standing seam roof profiles from leading panel manufacturers. For design assistance, contact Mabati Rolling Mills (and see our website **www.mabati.com**), or visit **www.S-5.com** for the independent lab test data that can be used for load-critical designs and applications. Also, please visit S-5! website for more information including metallurgical compatibilities and specifications.

MABATI ROLLING MILLS CSR

Over many years Mabati Rolling Mills Limited (MRM) has developed a systematic and structured approach to Corporate Social Investments (CSI) which is based on our core values. We prefer to use the term 'investment' as opposed to 'responsibility' as we firmly believe poverty alleviation and socio-economic development in our communities can only be achieved through a sustained approach.

Our CSI strategy encompasses the company's impact and interaction with society in three distinct areas; the company's own operations; the company's relationships with its business partners through the value chain and the voluntary or philanthropic contributions it makes to the communities within which we operate. CSI for us and the Safal Group is a core business pillar.

Our focus areas are: **Shelter, Education, Health & the Environment.**

SHELTER

We believe our Communities are our Homes and in partnering with our communities, we have a structured approach to shelter, encompassing re-roofing many projects annually (projects are put through a pre-determined qualification process and 'hand held' to completion). We are in the roofing business and therefore sheltering the less fortunate members of our society is of prime concern to us.

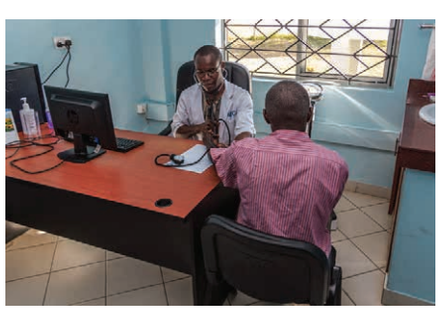
It is an ongoing activity for us. Some of the significant projects we have worked on are:
a) Immediately after the post election violence in 2007 we collaborated with Kenya Red Cross society in building 120 low cost houses for the internally displaced people in Naivasha, Kenya.

b) We built two primary schools, the Mutate Primary School, Elburgon and Sasumua Primary School in Kuresoi-Molo Sub-county which had been burnt to the ground.
c) Every year we make substantial DumuZas sheet donations to various institutions who make requests to us. We have donated DumuZas to those who lost their houses in a fire in Kibera and to 8 schools in the Kilifi county that were in dire need so that the students may have a
conducive environment to study by having a roof over their head. These are just a few of the projects we have worked on ....

HEALTH

We also have a carefully structured approach to Health as exhibited by our Mabati Medical Centre at Mariakani which treats close to 40 000 patients per annum in a full service facility including the latest technology diagnostics centre. Here we provide affordable quality primary health care to the less fortunate members of our society. Good health helps to improve one's quality of life. This is especially true of Mother-Child care where we focus to help reduce the high infant mortality rates in the area. We want to join our 1st lady here in Kenya in reducing maternal and child mortality which are high compared to the global standards.

Each year a Free Mega Medical Camp is organized in collaboration with Lions Club of Mombasa Pwani, offering services from family planning advice, to dental and eye care treatment, and simple operations such as cataract removal are carried out at no cost.



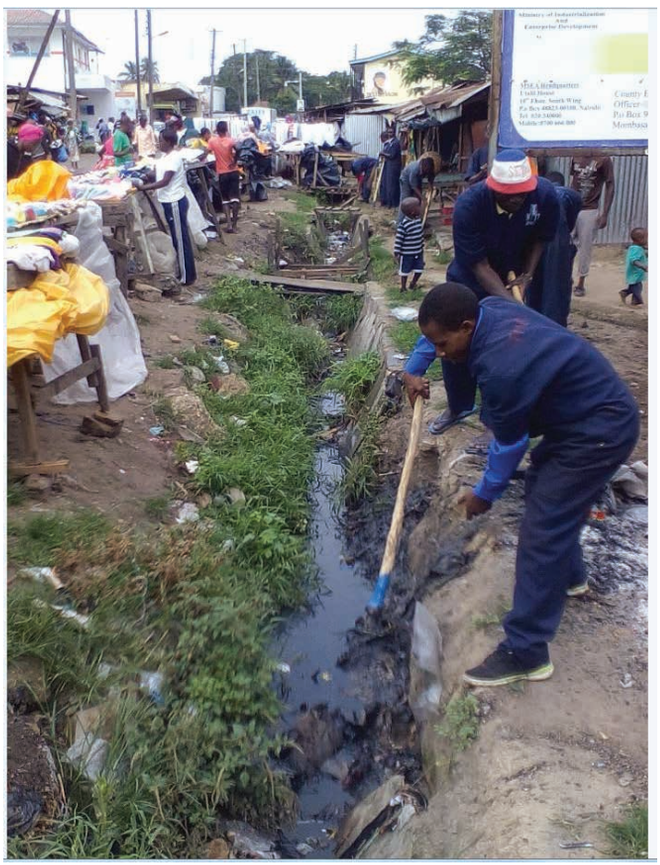
MABATI ROLLING MILLS CSR

ENVIRONMENT

Sustainability is a precious word to every employee at MRM and our actions are aligned with the principles of sustainable development, ensuring we "meet the needs of today without jeopardizing the ability of future generations to meet their own needs." At MRM, sustainability is not an abstract global issue but a local focus area. Our starting point is to continuously improve and minimise the environmental impact of our own operations, through eco-efficiency in manufacturing. Whether it be reduced Energy or Water consumption or utilising environmentally friendly 'greener' fuel sources we run a continuous improvement programme around sustainability and technology development.

As part of our commitment to sustainability, MRM is working with industry bodies like NEMA, Kenya Association of Manufacturers, Kenya Private sector Alliance, Federation of Kenya Employers, Kenya Bureau of Standards and other government agencies, business partners and other concerned organizations to promote environmental care, increase knowledge and disseminate good practice.

We have participated in tree planting activities each year as part of our efforts to support a sustainable environment through tree planting, rain water harvesting, clean up activities and other means. In fact, we are moving our own Mabati Technical Training Institute and Mabati Medical Clinic to solar power, and self- sustaining water supply by rain water harvesting.



EDUCATION

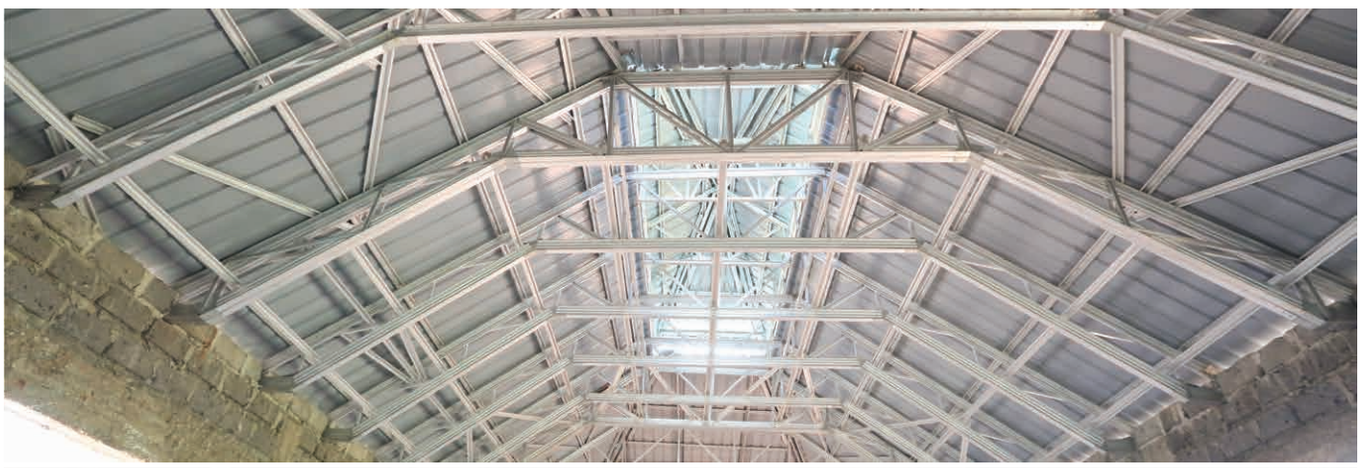
We have a structured approach to Education, exhibited by our Mabati Technical Training Institute which offers certified technical programmes to well over 500 Students annually.

Kuantzu the Chinese philosopher said "If you are thinking a year ahead – sow a seed. If you are thinking 10 years ahead – plant a tree. If you are thinking 100 years ahead – educate the people. By sowing the seed you will harvest once. By planting a tree, you will harvest 10 fold. By educating the people, you will harvest 100 fold.

We want to harvest 100 fold therefore we are giving importance to education and health. Education opens the door to a world of opportunities to improve one's standard of living.

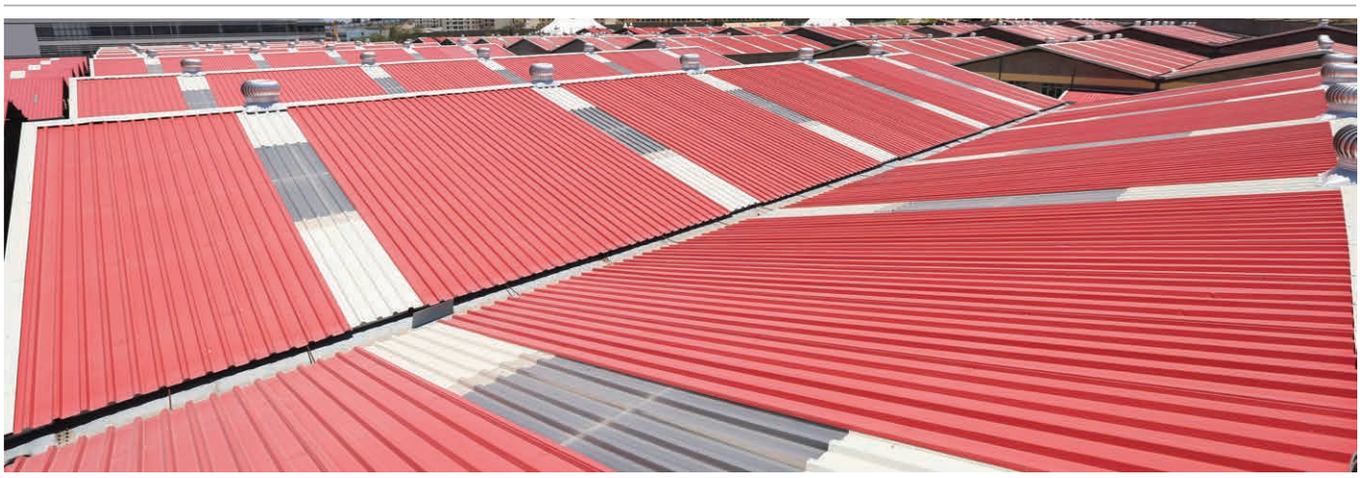
We want to join the global community in moving towards meeting the Millennium Development Goals which mainly speak about reducing extreme poverty.

KARURA - COMMUNITY CHAPEL



Maxcover and Ultra-Span

EDERMANN - PROPERTIES



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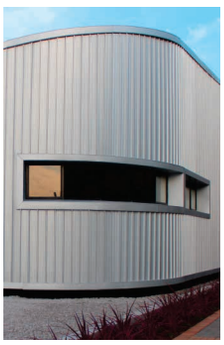

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