


Optima[®]
+Plus



*Version 2018

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





Inspired by its rich fauna and flora, its soils and its people; the colours of our **OPTIMA PLUS**[®] range reflect the energy and vibrancy of the African continent.

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



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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 PLUS[®] is a double 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 PLUS[®]** 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.

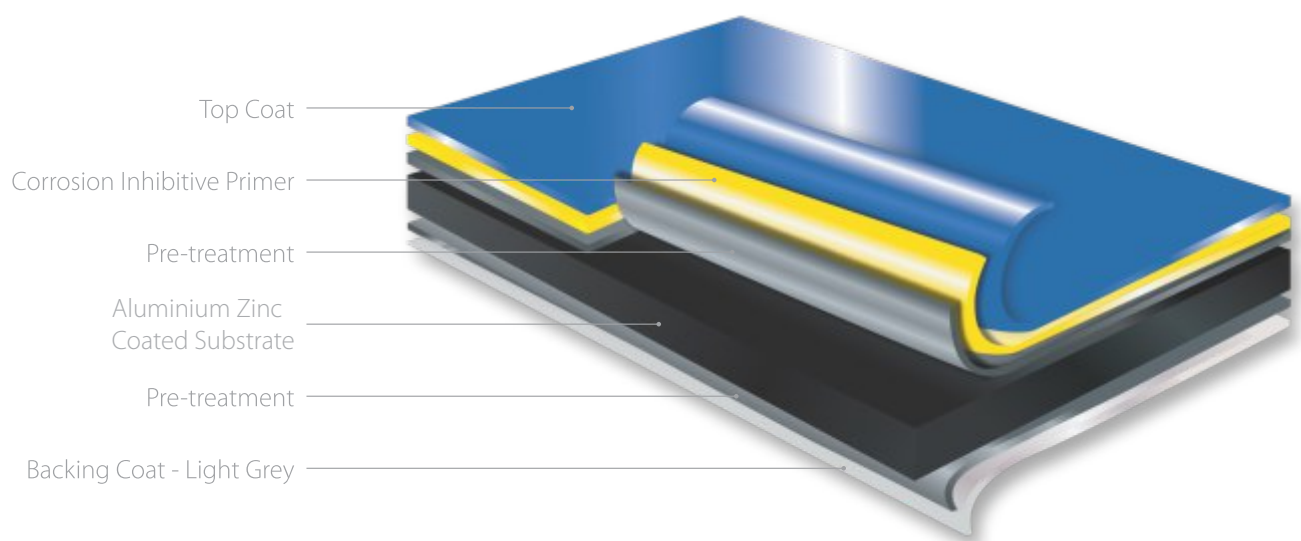
Lasting performance is at it's heart

The inner core of **OPTIMA PLUS[®]** 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:

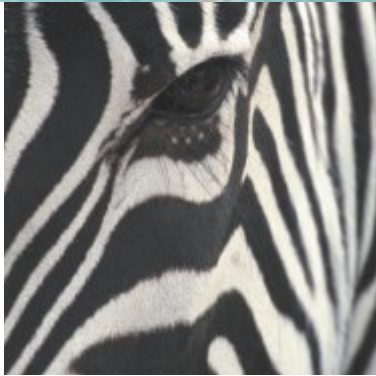
- The Aluminium component of the coating provides a tough physical barrier between the extreme atmospheric conditions and the inner core of steel
- The Zinc in the coating protects the steel at the cut edges

Cross Section of **OPTIMA PLUS[®]**



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**.



Quality Assurance

OPTIMA PLUS® 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 for quality control
- Live test sites

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.

Finished Products Conformance Testing

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

- | | |
|------------------------|------------------------|
| - Impact Testing | - Scratch Test |
| - Bend Test | - Solvent Resistance |
| - Paint Thickness Test | - Pencil Hardness Test |
| - Cross Hatch Test | - CIE Lab values |
| - Cupping Test | - 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 product undergoes long term performance testing as indicated below:

- **QUV / QUB testing**

The polymer characteristics of the **OPTIMA PLUS®** 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 visual performance of **OPTIMA PLUS®** 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



Usage Guidelines

OPTIMA PLUS® 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 PLUS**® 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 PLUS® 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



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

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

Technical Specifications

Mabati Rolling Mills Limited, **OPTIMA PLUS**® Grade, **G550** or **G330**. **OPTIMA PLUS**® is fit-for-purpose colour coated steel for use in **benign** corrosive environments. **OPTIMA PLUS**® 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

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

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

Branding

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

MRM OPTIMA PLUS 0.4MM CG AZ100 45107-1-1-1

Colour Fading and Physical Parameters

Colour	Maximum Fading ΔE 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

Coating Weight*

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

*Triple spot testing

Paint Line Tested Properties of Product

Property	Measured by	Result
Hardness	Pencil	2H min
Adhesion	Reverse Impact	500g
	T-bend	Max 2T
	Flexibility	Max 6mm dia
Specular Gloss	60 degree	40 ± 5 units
Paint Film	Top Coat	12 ± 2 μm
		5 ± 1 μm corrosion inhibitive primer
	Backing Coat	7 ± 1 μm - light grey
Solvent Resistance	MEK	100 double rubs
Color	CIE Lab	