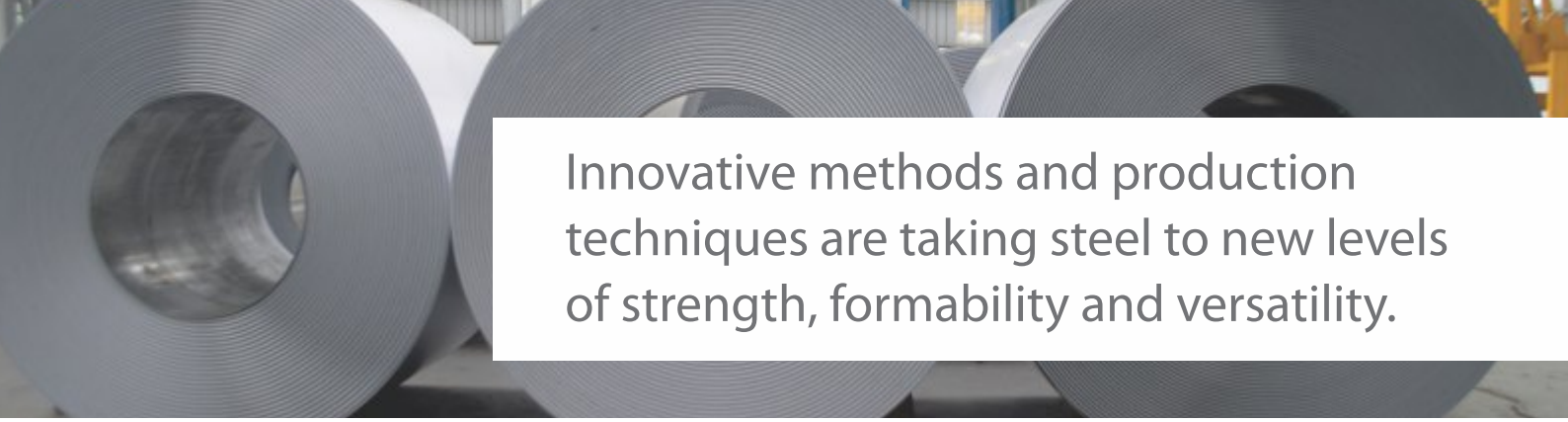




*Version 2018

The next generation of Coated Steel
from Mabati Rolling Mills Limited





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





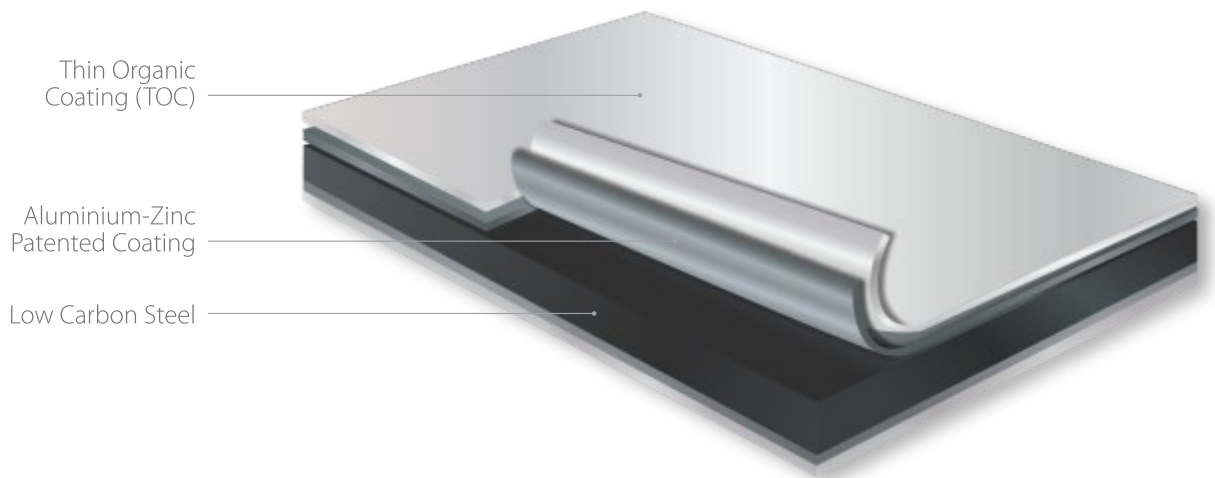
With **ZINCAL**[®], the durability and service life of modern coated steel is extended even further.

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 committed 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 value 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:

• **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.

• **Live Test Stations**

Live test stations have now been installed at various locations for monitoring the performance of **ZINCAL**® under everyday 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

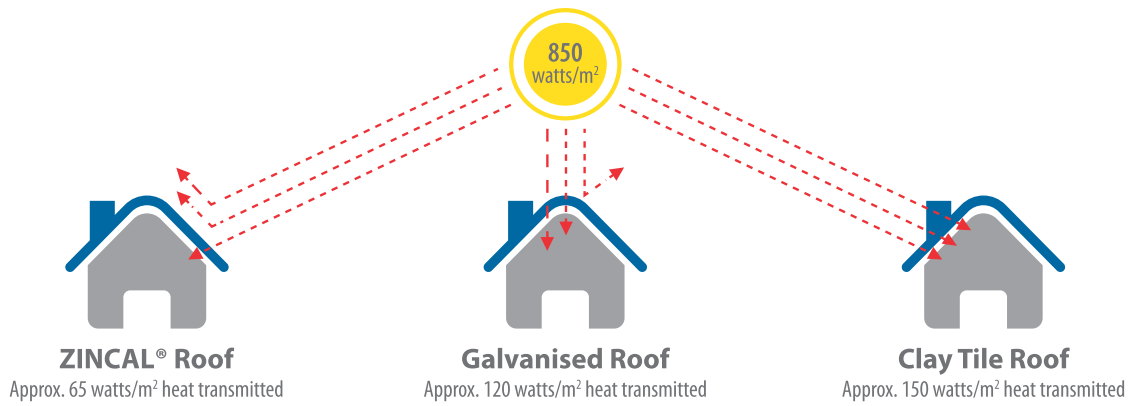


Product Selection Guide

	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

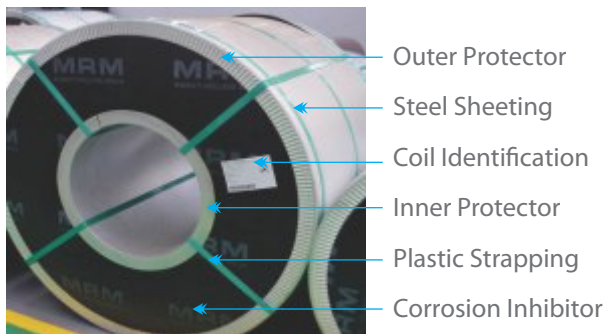
The thermal mass of **ZINCAL**[®] is significantly lower than traditional galvanised steel and clay tile roofs due to the addition of Aluminium. This increases the reflection of the sun's rays creating a cooler building in summer and a warmer building in winter.



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

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A member of the



Mombasa - Nairobi Highway
 PO BOX 68 Mariakani, 80113, Kenya
 Tel: +254 020 234 34 01 / 02 / 03
 Email: marketing.mrmcoils@safalgroup.com
 Website : www.mabati.com

