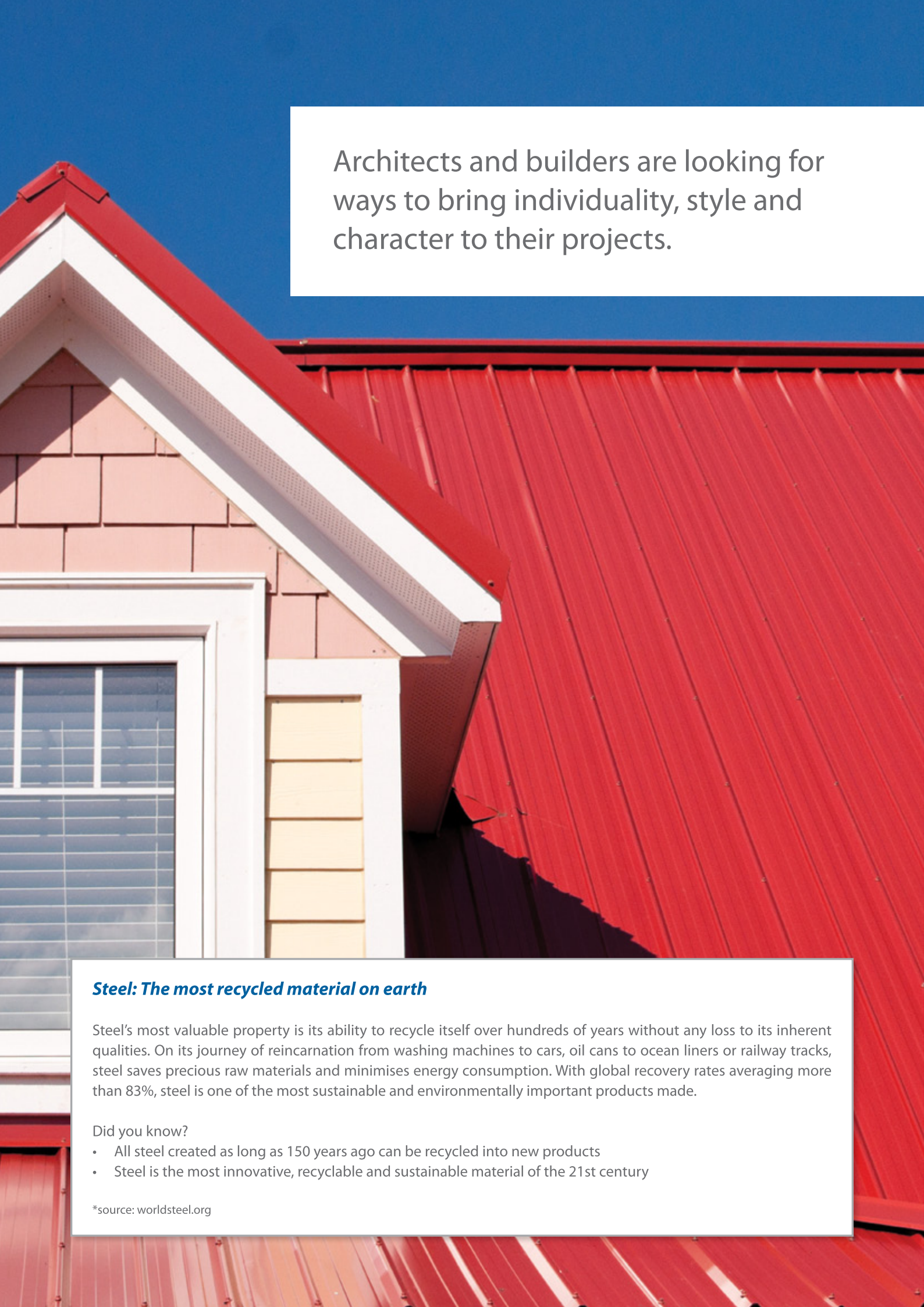




The next Generation of **Color Coated Steel**



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 recycle itself over hundreds of years 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, 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 important products made.

Did you know?

- All steel created as long as 150 years ago can be recycled into new products
- Steel is the most innovative, recyclable and sustainable material 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 55% Aluminium, 43.5% Zinc and 1.5% Silicon Alloy.

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

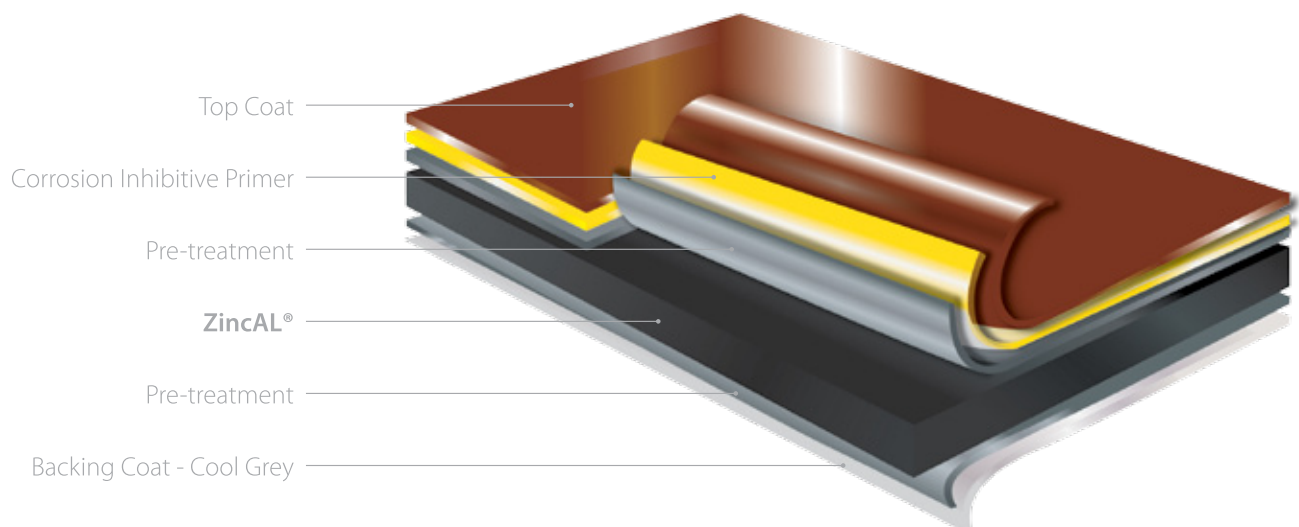
Colour that takes whatever the climate throws at it

COLORPLUS® has been developed as a premium product to endure South 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 paint 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 avoid 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.

The Safal Group – makers of COLORPLUS® – is 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.



Quality Assurance

COLORPLUS® is produced by **Safal Steel**, 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 quality system testing
- Quality inspection during production
- Quality assurance of the finished product (SABS product quality conformance)
- Artificial weather testing
- Live test sites

ISO Quality System Testing

At the core of our business is the aim to implement the ISO quality system. This ensures all processes are managed to ensure a consistent product is produced.

Quality Inspection

To ensure products sent to our customers are defect free, we have trained quality inspectors who are present during our various production processes.

Quality Testing

During the quality testing of the product we focus on various characteristics such as mechanical properties and coating performance. **COLORPLUS®** is tested using the following methods:

- Impact Testing
- Bend Testing (0T to 3T)
- Paint Thickness
- Cross Hatch
- Cupping Test
- Scratch Test
- MEK Rub Test
- Pencil Hardness
- CIE Lab values and Gloss %

Atmospheric Exposure

To ensure we produce a product that not only satisfies quality standards but also performs under weathering conditions, we have commissioned the following test methods:

- **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 visual performance of **COLORPLUS®** under every day weathering conditions

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.

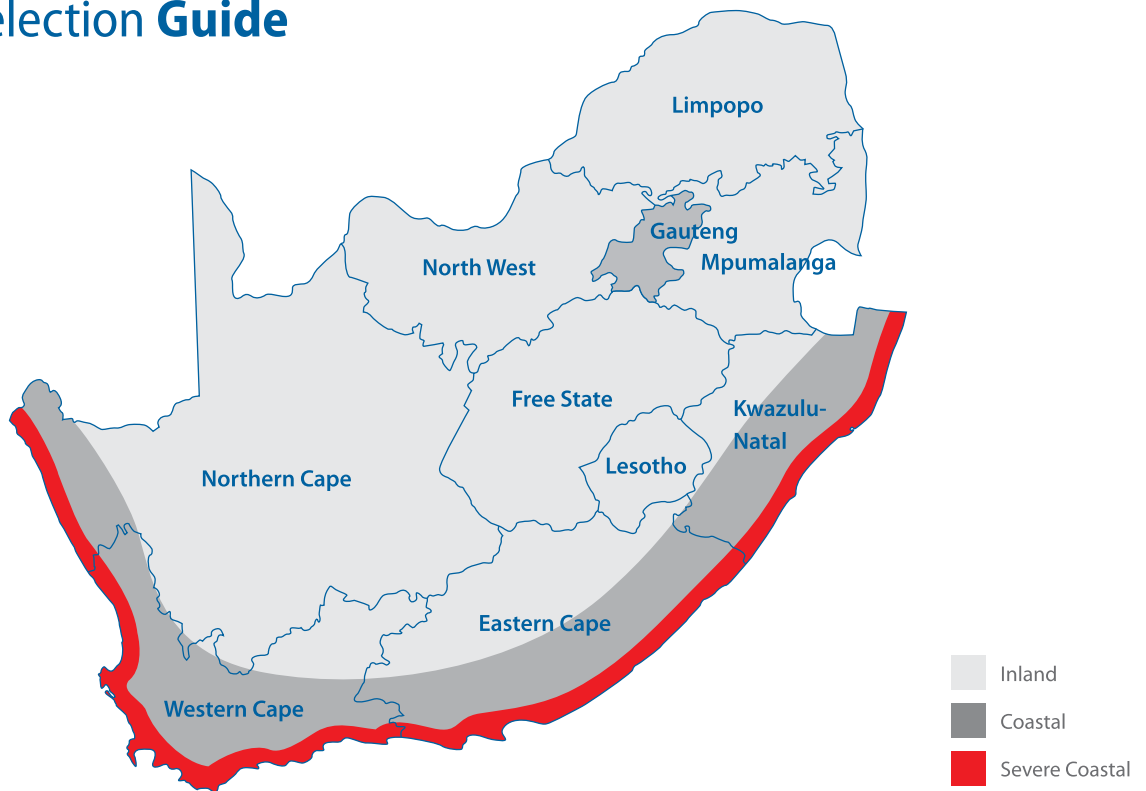
Adding colour not only offers aesthetic appeal, but also increases solar reflection.

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

COLORPLUS® Colours	Total Solar Reflectance	Thermal Emittance	Solar Reflectance Index
Seaspray	65%	0,85	78
Chalk	68%	0,85	81
Savannah	58%	0,85	68
Desert Sand	51%	0,87	58
Sunset Red	34%	0,84	34
Rustic Bark	26%	0,83	24
Rain Forest	30%	0,83	29
Deep Ocean	29%	0,83	28
Rain Cloud	32%	0,83	32
Slate	19%	0,85	16
Thunderstorm	17%	0,86	14

*The results reported have a measurement uncertainty of ± 5 units.
 *Colours reproduced here may not be completely accurate.

Product Selection Guide



Inland (C1-C2)

Medium commercial or mild marine
 40km+ from the splash zone

Coastal (C3)

Large commercial or average marine
 1-40km from the splash zone

Severe Coastal (C4-C5)

Large commercial or severe marine
 Marine zones less than 1km from the splash zone

Pre-painted	Inland	Coastal	Severe Coastal
AZ100	Yes	No	No
AZ150	Yes	Yes	No
AZ200	Yes	Yes	Yes

*Zone classification C1-C5 as per SANS 10 400L

Technical Specifications

Safal Steel **COLORPLUS®** AZ100/AZ150/AZ200 (refer to product selection guide overleaf) Grade, G550 or G275

Standards	Grades
A755M	G550
SANS 1845:2003	G275

Mechanical Properties	Guaranteed Minimum	
	G550	G275
Yield strength, MPa	550	275
Tensile strength, MPa	570	380
Elongation on 80mm GL%	-	16

Dimension

Base Metal Thickness (mm)		
Range	Tolerances	
	Width ≤ 1200	Width >1200
≤0.4	±0.06	±0.07
>0.4	±0.07	±0.08
≤0.6		
>0.6	±0.09	±0.01
≤0.8		
>0.8	±0.1	±0.11
≤1.0		
>1.0	±0.11	±0.12
≤1.2		

*Restricted thickness tolerance is subject to negotiation

Colour Fading and Physical Parameters

Colour	Maximum Fading ΔE CIELab (Cleaned) ASTM 2244	Gloss % (Within 15 years)	Maximum Chalking (Tape of 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

*Result may change depending on climate conditions

*Warranties available upon pre-application

Coating Weight*

Coating Class	Minimum (g/m ²)	AZ coating Thickness/microns
AZ100	100	27
AZ150	150	40.5
AZ200	200	54

*Triple spot testing

Paint Line Tested Properties of Top Coat

Property	Measured by	Result
Hardness	Pencil	F and greater
Adhesion	Reverse Impact T - Bend	≥ 10 Joule Maximum 3 T
Specular Gloss	60° meter	20 -50 units

Coil width (mm)

Range	Tolerance
750-1250	+5 / -0

Supply Conditions

Typical micron coverage	
AZ100/AZ150/AZ200	20µm top coat
	5µm corrosion inhibitive primer
	7µm backing coat – cool grey
*for applications in severe coastal conditions additional primer 5µm will be applied to AZ200	
Branding	Example: Safal Steel COLORPLUS®
	925 x 0.5 TCT, AZ150 Coil No.