

DSV's Distribution Park in Cape Town. Built with Safal Steel Colorplus® AZ150 in colour Seaspray Matt.

Photography: Gareth Griffiths Imaging

Product
Brochure



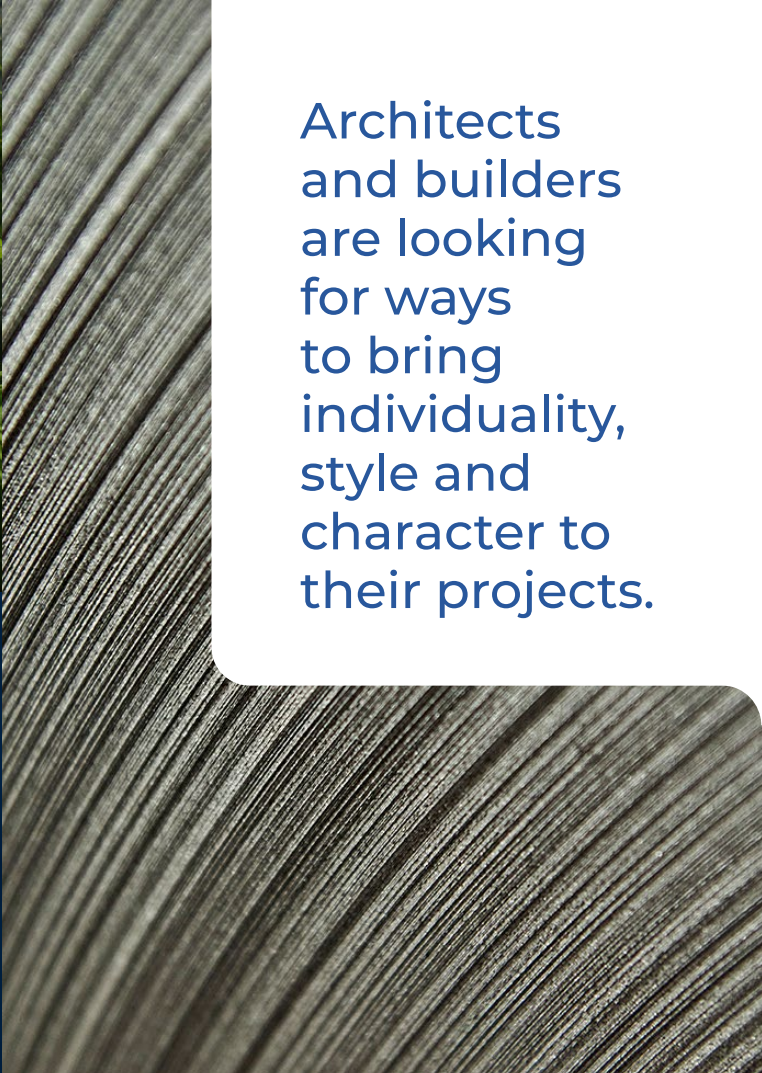
Colorplus®

for long lasting beauty.



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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; 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



Photography: Grant Duncan-Smith and Gareth Griffiths



Safal Steel products carry a five-year warranty and are suitable for a multitude of applications and locations.



Colorplus®: For long lasting beauty.

Colorplus® brings modern innovation to pre-painted steel roofing with a range of colours that are as visually appealing as they are durable.

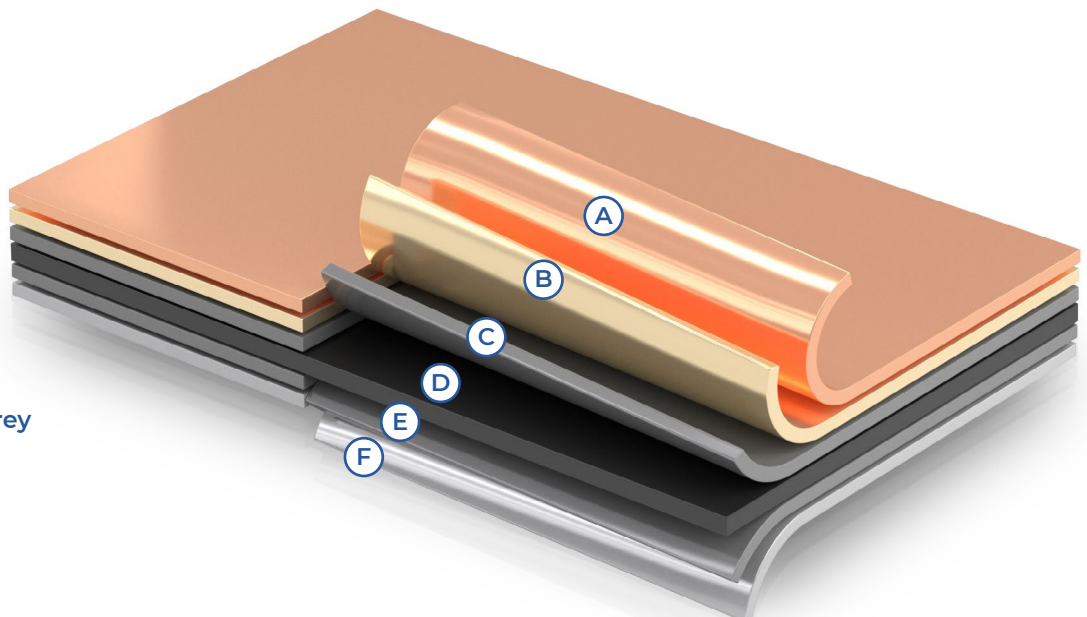
Colorplus® is produced by a unique, efficient process whereby rolled steel is continuously hot dipped into a 55% aluminium, 43.5% zinc and 1.5% silicon alloy.

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

Cross section of Colorplus®

- (A) Top coat
- (B) Corrosion inhibitive primer
- (C) Pre-treatment
- (D) ZincaI®
- (E) Pre-treatment
- (F) Backing coat: Cool grey



Safa Steel, makers of Colorplus®, is a proud 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.



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.

Colorplus® is available in a range of vibrant colours:

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 dark colours.

Please note: The colours represented may vary and may not be an exact match to the metal swatch. Certain colours are available in specialised paint systems such as polyurethane and PVDF. Terms and conditions apply.

Colorplus®	Chalk	Rustic Bark	Rain Cloud
Savannah	Thunderstorm	Rainforest	Deep Ocean
Sunset Red	Seaspray	Desert Sand	Slate

Please note:

- Colours depicted may not be an accurate representation of actual colours due to limitations of the printing process.
- Colorplus® standard colours minimum order quantity is 18 tons.
- PVDF paint coatings available. Minimum order is 54 tons.

For nonstandard colours:

- Colorplus® minimum order is 36 tons.
- Colorplus® Matt and Textured minimum order is 54 tons.
- Additional costs will apply.
- Lead times cannot be guaranteed as this is influenced by availability of raw materials and time required for colour development.



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 (OT 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 everyday weathering conditions.

Mechanical properties

	G550	G275
Yield strength, MPa.	550	275
Tensile strength, MPa.	570	380
Elongation on 50mm GL%	NA	16

Guaranteed minimum at ambient temperature.

Standards	Mechanical grades	Colour specifications
A792/M	G550 + G275	NA
SANS 9364	G550	NA
SANS 1845	NA	Paint characteristics.

Supply conditions

AZ 100 AZ 150 AZ 200	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 AZ 200.
Flatness	ASTM 924M and ISO 16163.

Base metal thickness (mm)

Range	Tolerances width ≤ 1200	Width >1200
>0.45 - 0.5	± 0.03	± 0.04
>0.5 - 0.8	± 0.04	± 0.05

Specific requirements possible on agreement. Base metal thickness is Zincal® coated thickness.

Coil width

Range	Tolerance
925mm - 1220mm	+5 / -0

Coating adhesion - 180° bend test

Coating class	Guaranteed minimum	
	G550	G275
AZ 100/AZ 150/AZ 200	2t	1t

Fire rating

Property	Grading	Standard
Combustibility.	Non-combustible.	Sans 10177-5
Flame spread (FS).	No flame spread.	Sans 10177-9
Fire resistance rating (FRR).	>30 minutes*	Sans 10177-2

* Based on 0.55mm thickness.

Coating weight*

Coating Class	Minimum (g/m²)	AZ coating thickness/ microns
AZ 100	100	27
AZ 150	150	40.5
AZ 200	200	54

* Triple spot testing.

Typical reflective index

Colour	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
Rainforest	30%	0.83	29
Deep Ocean	29%	0.83	28
Rain Cloud	32%	0.83	32
Slate	29%	0.88	30
Thunderstorm	29%	0.84	23

The results reported have a measurement uncertainty of ± 5 units. Please note this figure may vary depending on AZ coating weight. Slate and Thunderstorm: new thermo efficient paint system.

Branding

SAFAL STEEL COLORPLUS 925 X 0.5 TCT (0.46 BMT) 45107-1-1

Colorplus® colour fading

Colour	Maximum fading ΔE CIELab (Cleaned) ASTM 2244	Maximum chalking (Tape- off Test) ASTM 0-4214-07	Physical parameters (within 10 years)
Light colours $L \geq 60$	6	6 (10 years).	Peel, crack, check, chip.
Dark colours $L < 60$	15	6 (10 years).	Peel, crack, check, chip.

Result may change depending on climate conditions. Warranties available upon pre-application.

Guideline for product selection

	Zone C1-C2	Zone C3	Zone C4	Zone C5
	Urban, rural, low levels of airborne pollution.	Light industrial, average marine corrosion.	Large commercial, medium industrial or high marine corrosion.	Heavy industrial or severe marine zones.
	40km or more from the splash zone.	1 - 40km from the splash zone.	400m to 1km from the splash zone.	100m to 400m from the splash zone.
AZ 100				
AZ 150				No exposed bottom surface.
AZ 200				Cut edges to be sealed.

Zone classification C1-C5 as per SANS 9223 and SANS10400L.

All Safal Steel Prime material is branded on the backing coat. Insist on Safal Steel material.

For any technical queries please contact Safal Steel and ask for the representative in your area.