



ArcelorMittal



Formable ~ Strong ~ Versatile ~ Durable ~ and Aesthetically Pleasing

**Chromadek**<sup>®</sup>  
Your preferred roofing and cladding solution

Shaping the future of steel

# Formability



Chromadek roofing as used at the University of Pretoria.

Steel is generally regarded as a rigid material that offers strength and longevity. With Chromadek, form meets function and offers versatile design possibilities desired by architects, profilers and property developers in steel colour coated roofing and cladding.

## Testing for formability and durability

At ArcelorMittal South Africa, the home of Chromadek, we're proud to announce that exhaustive tests are done on Chromadek to ensure it meets the requirements that will stand the test of time.

To ensure paint longevity the following tests are done on the Chromadek paint system:

- a bend test to determine resistance to paint cracking
- wet and dry film thickness to ensure paint thickness
- hardness and gloss after curing
- reverse impact testing to ensure adhesion
- solvent rub tests to ensure proper curing

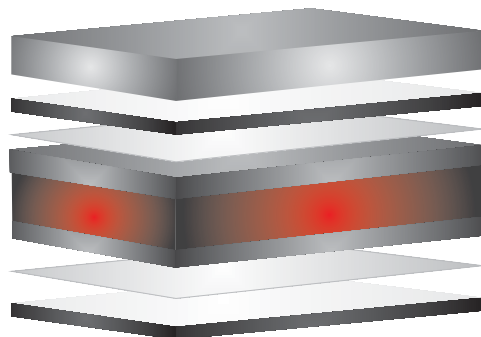
Collectively the tests done on Chromadek ensures that Chromadek remains in a steady state when the demands of exposure is placed on it.

Make Chromadek your preferred roofing solution

Chromadek Ultim<sup>®</sup> is the ideal choice for coastal and heavy industrial applications.

This ultimately enables colour coated steel roofing to be applied in some of the most demanding environments in Africa.

## Chromadek<sup>®</sup>



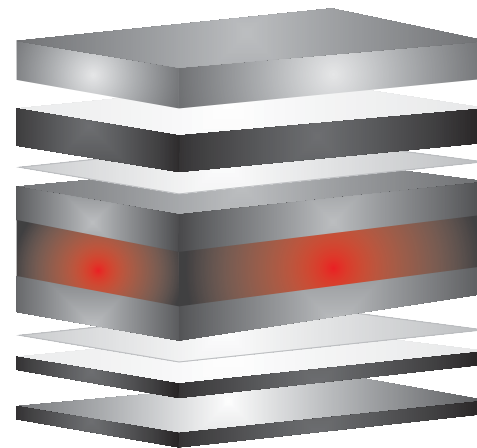
### Top side

Top coat (20+/-2µm)  
Primer (5µm)  
Pretreatment

Steel with 14µm Zn Coating (Z200)

Pretreatment  
Single backing coat (8µm)  
Reverse side

## Chromadek Ultim<sup>®</sup>



### Top side

Top coat (20+/-2µm)  
Primer (20µm)  
Pretreatment

Steel with 19µm Zn Coating (Z275)

Pretreatment  
Primer (10µm)  
Backing coat (10µm)  
Reverse side

## Know what you buy

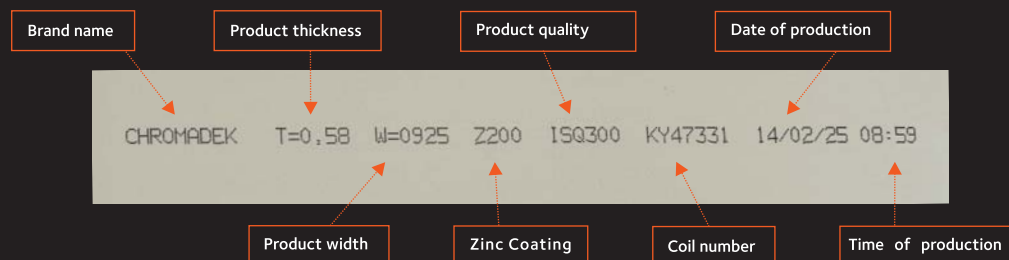
At first glance roofing paint systems appear similar but each has qualities and properties that set it apart more so with Chromadek. When you see a Chromadek roof it's designed in a paint system that's unique and specifically developed for African climatic conditions.

The uniqueness of Chromadek resides in the paint coating which is oven cured at elevated temperatures. Through enhancements made to the paint system the following can be realised:

- Improved gloss and colour retention ensuring longevity
- A heat reflective colour range that's energy efficient

As the paint system is applied under controlled conditions on a continuous paint line the result is exceptional paint adhesion and corrosion resistance unequalled by any hand painted roofing and unmatched by alternative roofing materials.

Chromadek provides the assurance of colour coated steel roofing and cladding that carries a warranty. The paint system is designed to provide resistance to fading, blistering and chalking taking into account fluctuation from the natural elements of heat, cold, hail and UV rays to which Chromadek is exposed.



The identity of Chromadek is maintained in the African Heritage range of 14 colours that Chromadek is produced in. Each colour carries a unique signature that adds the finishing touches to a steel roof.

To make sure it's authentic Chromadek look out for the branding on the reverse side of the roof sheeting.

### Coating configuration

Chromadek is available as either Chromadek Standard or Chromadek Ultim designed for exposure and use in different atmospheric conditions:

#### Standard Chromadek

- Is intended for use under rural, Industrial (mildly chemically polluted) or moderate marine conditions
- Comprises a Z200 hot-dipped galvanized substrate pre-primed with a primer (Dry film thickness (DFT) of 5µm) and finished with a final paint coat (DFT of 18 - 22µm) on the top surface.
- A single backing coat (DFT of 8µm) is normally applied to the reverse side of the sheet.

#### Chromadek Ultim

- Is intended for heavy industrial or marine conditions,
- Comprises a Z275 hot-dipped galvanized substrate, pre-primed with a chrome free primer (DFT of 20µm) and finished with a final coat (DFT of 18 - 22µm) on the top surface, giving a total dry film thickness of 38 - 42µm.
- The reverse surface is coated with a 10µm corrosion resistant chrome free primer and a 10µm top surface paint system.

Chromadek® as used for industrial buildings.



# Strength

Chromadek is a lighter and stronger roofing material of choice that's 80% lighter than non steel roofing. This translates to a saving on the roof structure, construction time and ultimately cost.

With steel roof sheeting selection not all colour coated steel sheeting complies with the design requirements for structural roofing materials. While colour coated steel roof sheets are often referred to as Chromadek the one sure way to ensure it's authentic and guaranteed is to check for the unique Chromadek branding on the reverse side of the coil or profiled roof sheet.

## Maintenance

The superior corrosion resistance, of Chromadek reduces maintenance costs as it does not require repainting for many years after installation.

The appearance and properties of Chromadek can be safeguarded by proper handling, storage, installation and maintenance procedures. Chromadek should be stored in a dry, well-ventilated area, clear off the ground. Sheeting should not be allowed to get wet while bundled or nestled in stacks. If a pack does become wet, the sheets should be separated as soon as possible and the surfaces dried with a cloth. Sheets should then be stacked so that free air circulation completes the drying process.

When handling Chromadek on site, care should be taken not to damage the surface finish. If the paint surface should become scratched, either during installation or later on, specially formulated air-drying touch-up paints are available. When touching up the surface would first have to be cleaned of any dirt, grease or chemical pollutants that might be present.

To keep your Chromadek roof in pristine condition for as long as possible, surfaces should periodically be washed down with water and a mild detergent to prevent the accumulation of corrosive debris such as leaves, dirt and pollution fallout. This is especially recommended for Chromadek in a corrosive environment.

The following is a guideline for the application of Chromadek.

## Chromadek Warranty table:

When using Chromadek, you are assured of excellent technical back-up.		Rural unpolluted		Urban inland/ industrial		Terms and conditions apply to warranty.			
		C1/C2 <sup>®</sup> Low corrosion risk		C3 <sup>®</sup> Medium corrosion risk		C4/C5 <sup>®</sup> High corrosion risk			
Colour coated product	# Coating thickness (µm)	Dry with occasional condensation - no specific pollution		Higher humidity with some air pollution or mild coastal (>5 km from HWM)		Exterior environment of buildings located 1 to 5 km from HWM		Industrial area, high humidity/ coastal salinity (>400 m to 1 km from HWM)	
		*Weathering & non peeling	Non-Perforation	*Weathering & non peeling	Non-Perforation	*Weathering & non peeling	Non-Perforation	*Weathering & non peeling	Non-Perforation
Chromadek	40	10	20	10	20	NR	NR	NG	NG
Chromadek Ultim	60	10	30	10	30	10	20	10	15

*@ Based on environment and corrosion categories as outlined in ISO 9223 and ISO 12944 standards.*

*# The top coat thickness which includes metal and paint systems.*

*\* Natural weathering degradation curves as provided in datasheet C 1.4*

*NR Not recommended, but can be considered with manufacturer's agreement*

*HWM High Water Mark*

*NG No Guarantee*

*Terms and conditions apply to warranty*

# Versatility

## Versatile and aesthetically pleasing

Chromadek offers great versatility for roofing and cladding applications. South African architects use Chromadek in a variety of roofing and cladding projects ranging from churches, shopping malls, factories, warehouses and airports to luxury eye-catching homes and housing estates.

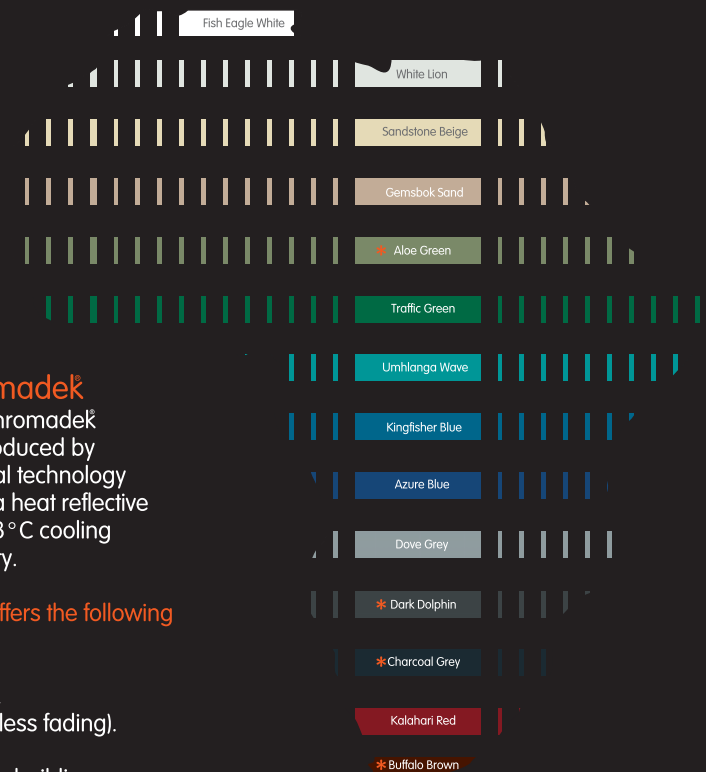
Chromadek is exceptionally colourfast with warranties given on application. The Chromadek African Heritage Colour Range consists of 14 exciting colours that captures the essence of the African environment and reflects the continent's unique colours and hues, allowing designers complete freedom of expression in roofing and cladding.



Inspired by Africa,  
perfected by us.

These distinctive colours add personality to projects unmatched by any other roofing material.

The range has evocative colour names such as:



### \* Heat reflective Chromadek

Some of the colours in the Chromadek range are heat reflective. Produced by utilising an advanced thermal technology paint system, incorporating a heat reflective pigment providing up to an 8 °C cooling effect and improved durability.

Heat reflective Chromadek offers the following benefits:

- Increased durability.
- Increased gloss retention.
- Improved colour stability (less fading).
- Sustainable film integrity.
- Reduced heat transfer into buildings.

# Going Green

## How a product makes the green difference

Have you ever thought that you knew what going green all is about? Encouraging awareness related to the “going green” environment and sustainability is fast increasing. Interestingly this number drops when questions arise about how products make a contribution in green building.

So how are we involved in green building solutions if not already? If you find yourself engaging in thinking what will promote green building you are at the starting point. While legislation is a primary consideration, taking into account how a product makes a difference toward a sustainable built environment provides food for thought. Vital in the drive toward the green building initiative is the choice of materials that can be used.

Consider for a moment aspects of our building environment. Every structure if not most has a roof, this being an integral component of a building that can be finished in Chromadek.

## Going green with Chromadek, what does this entail?

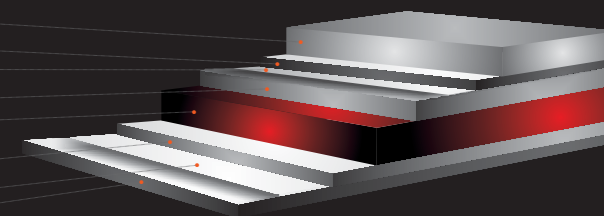
While “going green” with Chromadek doesn’t just mean a greener colour, it starts with one of the very first steps in producing colour coated steel in a more sustainable manner. In “going-green” with Chromadek the first step involves the modification of the chrome content used in both the primer and pre-treatment components of Chromadek. The top coat and the backing coat is also chrome free.

Generically the pre-treatment in colour coated steel exists as a thin film layer designed to ensure the adhesion between the organic layers applied to the zinc coated steel substrate for enhanced corrosion resistance. Currently Chromadek consists of both a chrome free primer and the recent transition to chrome free pre-treatment (also referred to as surface treatment).

## The “going green” DNA of Chromadek

Going green credentials = Chrome free

- Top Coat
- Primer
- Surface treatment
- Zinc Coating
- Steel
- Zinc coating
- Surface treatment
- Backing coat



## Chromadek has going green credentials

What differentiates Chromadek as a colour coated roofing solution is the elimination of the chrome content in the pre-treatment, primer, and the top and backing coats applied. In turn the need to treat chrome containing effluent produced as a by-product when producing colour coated steel is eliminated.

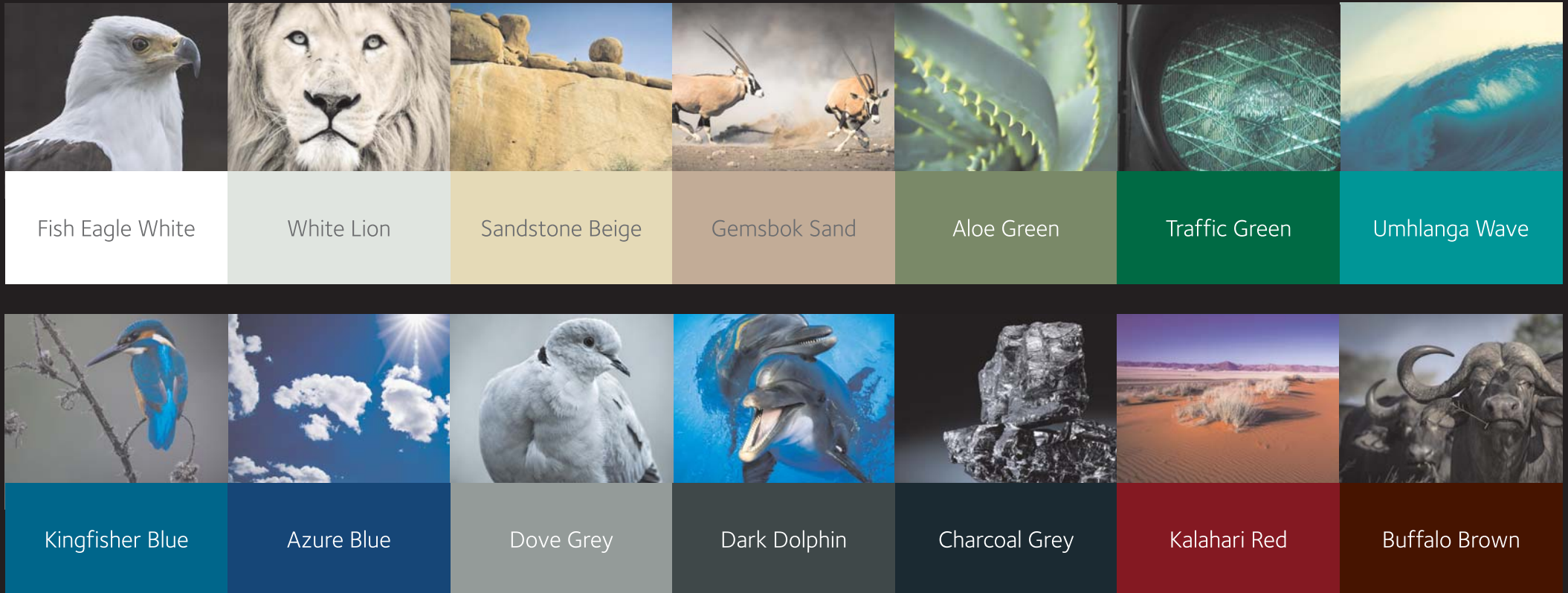
This lends itself to sustainable manufacturing through the controlled emission of chrome when producing the preferred colour coated roofing solution. In doing so every coil of Chromadek for roofing and cladding produced by ArcelorMittal South Africa is committed to making a sustainable difference.

For the “going-green” colour coated steel roofing solution, consider Chromadek or Chromadek Ultim, the only local organic coated material supplied as chrome free.



# Colour range

## The Chromadek African Heritage Collection



All colours in the Chromadek African Heritage Collection are available in both Chromadek and Chromadek Ultim.



# Inspired by Nature



## please note:

- ▶ Colours represented **may vary approximately** to those depicted on swatch
- ▶ Approximately **30% Gloss**

## for nonstandard colours:

- ▶ Min. order is **30 tons**
- ▶ **Additional costs** will apply
- ▶ Lead times **cannot be guaranteed** due to colour development and raw material availability



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*Data sheet: C 1.1*

## Availability and properties

**Galvanised Material**

## Hot-dip galvanised cold rolled and hot rolled steel substrate

**General description**

Hot-dip galvanised sheet is produced on continuous zinc coating lines from either cold rolled (thickness range 0.27 to  $\leq 2.0$ mm) or hot rolled (thickness range 2.01 to 3.0mm) steel substrate, in coil form. It is produced to the requirements of EN 10346, EN 10143, ASTM A653M, ASTM A924, SABS 3575 or SABS 4998 as well as ArcelorMittal South Africa's ISQ standards.

The galvanising process yields homogeneously zinc-coated sheet with a bright, smooth metallic finish. The zinc coating can be supplied with a normal or flattened minimised spangle finish.

Zinc coatings of different thickness may be ordered to suit specific end-use requirements. The thickness and type of steel substrate are selected on the grounds of mechanical and structural considerations. For tolerances on galvanised sheet refer to the data sheet: Galvanised Material Tolerances (File reference C1.2).

**Mechanical properties**

Refer to Table 1: Mechanical properties specifications of substrate.

**Coating mass**

The prefix Z in the coating designation indicates a pure zinc coating and the number denotes the total mass of the coating on both sides of the sheet ( $\text{g}/\text{m}^2$ ). The coating mass (Refer to ISO 1460) is given in Table 2.

Table 2 Coating mass

Coating designation	Minimum Requirement Triple Spot Test ( $\text{g}/\text{m}^2$ ) Total Both Sides	Minimum Requirement Single Spot Test ( $\text{g}/\text{m}^2$ ) Total of both sides	Nominal thickness of zinc coating per side ( $\mu\text{m}$ )
Z100 <sup>1</sup>	100	85	7
Z150 <sup>2</sup>	150	128	10
Z200	200	170	14
Z275	275	235	19
Z450 <sup>3,4</sup>	450	385	32
Z600 <sup>3,4</sup>	600	510	43

**Notes:**

1. Only available on 0.27 and 0.30mm ISQ 550 material.
2. ISQ specification only.
3. Not recommended for forming grades.
4. Not available on full hard material.

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For further information, contact:

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