

RE/MAGINEERING INNER STRENGTH WITH THE POWER OF MAGNESIUM

Optigal[®]

GLOBAL PRODUCT FIRST TIME IN INDIA

Next generation Zinc–Aluminium–Magnesium
alloy coated–steel substrate technology.



PREMIUM COLOUR COATED STEEL



*T&C APPLY

ABOUT AM/NS INDIA

AM/NS India is the joint venture between ArcelorMittal and Nippon Steel – two of the world's leading steel companies. As an integrated steel manufacturer with iron-making, steel-making and downstream facilities spread across India, we produce over 600 varieties of steel for a range of applications across industries. Our goal is to create smarter, more sustainable steels for India that empower its growth trajectory and enable brighter futures for all.

AM/NS INDIA HAZIRA STEEL PLANT

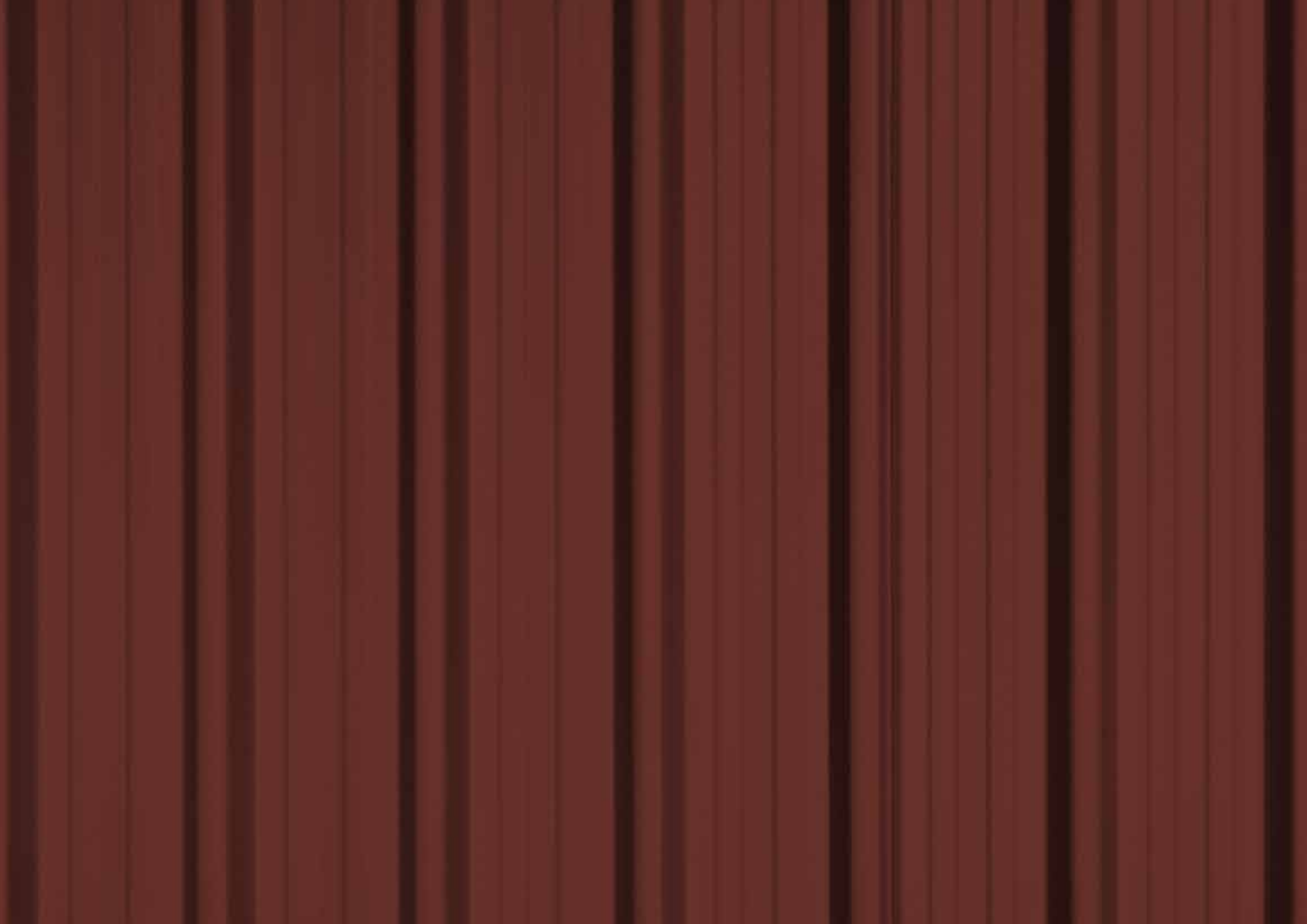
With a capacity of 10 Million Tonnes Per Annum (MTPA), the AM/NS India Hazira Steel Plant in Gujarat is an integrated, sophisticated and environment-friendly facility that is one of the largest single-location flat steel plants in the world. The plant incorporates comprehensive support infrastructure that includes power, lime and oxygen plants, a township and a captive port that can accommodate capesize vessels. This modern operations and handling system enables self-sufficiency and global logistics.

OUR LARGE COLOUR COATING AND GALVANIZING FACILITIES AT HAZIRA, PUNE, KHOPOLI AND GANDHIDHAM.

AM/NS India has some of the largest Colour Coating and Galvanizing facilities in India, operating from Hazira, Pune, Khopoli and Gandhidham. These facilities have a galvanised steel capacity of over 2.03 MTPA with 0.72 MTPA of colour-coated steel available in over 4500 bespoke shades, finishes and textures.

Durable, reliable and sustainable, Pre-Painted Galvanised Iron (PPGI) from AM/NS India has become one of the most preferred products in the category with pre-painted steel supplied to over 110 countries across the globe.





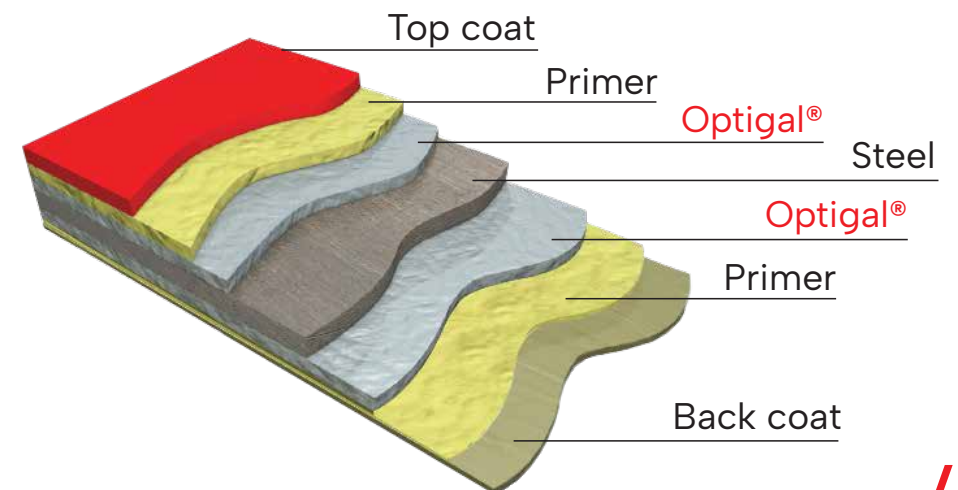
WHAT IS OPTIGAL® TECHNOLOGY?

Optigal® is an innovative zinc-aluminium-magnesium alloy based technology, patented by ArcelorMittal Europe, and optimised for a new generation of better performing and more sustainable, colour coated steels.

THE OPTIGAL® MANUFACTURING PROCESS

Optigal® steel coating is produced by hot dip galvanization of the steel in a unique bath of zinc-aluminium-magnesium alloy. This creates the ideal substrate for pre-painted steel, combining all the properties required to deliver excellent corrosion resistance, formability, lightness and sustainability, that is far superior to other metal coatings.

The magnesium in the alloy coating reduces 'edge creep' while the zinc provides traditional cathodic protection. This unique alloy combination delivers high durability and beauty, you expect in Optigal® that starts from inside.

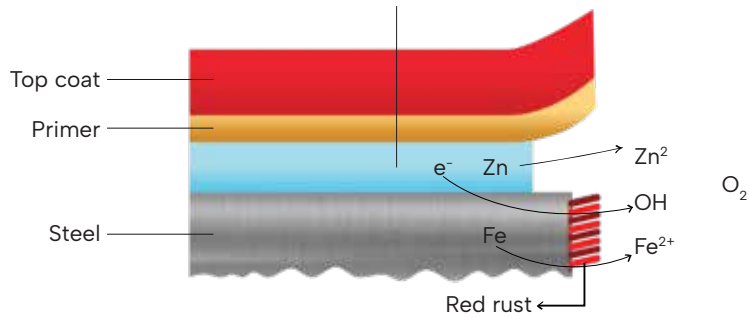


WHAT IS OPTIGAL® TECHNOLOGY?

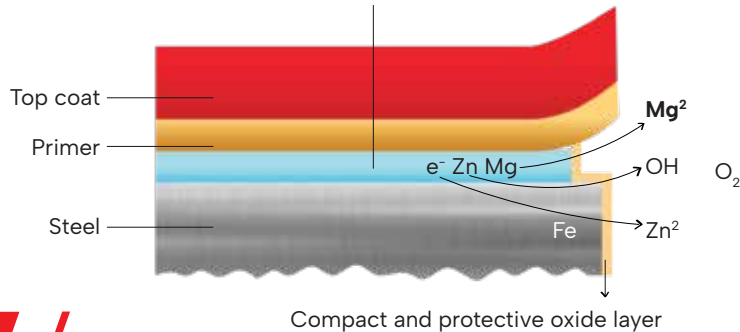
01 / SUPERIOR CORROSION RESISTANCE

The unique alloy composition of Optigal® with optimal balance between zinc, aluminium and magnesium, provides superior corrosion resistance.

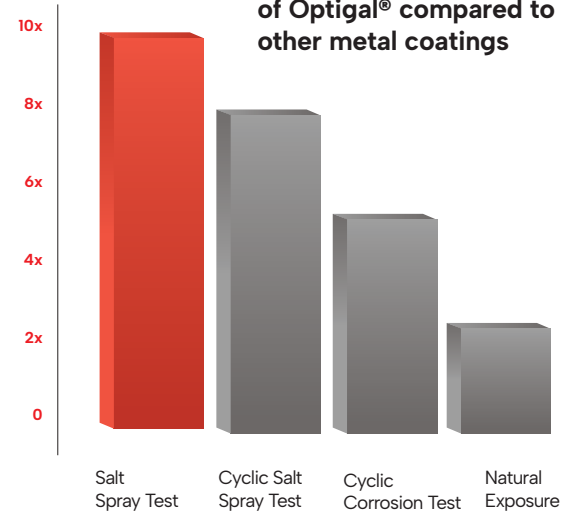
COLOUR COATED GALVANISED STEEL



COLOUR COATED STEEL MADE WITH OPTIGAL®

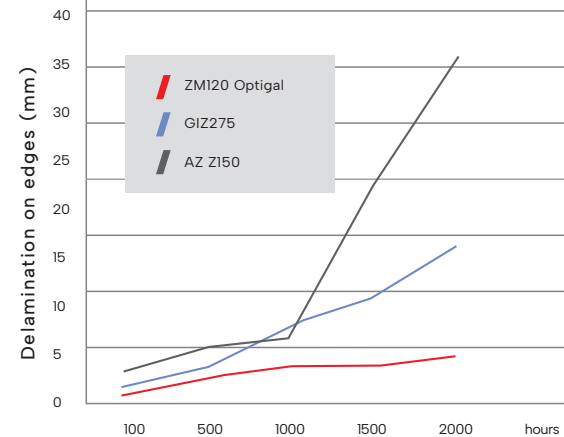


Corrosion resistance rates of Optigal® compared to other metal coatings



All tests show that Optigal® technology delivers a performance that is at least 3x better than other metal coatings.

Salt Spray Test DIN EN ISO 9227 on 25µ colour coated steel



Optigal® exhibits superior durability during accelerated corrosion tests. The difference is even more visible after 1000 hours in salt spray test when compared with other typical substrates.

02 / EXCEPTIONAL 'CUT EDGE' PROTECTION

Pre-painted steel with Optigal® technology delivers exceptional cut-edge protection performance. It forms a highly compact and stable protective layer at an early stage, leading to a much lower paint delamination on edges and scratches with a performance that is at least 3x better than other metal coatings.

/ Optigal/ZM120



/ PPGI/Z275

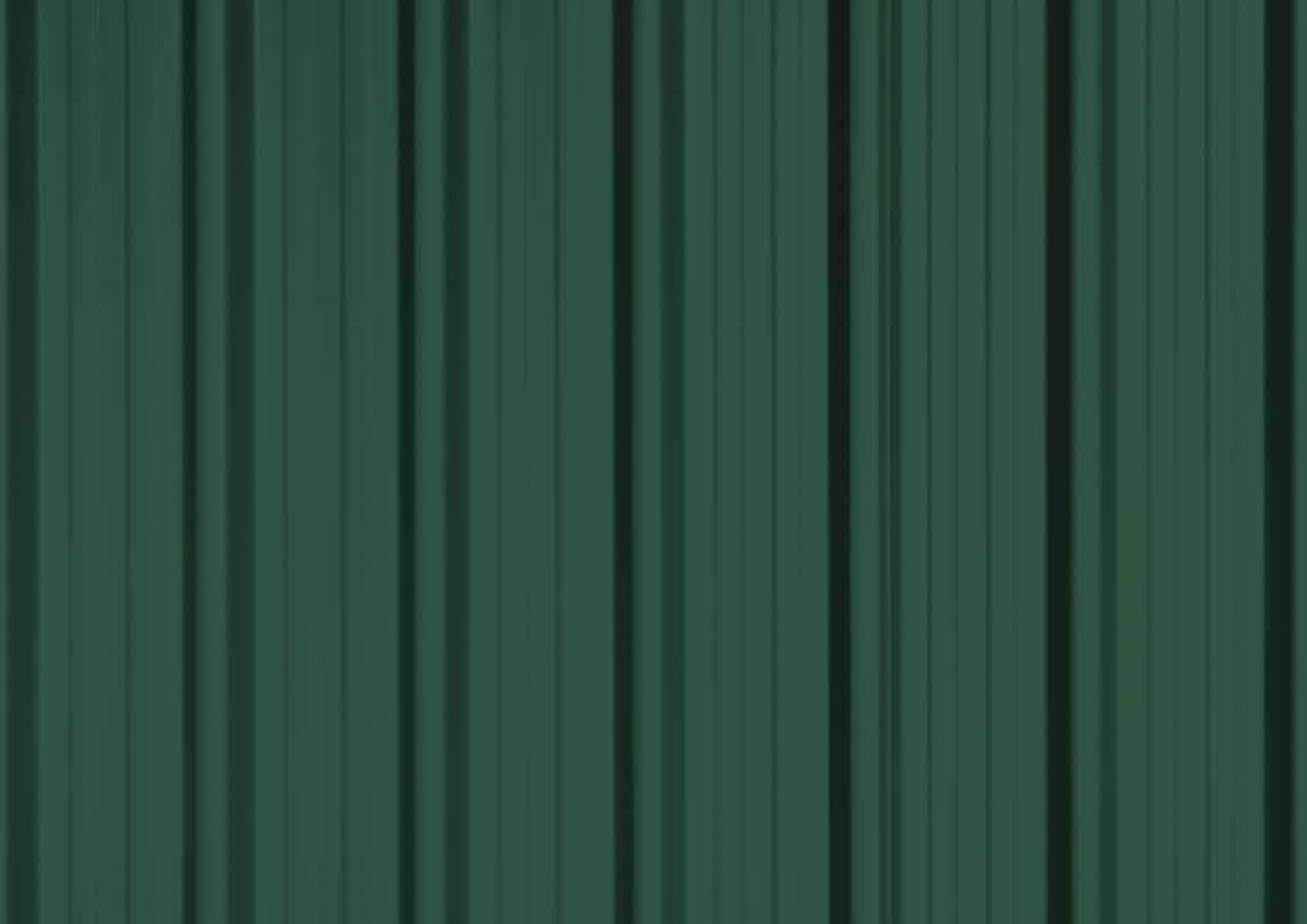


/ PPGL/AZ150



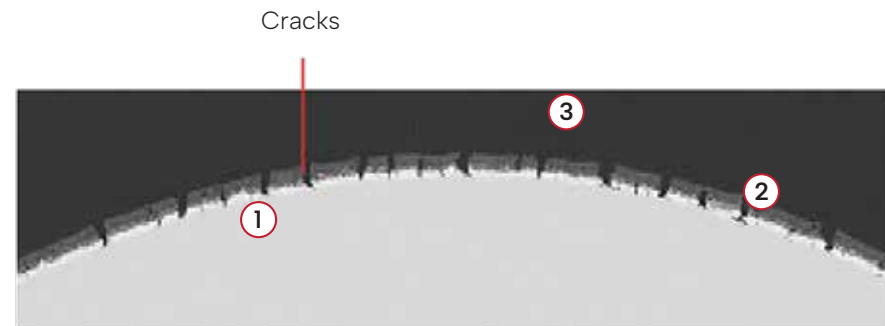
Salt Spray Test DIN EN ISO 9227, 2000h, on 25µ colour coated steel



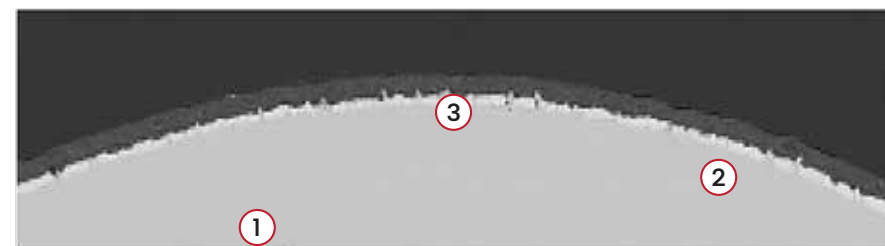


03 / OPTIMISED FLEXIBILITY

The highly resistant, adherent metallic layer of specially designed Optigal® coating is processable in terms of bending, roll forming, profiling, and other work processes, without developing any cracks on the bends.



COLOUR COATING CRACKS APPEAR IN OTHER COATINGS (3T BENDING)



NO CRACK APPEARS IN THE PAINT LAYER WHEN USING OPTIMISED OPTIGAL® (3T BENDING)

T-bend (adhesion of the coating) $\leq 2 T$
T-bend (resistance to cracking on bending) $\leq 3 T$
1) Steel 2) Metallic Layer 3) Paint

04 / REAL WORLD TESTING FOR REAL ASSURANCE

Optigal® has been tested for over 10 years in various natural environments (C3 rural, C5 marine) and results confirm its excellent behavioral characteristics.



French Corrosion Institute in Brest, France (C5M)

Optigal ZM120 with Granite Standard (25u) after two years of exposure in Brest according to EN10169



TEST	DURATION	CORROSION RESISTANCE RESULTS
Salt spray test ASTM B 117	1500h	No blistering Optigal® > PPGI, PPGL

This product is eco-friendly because it is free of hexavalent chromium and heavy metals, minimizing its environmental impact and promoting safety and sustainability.*

*T&C Apply

05 /

A PRODUCT THAT IS INTERNATIONALLY TESTED AND CERTIFIED

Optigal® has been approved by independent European certification bodies, like CSTB (Centre Scientifique et Technique du Bâtiment), DIBT (Deutsches Institut für Bautechnik) and ITB (Instytut Techniki Budowlanej).

CSTB



Deutsches
Institut
für
Bautechnik

DIBt

06 /

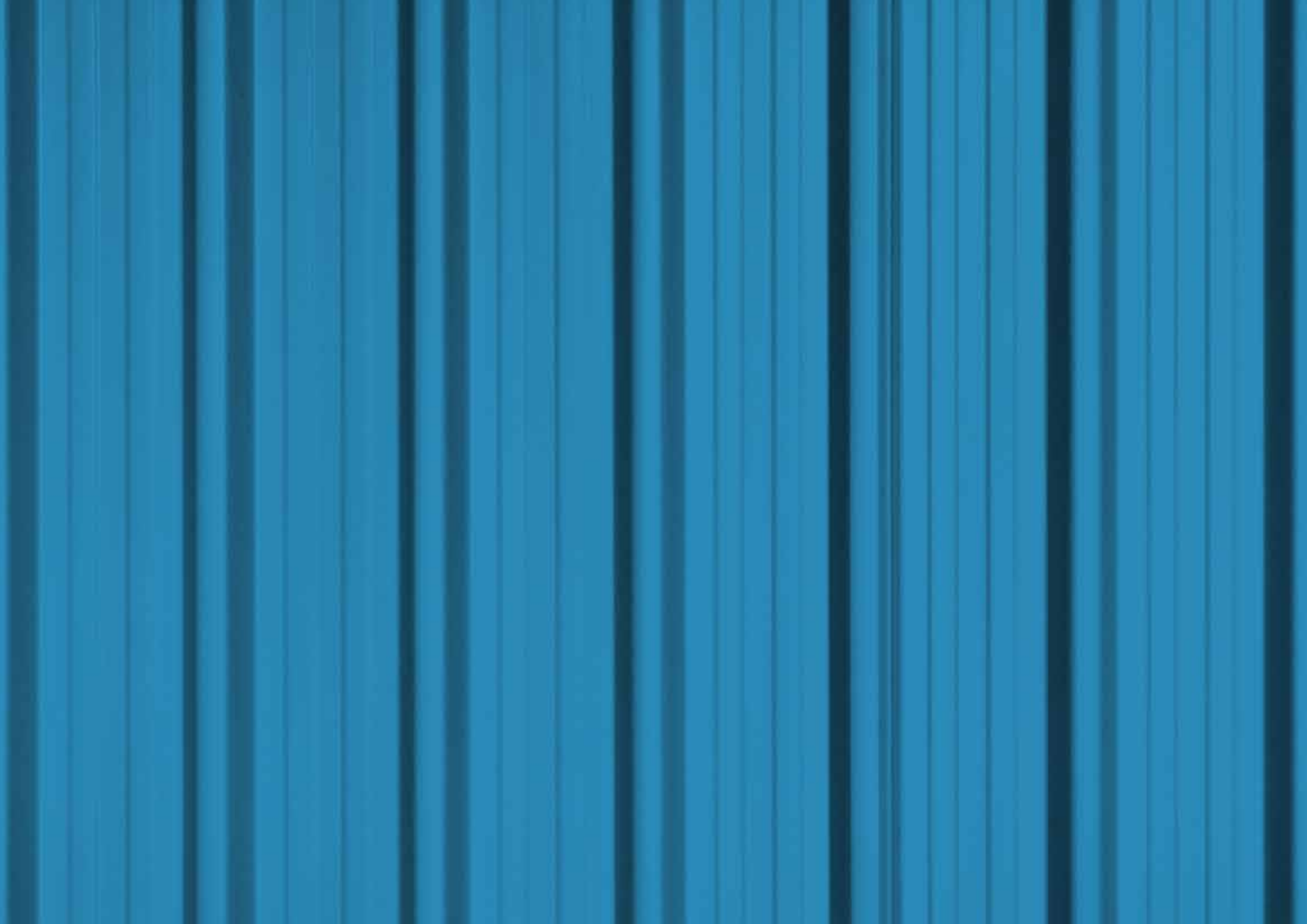
AN ECO-FRIENDLY AND SUSTAINABLE CHOICE

Optigal® is a new age metallic coating that offers significant sustainability advantages over other metal coatings.

- / Lower zinc use contributes to lower mineral extraction & reduced transport emissions.
- / The lighter weight of Optigal® raises transport efficiency and reduces energy costs.
- / Use of Optigal® increases the lifetime expectancy of the building and therefore preserves resources.



*T&C Apply



OPTIGAL® APPLICATIONS



Steel Cladding

Roofing Profiles

Sandwich Panels



Roofing Tiles

Architectural Facade

OPTIGAL® SPECIFICATIONS

SPECIFICATION FOR OPTIGAL®		
SR.NO	PARAMETER	SPECIFICATIONS
1	Base Metal Equivalent Specification	EN 10346 (Zn-Mg-Al alloy coating)
2	Colour Coating Equivalent Specification	EN 10169
3	Grade & Thickness	S250GD/ S280GD : 0.40 - 0.80 mm S320GD/ S350GD : 0.40 - 0.70 mm S550GD : 0.40 - 0.60 mm
4	Thickness Tolerance	0.40 - 0.60 : +/-0.025 mm 0.60 - 0.80 : +/-0.03 mm For S550GD, 0.60mm +0 /-0.050mm
5	Width Range	1000 - 1250 mm
6	Width Tolerance	+6/-0 mm
7	ZM Coating, GSM	ZM 80 - ZM120
8	Paint Type	RMP/SMP/SDP/PVDF
9	Pencil Hardness	2H
10	T Bend	3T - S250GD/S280GD/S350GD 6T - S 550GD
11	MEK	100 DR min
12	Scratch Resistance	1.5 Kg
13	Cross Hatch	1mm X 1mm
14	Reverse Impact	10 J min S550GD - NA
15	Salt Spray (hrs) ASTM B 117	1500
16	QUV (1000 hrs) ASTM G 53-94	DE - 5 max Gloss Retention - 30%min
17	Gloss	30 - 60 GU or as per sample
18	Delta E	< 1.0 for Light Shade & <1.5 for dark Shade NA for metallic and wrinkle shades
19	Guard Film	As per order (50µm min)
20	Packing	Standard metal packing
21	Coil weight	1.5 - 10MT For with Guard Film 3.5MT max
22	Liner Marking	Sandwich Liner marking (Ink Jet Printing - Before Back coat)
23	AMNS Monogram	Yes
24	ID Sleeve	Upto 7.5MT coil wt- 5 mm CB Sleeve >7.5T- 15mm CB Sleeve

*Lower/Higher coating can also be supplied on case to case basis

AVAILABLE COLOUR IN OPTIGAL®



RAL 9010

PURE WHITE



RAL 5012

LIGHT BLUE



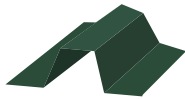
RAL 5015

SKY BLUE



RAL 3009

OXIDE RED



RAL 6028

PINE GREEN



RAL 1015

LIGHT IVORY



RAL 7045

TELEGREY 1



RAL 7035

LIGHT GREY



RAL 9002

GREY WHITE



RAL 9003

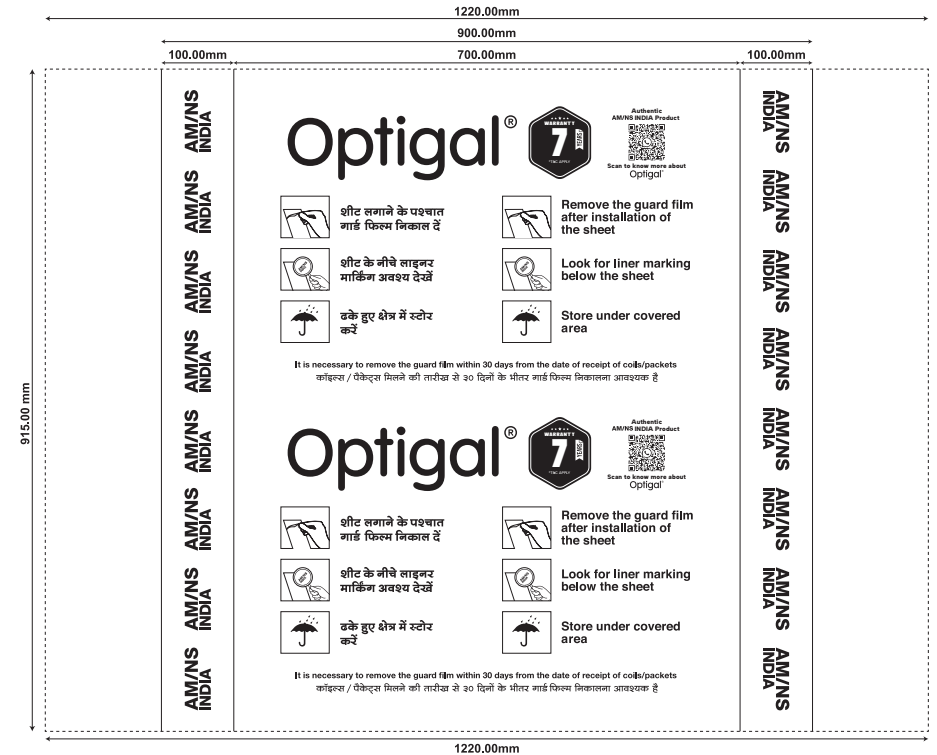
SIGNAL WHITE



RAL 7015

SLATE GREY

OPTIGAL® AVAILABLE IN GUARD FILM



OPTIGAL® LINER MARKING

Liner Marking will appear as:

AM/NS INDIA OPTIGAL®_WARRANTY_MM/YY

