Optigal®

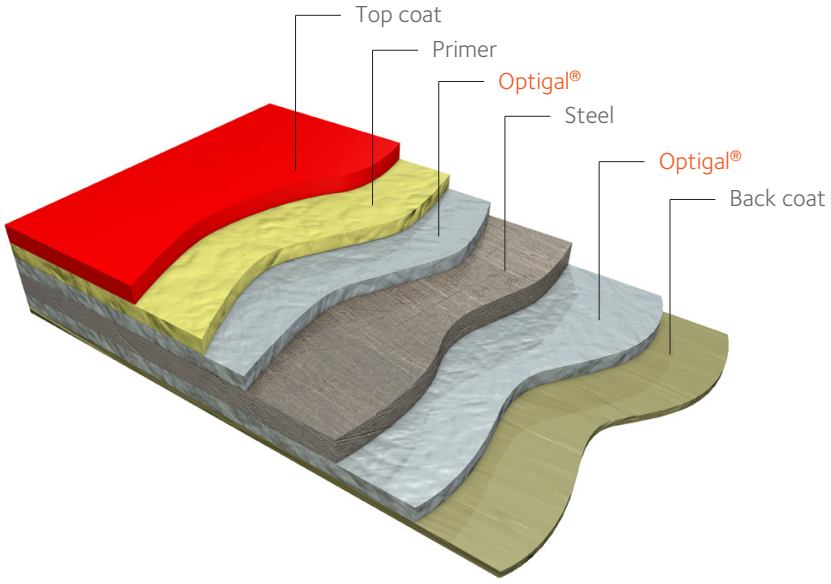
Optimised protection for the new generation of organic coated steel

What is Optigal®

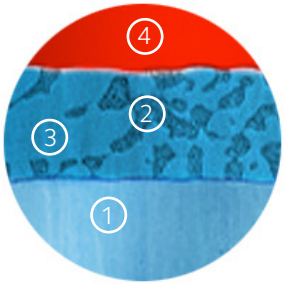
Optigal® is a new zinc-aluminium-magnesium alloy developed for a new generation of better performing and more sustainable organic coated steels.

- More protection
- Better sustainability
- Lighter weight construction
- Improved flexibility

Optigal® is the ideal substrate for prepainted steel. It is created by hot dip galvanising of steel strip in a bath of zinc, aluminium and magnesium. ArcelorMittal has tested different compositions of Zn-Al-Mg and elected **Optigal®** as the best, combining all properties required for organic coated steels delivered to the construction market : corrosion resistance, formability, lightness and sustainability.



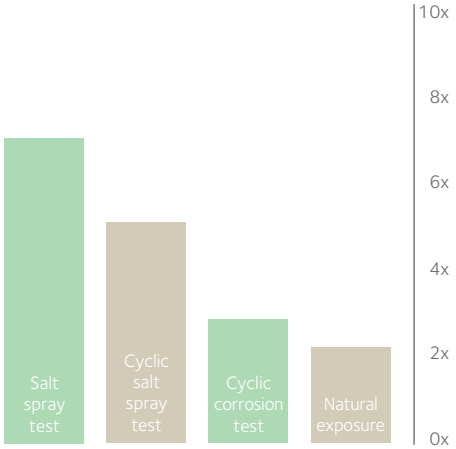
Organic coated steel made with **Optigal®** benefits from improved corrosion resistance: A highly compact and stable protective layer is formed at early stage, leading to a much slower corrosion rate on cut edges and scratches.



Optigal®
1 Steel
2 Zn-Al-Mg
3 Zn crystal
4 Paint

✓ Improved corrosion resistance

The unique alloy composition of **Optigal®** with optimal balance between zinc, aluminium and magnesium, provides superior corrosion resistance. All tests show that **Optigal®** has a performance that is at least twice as good as regular Hot Dip Galvanized (HDG).

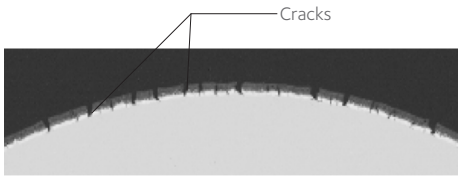


Corrosion resistance rates of Optigal® compared to regular HDG

✓ Optimised flexibility

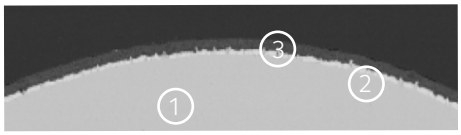
Granite® and **Estetic®** made with **Optigal®** are much more flexible compared to non-optimised ZM coatings available on the market place.

They exhibit the formability level required by the most popular forming techniques: roll-forming, bending, etc.



1 steel 2 metallic layer 3 paint

Organic coating cracks appear in non-optimized ZM coatings (3T bending)



1 steel 2 metallic layer 3 paint

No crack appears in the paint layer when using optimized Optigal® (3T bending)

T-bend (adhesion of the coating) ≤ 2 T

T-bend (resistance to cracking on bending) ≤ 3 T

✓ Lighter

- Thanks to lower density and reduced metallic coating weight, **Optigal®** allows a reduction in overall weight.
- Mechanical properties remain unchanged thanks to the steel substrate.
- Protection remains the same, while keeping high durability and extended life time.

✓ Eco-friendly

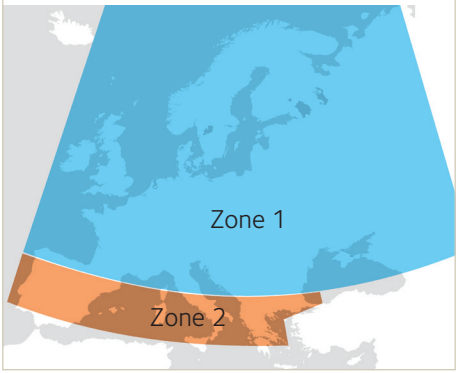
- Worldwide every year, five million tons of zinc are extracted for use in steel galvanisation with zinc resources becoming ever scarcer over time. **Optigal®** ensures the preservation of natural resources by using less zinc than pure zinc coatings.
- **Optigal®** is free of any 'Substances of Very High Concern*'. It complies with the European REACH** Regulations to produce materials free of hexavalent chromium compounds and other black listed heavy metals.

* Substances of very high concern included in the annex XIV of REACH regulation

Guarantees

Thanks to **Optigal®**, ArcelorMittal is able to provide an automatic guarantee in 2 European zones for the Granite® organic coated range.

See guarantee conditions on ArcelorMittal website http://industry.arcelormittal.com/industry/building



Recommended substitution using Optigal®

Classical hot dipped **Optigal®** galvanised offer

Z100 (7µm per side)	ZM60 (5µm per side)	Recommended for interiors, in non-severe environments
Z140 (10µm per side)	ZM80 (6µm per side)	
Z200 (14µm per side)	ZM90 (7µm per side)	Usable for exteriors in specific areas
Z225 (16µm per side)	ZM100 (8µm per side)	Recommended for exteriors
Z275 (20µm per side)	ZM120 (10µm per side)	

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