



## **Stroncoat®**

The new generation of zinc-magnesium coatings

### Stroncoat® - Coating

- **A newly developed hot-dip coating for steel products, provides ultimate corrosion protection properties**

High performance coating for all applications where zinc-plated steel is essential.

- **Stroncoat® consists of Zn + Mg (1-2%) + Al (1-2%)**

Stroncoat® consists of zinc and small fractions of magnesium and aluminium.

- **Offers extraordinary corrosion protection with constant and thinner coating layers compared to standard HDG zinc layers (Z)**

Salt spray tests returned a corrosion resistance two to six times higher by comparison with standard zinc coating.

- **Provides possible savings for corrosion protection (painting system, filler, cathodic E-Coats)**

Stroncoat® impresses with excellent varnish adhesion.

- **Improved cutting edge protection**

Thanks to its special resistance against corrosion, the corrosion protection itself is significantly higher than for standard products, even after processing.

- **Working properties just like those of standard HDG zinc**

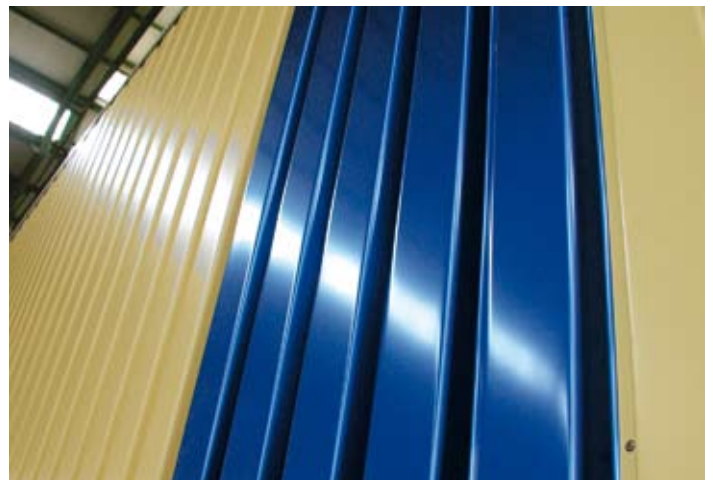
Be it metal forming or joining: Stroncoat® holds excellent mechanical properties.

- **Stroncoat® offers tremendous resource saving potential thanks to the zinc savings achieved**

Our latest product developments make a substantial, sustained contribution to environmental protection.



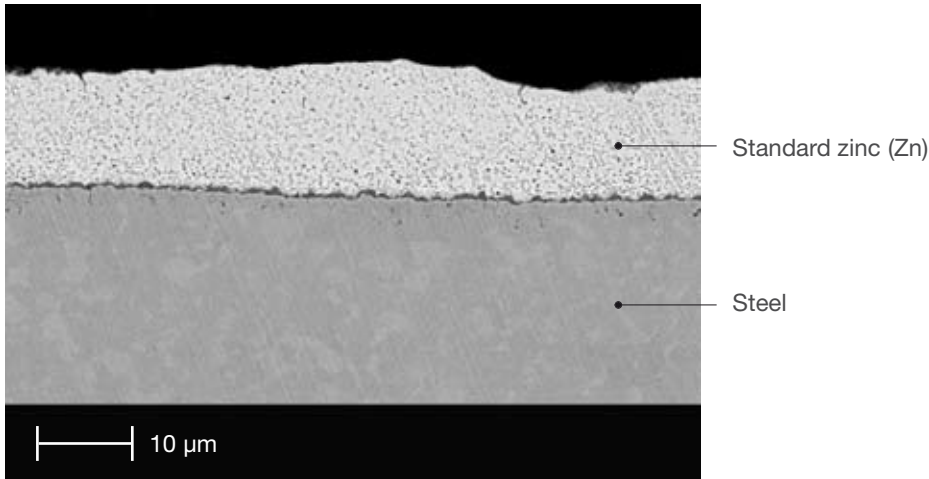
Example of use: ventilation system



Example of use: facade cladding



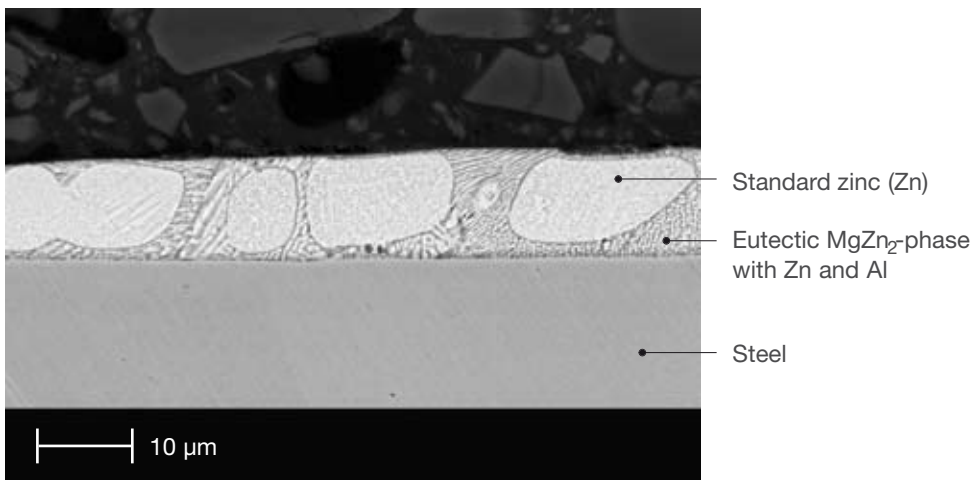
Example of use: storage systems



### Standard product – cross section

At the cross-section polish of the standard coating, the light zinc layer is clearly visible on the dark steel substrate.

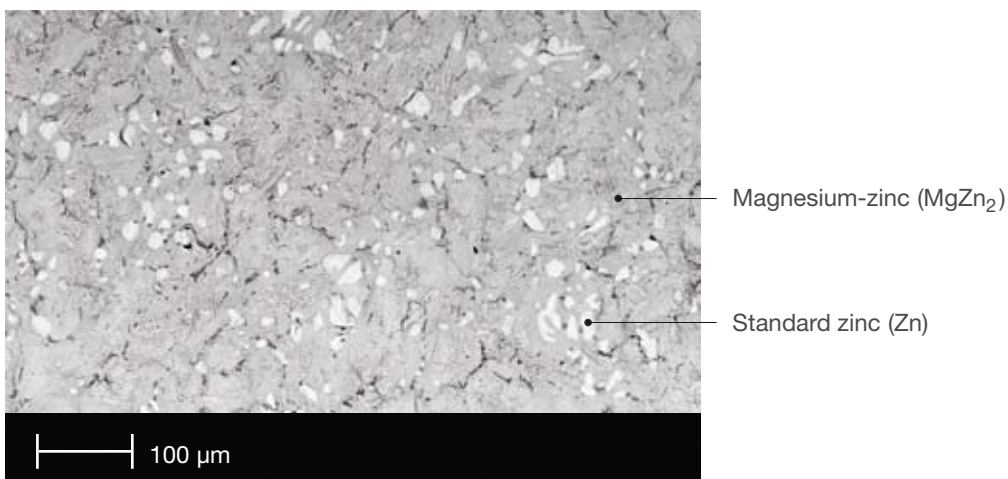
The thicker the zinc layer, the better the protection against corrosion.



### Stroncoat® layer – cross section

The cross-section polish of the Stroncoat® coating shows the difference: The Mg- and Al-alloys are visible as a high-contrast phase within the zinc layer.

They effectively influence the anti-corrosion mechanism in a positive way.



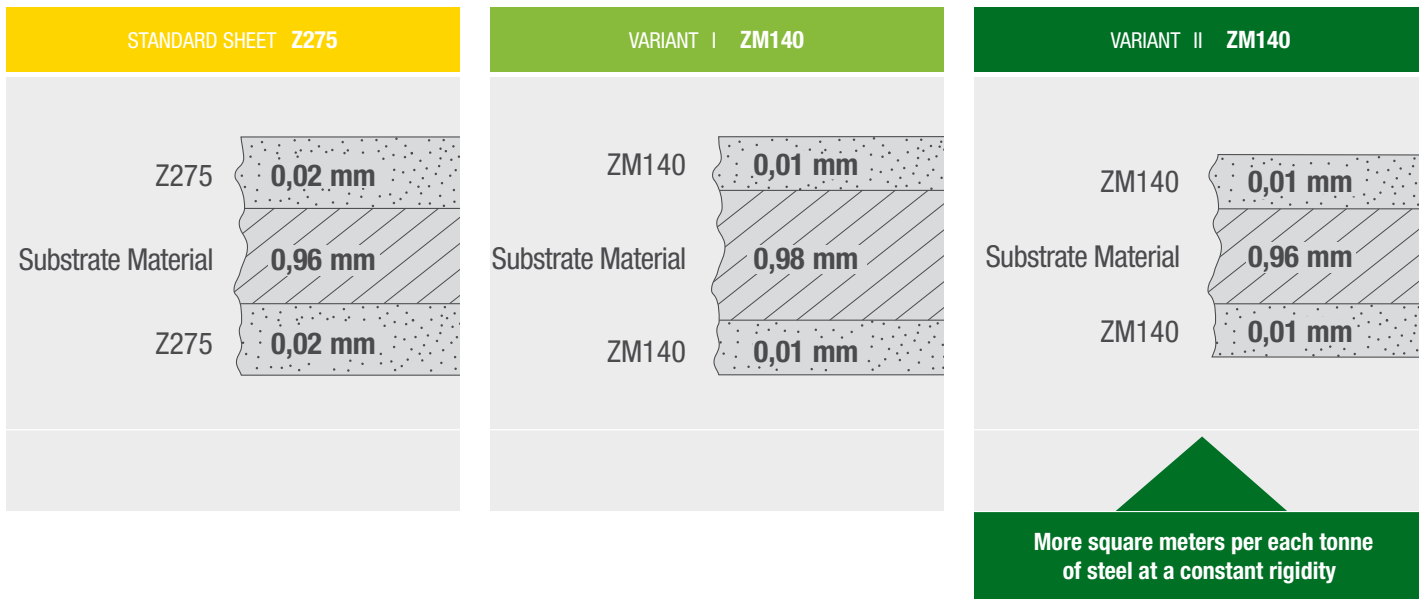
### Stroncoat® – view from above

To the naked eye, the different phases of this modern corrosion protection layer are concealed and only visible under the microscope.

## Advantage: More square footage per steel tonnage

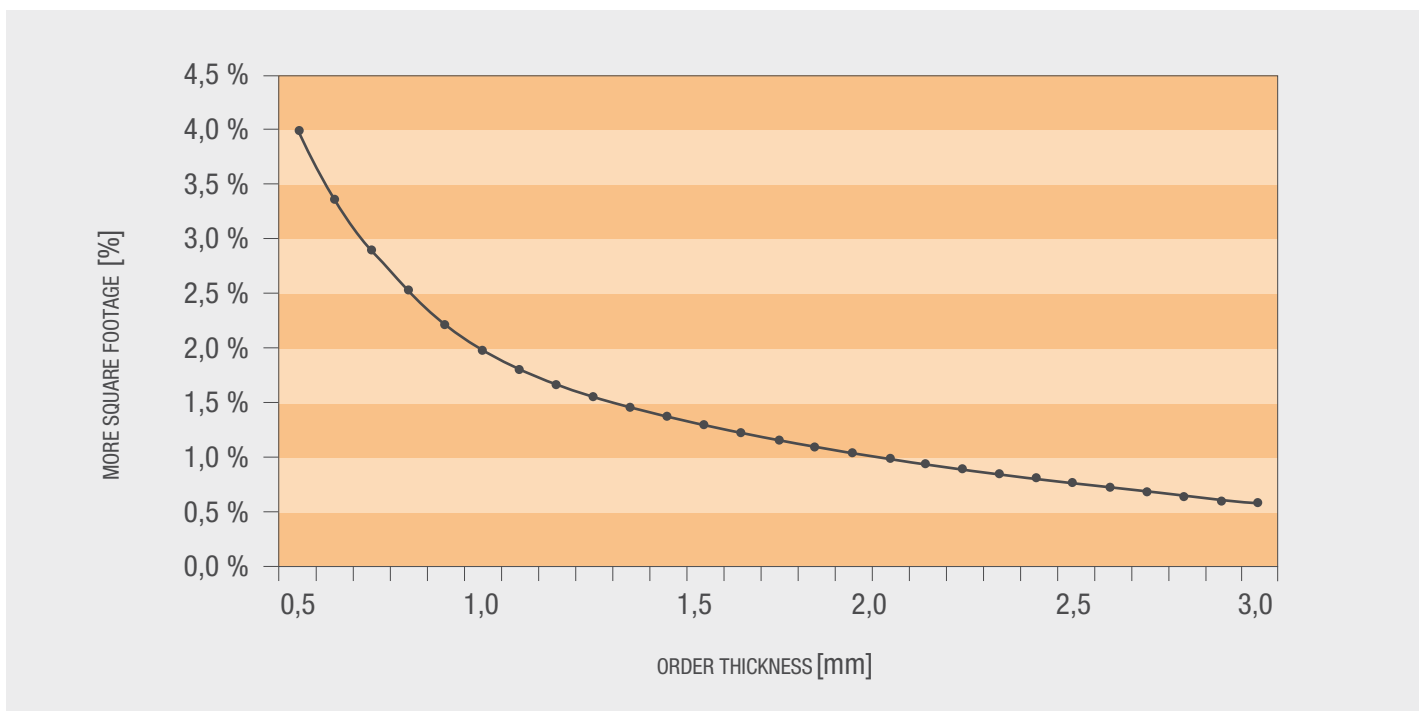
With the same corrosion protection characteristics, there are two opportunities:

- At a constant sheet thickness, thicker carrier material (substrate)
- Thinner sheets on the whole



## More square footage depending on the order thickness

Thanks to the thinner and lighter coating, more square footage per each tonne of material can be produced, depending on the order thickness.



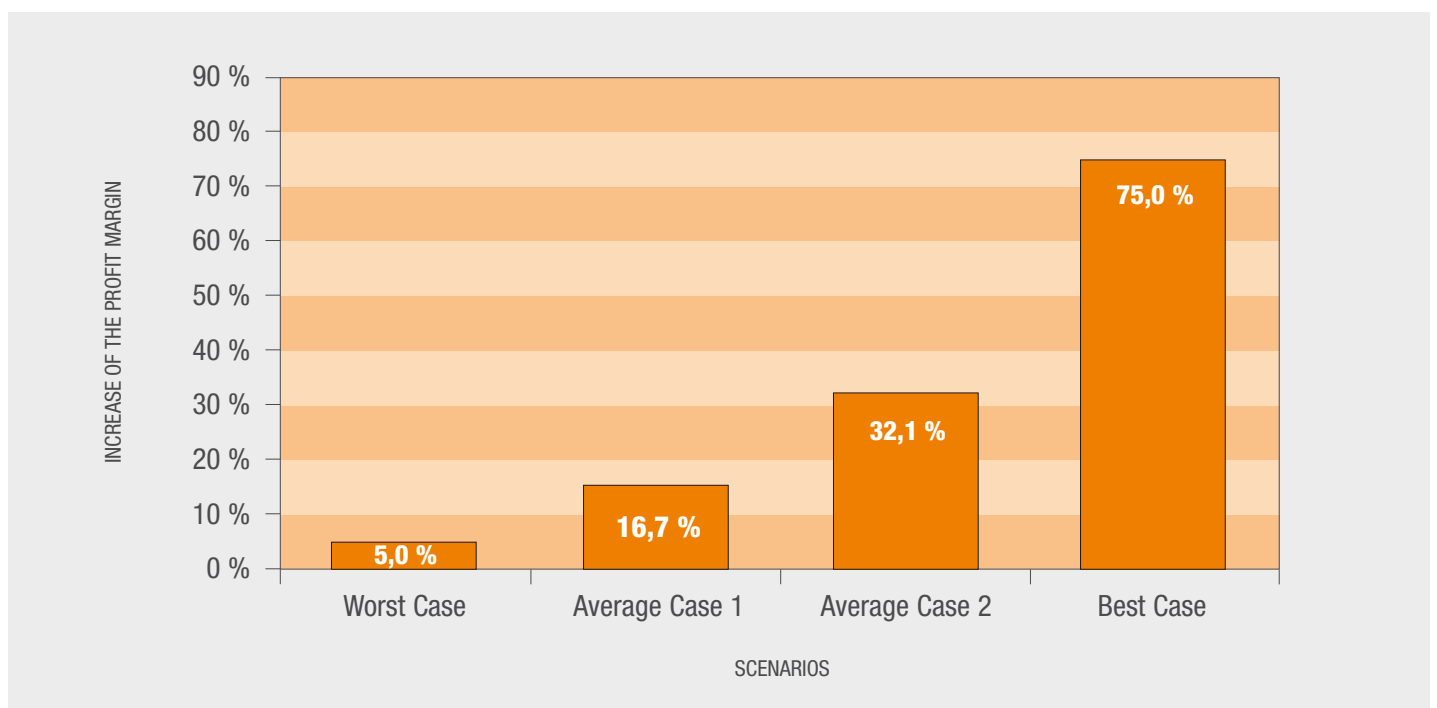
## Use of zinc-magnesium

Thanks to the use of Stroncoat®, the profit margin can be influenced considerably. The higher the influence of the raw material on the profit margin, the more it increases by the use of Stroncoat®

	ASSUMPTIONS			RESULTS VARIANT II			
SCENARIOS	Customer's cost proportion for steel	Customer's profit margin	Square footage surplus Stroncoat®	Cost proportion Stroncoat®-Steel	Contribution to the profit margin	New profit margin with Stroncoat®	Increase of the profit margin
<b>Worst Case</b>	50 %	10 %	1 %	49,5 %	0,5 %	10,5 %	5,0 %
<b>Average Case 1</b>	67 %	8 %	2 %	65,3 %	1,3 %	9,3 %	16,7 %
<b>Average Case 2</b>	75 %	7 %	3 %	72,8 %	2,3 %	9,3 %	32,1 %
<b>Best Case</b>	75 %	4 %	4 %	72,0 %	3,0 %	7,0 %	75,0 %

## Increase of the customer's profit margin by using Stroncoat®

Without any changes to the working process, there is an advantage of more material in a better quality at the same price.



## Processing properties

### • Stroncoat® – Response to forming processes

Friction values are a decisive factor in terms of forming response and therefore determine process reliability in component production.

- **Friction value in single-stage forming processes:** Comparable with a hot-dip galvanized (Z) or electrolytic galvanized (ZE) finish
- **Positive friction value in multi-stage forming processes:** No cold welding in contrast to Z or ZE



Forming

### • Stroncoat® – Welding suitability

In addition to laser welding, resistance spot welding still represents one of the primary joining processes employed in body-in-white construction.

- **Resistance spot welding:** Comparable to hot-dip galvanized materials
- **Laser beam welding:** Comparable to hot-dip galvanized materials



Welding

### • Stroncoat® – Varnishing / phosphating

Phosphating as an inorganic conversion layer on the metallic surface is a decisive factor for the subsequent varnishing process. A phosphate layer of appropriate quality facilitates outstanding varnishing results.

- Can be phosphated to suit specific automotive applications
- Varnishing response: identical to materials with hot-dip galvanized finish or electrolytic galvanized finish.



Varnishing

### • Stroncoat® – Immediate benefits

Reduced zinc layer thickness with equivalent corrosion protection properties

- Increased corrosion protection with constant zinc layer thickness
- Alternative to piece galvanizing



Example of use: automotive applications

	Z	ZE	ZM		Z	ZE	ZM
• <b>Zinc adhesion</b>	•	•	•	• <b>Metal forming</b> · Friction	•	•	•
• <b>Corrosion</b> · White rust formation	•	•	+	· Abrasion	•	•	•
· Cutting edge protection	•	•	+	· Tool wear	•	•	•
· Painting system (building ind.)	•	•	+	• <b>Joining</b> · Resistance spot welding	•	+	•
· Painting system (white goods)	•	•	•	· Laser beam welding	•	•	•
				· Adhesive bonding	+	+	•

Z = HDG ZE = electro-galvanized ZM = zinc-magnesium coating

• = equal

+ = better, when compared

Product range Stroncoat® and Folastal Stroncoat®

• <b>Zinc coatings</b>	• ZM 70	• ZM 100	• ZM 140	
• <b>Steel grades</b>	• DX51D+Z	• DX52D+Z	• DX53D+Z	• DX54D+Z
	• S220GD+Z	• S250GD+Z	• S280GD+Z	• S320GD+Z
	• HX220BD	• HX260BD	• HX300BD	
	• other steel grades upon request			
• <b>Surface aspect</b>	• A			
	• B			
• <b>Surface treatment</b>	• Chemical passivation (CrVI-free)			
	• Pre-lube			
• <b>Thickness range [mm]</b>	• 0.40-2.00			
• <b>Width range [mm]</b>	• 900-1,610			

We constantly refine and enhance the delivery programme for Stroncoat® and Folastal Stroncoat®. Please contact our sales people regarding your current requirement.

Special features of Folastal Stroncoat®

The product combines the positive properties of the Folastal® organic surface coating with the extraordinary corrosion protection of Stroncoat®.

- The same advantages “more-square-footage-per-tonne” are valid for Folastal Stroncoat®.
- The composite material benefits from the improved metallic substrate material.
- Organic coating can consist of synthetic resin varnish or plastic dispersions. The product range is rounded off by decorative or protective foil coatings.
- Folastal Stroncoat® varnish and foil coatings provide properties that are tailored to meet the requirements of all central fields of applications.
- The Folastal Stroncoat® coating system is approved by DIBt for applications in light-weight steel construction. Folastal Stroncoat® meets requirements in accordance with corrosion protection class KIII to DIN 55928-8.

(Applies to coating systems with a minimum zinc plating (ZM) density of 140 g/m<sup>2</sup> and a varnish layer thickness of 25 µm.)



Example of use facade cladding

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