

Magnelis®

The harshest environments need the toughest skin protection

Magnelis® is an exceptional, new metallic steel coating providing surface protection in a variety of applications against long-term wear and tear.

This unique coating offers a combination of attributes. Magnelis® provides:

The best corrosion resistance performance; up to 10 times better than galvanised steel

The best suited protection to withstand harsh environments

The most cost-effective alternative to the post-galvanised process

Magnelis® examples of applications



Environmentally friendly



Self-repairing protection for cut edges



Superior corrosion resistance in chloride and ammonia environments



An alternative to the post-galvanising process and to aluminium or stainless

The chemical composition of Magnelis® has been optimised to provide the best corrosion-resistance results.

Magnelis® is produced on a classic industrial hot dip galvanising line, but dipped in a molten bath with a unique metallic chemical composition of zinc with 3.5% aluminium and 3% magnesium. The 3% magnesium is crucial as it creates a stable and durable layer across the entire surface and gives a far more effective corrosion protection than coatings with a lower magnesium content. As such, MekoMag magnelis which is produced from ArcelorMittal's Magnelis® provides significantly superior performance than alternative European products.

Magnelis® has a natural dark grey, spangle-free smooth aesthetic aspect. Magnelis® is available with a standard environmentally friendly E-Passivation® (translucent CrVI-free temporary protection) or can be oiled on request.

Superior corrosion resistance

Nothing offers better protection than Magnelis® in chloride or ammonia environments. Due to its unique chemical composition, Magnelis® provides superior corrosion resistance than standard hot dip galvanised steel.

The destruction of coating that occurs in an ammonia environment is seven times less with Magnelis® than with a standard zinc coating. In addition, Magnelis® guarantees a longer-lasting, active coating protection over time.

Over an eight-month period, a range of metallic coated products were submitted to salt spray tests. The results clearly highlighted the superior corrosion resistance performance of Magnelis® over other metallic coatings. No red rust was observed on the Magnelis® sample.

Self-repairing protection on cut edges

In addition to being fortified by a cathodic protection equivalent to zinc coating, Magnelis® protects exposed cut edges with a thin zinc-based protective film with magnesium, which prevents corrosive reactions. The nature of this film varies depending on the environment and the properties according to the aluminium and magnesium content.

An alternative to post-galvanising and other metals

Magnelis® provides a real advantage over post-galvanised products (with a ZM 310 g/m² coating) and even over high value products such as stainless and aluminium.

Depending on the environment to which it is exposed, Magnelis® delivers a significant coating weight reduction of 2 to 4 times less than post-galvanised products, while still performing significantly better in terms of corrosion resistance and cost-effectiveness.

Environmentally responsible

The application of Magnelis® ensures the preservation of natural resources since it uses less zinc than pure zinc coatings. Magnelis® reduces considerably the zinc runoff in soils.

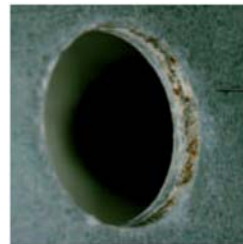
Magnelis®
after 34 weeks



Hot dip galvanised
after 6 weeks



Salt spray test 20 µm coating per side



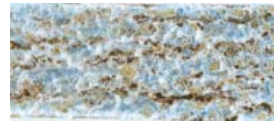
6 months
30-40% red rust
60% white rust



16 months
10% red rust
70% white rust

Outdoor exposure over different time periods of Magnelis® ZM310 with 2 mm thickness in Brest (France)
Marine category C5-M (the most severe) Institut Français de la Corrosion

Post-galvanised
85 µm



Salt spray test 2000 hours
Post-galvanised 85 µm coating

Magnelis®
25 µm



Magnelis® ZM310/25 µm
coating

Thanks to its highly resistant, adherent metallic layer, Magnelis® can be formed in a variety of methods, including bending, drawing, profiling etc. By decreasing the amount of metallic coating, while safeguarding corrosion resistance levels, spot welding is consequently improved.

A protective oxide barrier covers the weld, preventing the development of red rust. Thinner coating facilitates processing and delivers substantial savings. Magnelis® performs three times better than standard galvanised steel, reduces powdering effect and loses less coating weight in processing tools.



Mekomag is made with ArcelorMittal's
Magnelis® self-healing metallic coated steel



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