

ArcelorMittal's prepainted steels: limiting the impact on the environment

Climate change is the key challenge facing the construction industry today. To overcome this challenge, the sector has been working on ways to reduce energy consumption, CO2 emissions and harmful pollutants. **ArcelorMittal, the leading global provider of steel for construction**, is working alongside constructors to come up with new solutions in this field. One of the ways in which ArcelorMittal is doing this is through its innovative products made with prepainted steel.

What is prepainted steel?

Prepainted steel, otherwise known as organic coated or coil coated steel, is a major component of the building and construction sector, where it is used as profiles for cladding, roofing, and tiles, among other applications.

Prepainted steel is generally composed of a steel substrate - cold rolled or with a zinc-based metallic coating- with a surface treatment layer, a paint primer coating and a top coat. For certain applications, a temporary protective film is added. A wide range of organic coatings can be used to provide different levels of durability and performance, or to satisfy different aesthetic requirements.

ArcelorMittal, the world's largest prepainted steel producer, offers a complete range of organic coated steels, compliant with European standard EN 10169, to satisfy all industry sectors. In early 2015, **ArcelorMittal became the first steel producer to be granted the ECCA Premium® Quality and Sustainability label**, which ensures the quality and sustainability of pre-painted metals for outdoor applications.

ArcelorMittal's organic coated steels: the ecological choice

ArcelorMittal's **Nature** range: combining sustainability with unbeatable corrosion resistance

In 2011, ArcelorMittal Europe – Flat Products created the **Nature** collection, a pioneering new range of organic coated steels. 100% sustainable, the **Nature** range uses coatings and surface treatments that are entirely free of hexavalent chromium, phthalates, chromates and heavy metals, dubbed “substances of very high concern” (SVHCs) by EU REACH¹ legislation and due to be phased out in Europe by 2019. ArcelorMittal's Nature collection is also highly effective in terms of corrosion resistance, paint peeling and film integrity, making it the obvious choice of cladding material for buildings in demanding industrial or coastal environments. Six of the products in ArcelorMittal's **Nature** range were awarded the European Coil Coating Association's new 'premium' quality and sustainability label in 2014. ArcelorMittal's **Nature** range includes organic coated steels for both roofing and cladding. They have been awarded the European Coil Coating Association's new 'premium' quality and sustainability label in 2014.

ArcelorMittal's **Estetic® Bio-Air** – free of volatile organic compounds (VOCs)

The **Estetic®** product range, part of ArcelorMittal's Nature collection, has been specifically developed for interior applications, meeting all requirements in terms of aesthetics, flexibility, surface hardness, coating adhesion and corrosion resistance. **Estetic® Bio Air**, a breakthrough prepainted steel for interiors which contains no volatile organic compounds (VOCs), uses a completely organic biological resin to ensure the paint bonds well to the steel substrate. ArcelorMittal formed a government-funded consortium of leading paint suppliers,

¹ REACH: Registration, Evaluation, Autorisation and Restriction of Chemicals

resin producers, solvent designers, and other experts to develop this plant-based paint coating, which has a Health Product Declaration (HPD)² of A+.

Cutting down on zinc with Magnelis® and Optigal®

Some five million tonnes of zinc, a finite resource, are extracted globally each year for the construction industry. ArcelorMittal is exploring ways of reducing the amount of zinc in its products. **Optigal®**, a type of steel designed for use in roofing and cladding, requires about half the amount of zinc to offer the same level of protection, using small amounts of aluminium and magnesium instead.

Equally noteworthy is ArcelorMittal's leading zinc-aluminium-magnesium coating, **Magnelis®**, which demonstrates significantly reduced zinc runoff³ into the soil. Magnelis® became compliant with the EU norm EN 10346:2015 in July 2015, when this European standard was extended to include zinc-aluminium-magnesium coatings. This makes Magnelis® eligible for an increasing number of European applications, including solar support structures, light steel framing in construction, agricultural applications and road infrastructure.

Granite® Storm: where sustainability meets aesthetics

ArcelorMittal's Granite® Storm is part of the ArcelorMittal **Nature** range, which is free of heavy metals and chromates. **Granite® Storm** is a prepainted steel that combines high performance with a beautiful matt finish. Demonstrating the exceptional formability required for roofing and façade designs, Granite® Storm is suitable for most European environments: rural, urban and sunny areas more than 3km from the sea. A guarantee of up to 40 years is granted for building applications. Granite® Storm has outstanding corrosion performance, the result of a combination of optimized metallic and organic coatings, and has been thoroughly tested in laboratories and external marine environments before being brought to market.

² HPD (Health Product Declaration) is a widely-recognized standard complementary to a product's Environmental Product Declaration (EPD). Both standards are widely used in the construction industry.

³ the quantity of zinc washed from the surface by falling rainwater