Environmental product information

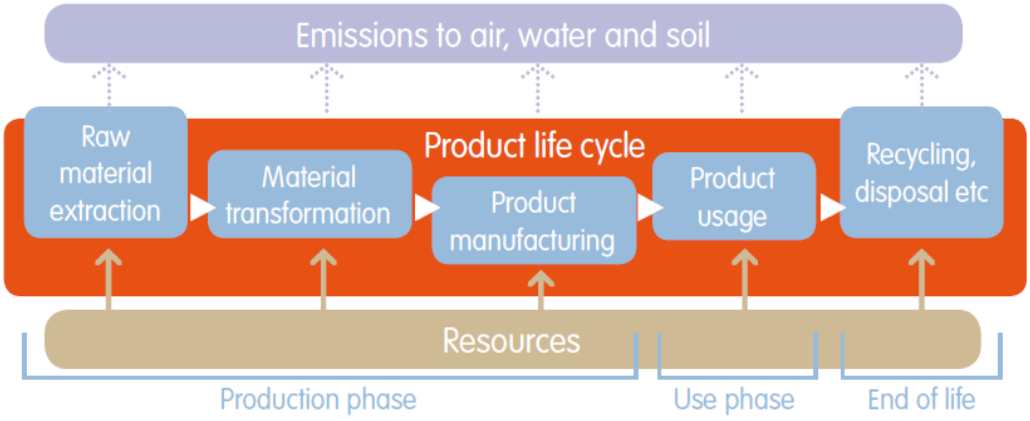
HAIRULTRA

- **Hairultra** is a paint system consisting of a polyester 35µm. **Authentic** is the ideal choice for roof and wall elements with a patinated metal aspect such as zinc, copper, gold….

  Hairultra is recommended in industrial or normal urban environments, in strong sunshine exposure and in marine environments. **Hairultra** is recommended with Hairultra coating on the back side in the Caribbean islands where weather conditions and UV radiation are strong.

Hairultra is produced at ArcelorMittal works from start to finish: from steel making, hot rolling and cold rolling right through to metallic and organic coating on a continuous coil-coating line.

Typical thickness ranges from 0.5 mm to 1.5 mm. The mean surface mass of **Hairultra** is 5 kg/m2.
The purpose of this text is to specify **Hairultra environmental indicators.**
The calculation takes into account all processes from the raw materials – matter and energy – right to the factory gate, including all steps involved in steel coil production. The results include the benefits of steel recycling at the end of the product's life, with a recycling rate for construction products of 85%.



- **Environmental footprint indicators and information**

	Value/kg	Value/m²
Primary energy demand (MJ)	21	105
Global warming contribution (kg CO_2 eq)	1.262	6.308
Air acidification (kg SO_2 eq)	0.004297	0.021486
Water eutrophication (kg phosphate eq)	0.000373	0.001863

Primary energy demand represents the total amount of energy drawn directly from nature.

Global warming potential represents the contribution of the product to the rise in atmospheric temperature due to human activities.

Acidification occurs when the product contributes to the acidification of rain, causing damage to vegetation and forests.

Eutrophication occurs when surface waters are artificially enriched with pollutants such as phosphated compounds, creating disruption of the biological balance.

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Specific flows

Emissions to air	Value/kg	Value/m²
Total particulates (kg)	0.000906	0.004531
Nitrogen oxides (kg)	0.002562	0.012812
Sulphur oxides (kg)	0.002411	0.012055
Volatile organic compounds (kg)	0.000302	0.001511
Methane (kg)	0.001714	0.008568

- Total particulates is the total amount of solid particles, including PM10 and PM2.5, emitted into the air. Almost half of these are emitted in blast furnace upstream processes.
- Nitrogen oxides are mainly emitted by transportation steps (bulk materials by sea) and also by blast furnace upstream processes.
- Sulphur oxides have electricity production as the major contributor. Emission levels are improved by on-site recycling of the process gases and by exporting the surplus to power plants replacing fossil fuel demand.

Emissions to water	Value/kg	Value/m²
Chemical oxygen demand (kg)	0.000509	0.002547
Suspended matter (kg)	0.000708	0.003540

- Chemical oxygen demand (COD) is commonly used to indirectly measure the amount of organic compounds in water. It is a useful indicator of water quality.
- Suspended matter in water comes mainly from hot rolling operations, due to the extensive use of water for cooling and de-scaling. This water is then routed to treatment facilities.

Raw materials	Value/kg	Value/m²
Coal (kg)	0.253292	1.266461
Iron (kg)	0.412710	2.063550
Limestone (kg)	0.035592	0.177960
Natural gas (kg)	0.136190	0.680952
Oil (kg)	0.050175	0.250874

Certification

•ArcelorMittal Construction Contrisson plant is ISO 14001-compliant.

•World Steel data inventories have been carried out in compliance with the ISO 140xx series and peer-reviewed by an independent party.

About recycling

•The present information is given for an 85% recycling rate, which represents the lowest threshold in the construction sector. New calculations can be provided with the actual recycling rate or any specific rate when available. The actual rate can in fact reach 95% in some cases.

•The benefits of end-of-life steel recycling in a closed loop material chain are taken into account: credit is given based on 1 kg of coated sheet and corresponds to the reduced amount of raw materials and primary energy needed when this kg of steel is recycled to produce new steel products. To ensure proper comparative studies, it is recommended that the recycling phase should be included in the calculation. The World Steel Association provides a methodology for this.

Indirect benefits

Using steel products for construction has indirect benefits, including:

•Storage on the construction site is minimised because coated sheets can be sized to the right dimensions in the forming plant and only the required quantities are delivered.

•Assembling steel parts is quick and performed using a dry process; no dust is emitted and no water is consumed on site.

•At the end of the building's life, steel parts are easily disassembled and go to recycling or even reuse, thereby reducing environmental footprint.

Service life

Prepainted coated steel has been used very successfully for many years. The service life of prepainted steel for roofing and cladding depends on the climatic conditions where the product is used. In an outdoor environment, it has an aesthetic and cosmetic life approaching 40 to 50 years if regularly inspected and maintained. This can be extended even further by undertaking and completing any required specific maintenance such as repainting.

Reference

Worldwide LCI Database for Steel Industry Products, www.worldsteel.org