

XCarb™ & EcoSheetPiles™ Plus

ArcelorMittal Belval & Differdange S.A

Certification Number	4939
Effective Date	16 December 2021
Expiration Date	15 December 2023

The following products are included within the scope of certificate 4939:

XCarb™ recycled and renewable produced describes structural steel sections and merchant bars made of 100% scrap via the EAF route that plugs into renewable electricity, either directly or through verified certificates. The carbon footprint of XCarb™ sections presents a carbon footprint of 333 kg CO₂-Eq./t of finished steel.

The base material of XCarb™ structural steel sections and merchant bars is iron. Alloying elements are added in the form of ferroalloys or metals (most common elements are Manganese and Silicon). No substances listed on the “Candidate List of Substances of Very High Concern for Authorisation” by the European Chemicals Agency EC 1907-2006 are contained in the steel in declarable quantities.

The main requirements of the standards regarding the mechanical characteristics and the chemical composition of the available structural steel grades are given hereafter:

- Non-alloy structural steels according to EN 10025-2
- Weldable fine grain structural steels according to EN 10025-4
- Structural steels with improved atmospheric corrosion resistance according to EN 10025-5
- Steel grades according to American standards ASTM
- Steel grades according to Russian standards GOST
- Steel grades according to Chinese standards GB/T

XCarb™ recycled and renewable produced structural steel sections and merchant bars are mainly used in construction (e.g. buildings, industrial halls and bridges): columns, frames, floor systems, bridge girders and cross beams and composite structures among others.

EcoSheetPiles™Plus are produced at the ArcelorMittal sites Differdange and Esch-Belval in Luxembourg from ca. 100% scrap in an electric arc furnace route and are 100% reusable and recyclable. The types of EcoSheetPile™Plus available are: Z-shaped, U-shaped, straight-web, and H-shaped. The carbon footprint of EcoSheetPile™Plus presents a carbon footprint of 370 kg CO₂-Eq./t of finished steel.

The base material of EcoSheetPiles™ Plus is iron. Alloying elements are added in the form of ferroalloys or metals (the most common elements are Manganese and Silicone). Steel sheet pile products according to EN 10248 are non-alloy steel products. The chemical composition of the sheet piles depends mainly on the steel grade.

No substances listed on the "Candidate List of Substances of Very High Concern for Authorisation" by the European Chemicals Agency EC 1907-2006 are contained in the steel in declarable quantities.

Dimension tolerances, construction data, as well as mechanical and chemical data as well as mechanical and chemical properties are given hereafter:

- European standards EN 10248-1, EN 10248-2
- ASTM international standards ASTM A572, ASTM A6
- Canadian standard association (CSA) CSA 260W, CSA 300W, CSA 350W

Sheet piles show a high-pressure resistance and can support massive height of soil with a small quantity of steel compared to the applied loads. Main applications are quay walls, breakwaters in harbors, bank reinforcement on rivers and canals, pumping stations, bridge abutments, retaining walls for underpasses or underground car parks, impervious containment walls, temporary cofferdams in land and in water, containment barriers, and load bearing foundations.