# ENVIRONMENTAL PRODUCT DECLARATION

EN

**Programme:**
The International EPD® System
www.environdec.com

**Programme operator:**
EPD International AB

**EPD registration number:**
EPD-IES-0014496

**Publication date:**
2024-10-10

**Valid until:**
2029-06-05

*An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com*

In accordance with ISO 14025:2006

## TUBULAR STRUCTURES FOR SCAFFOLDING

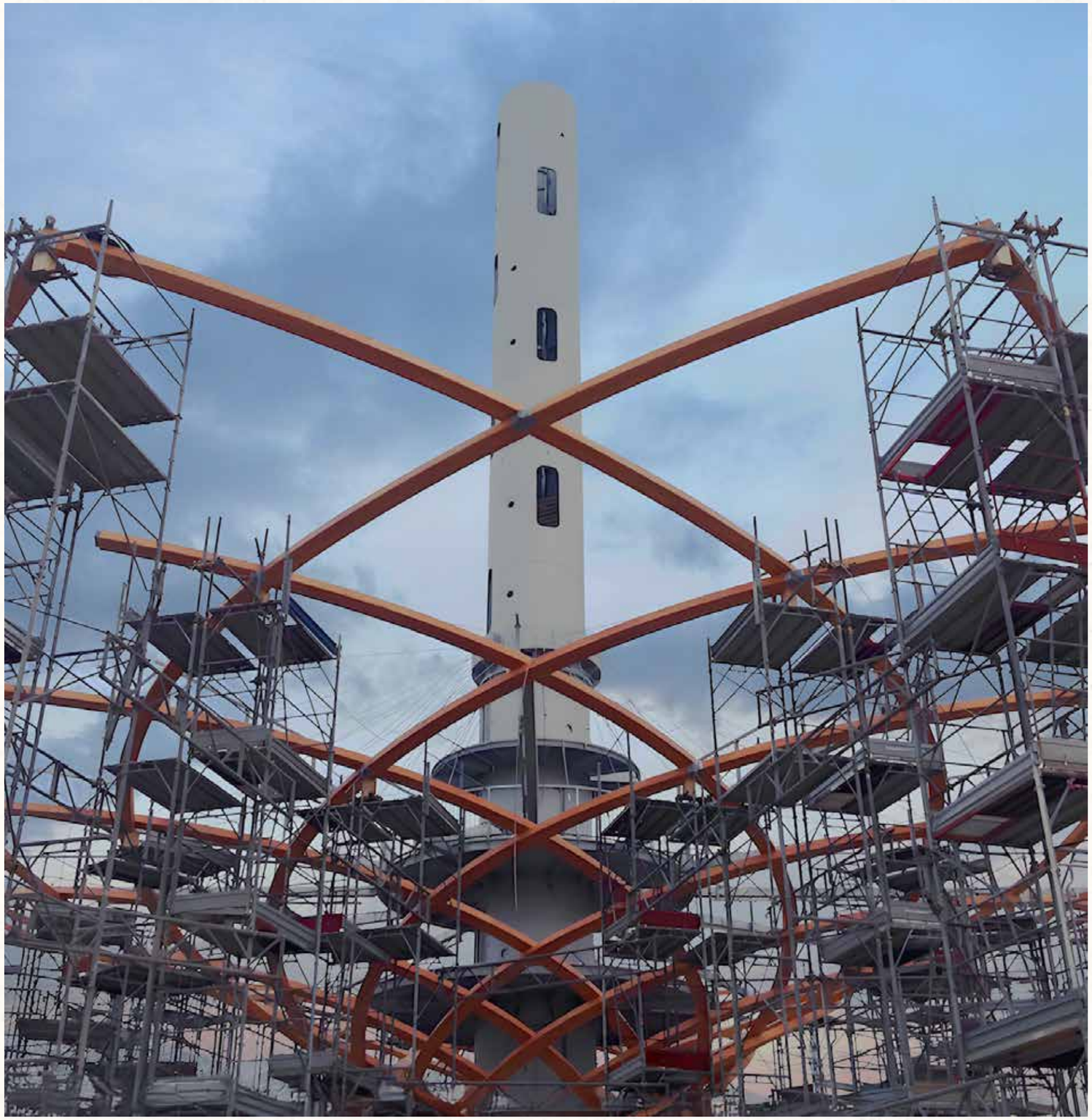
From

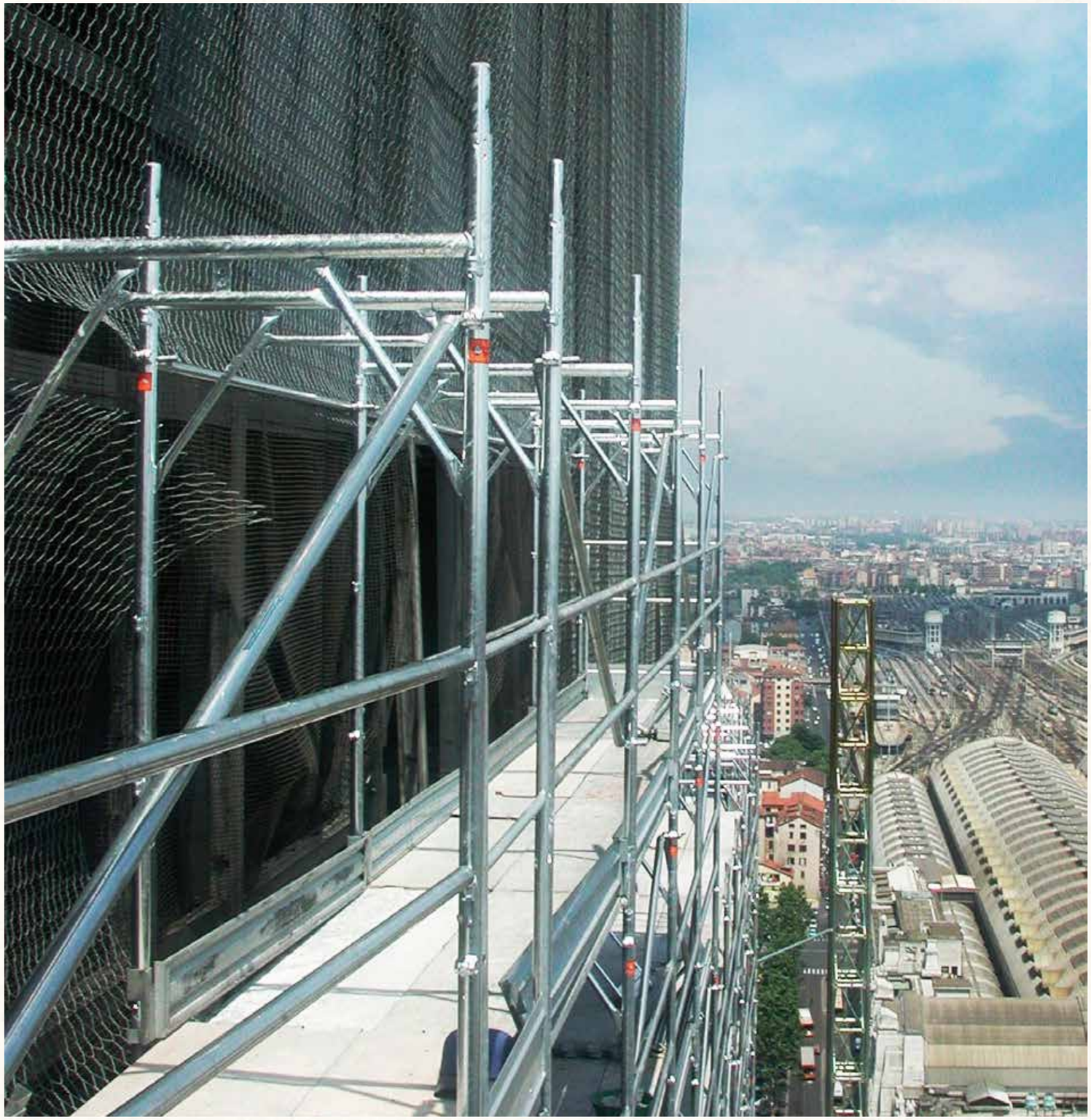
**Marcegaglia Buildtech S.r.l.**

MARCEGAGLIA BUILDTECH

ECO PLATFORM EPD VERIFIED

EPD®
THE INTERNATIONAL EPD® SYSTEM





# General information

## PROGRAMME INFORMATION

| | |
|---|---|
| **Programme:** | The International EPD® System |
| **Address:** | EPD International AB<br>Box 210 60<br>SE-100 31 Stockholm<br>Sweden |
| **Website:** | www.environdec.com |
| **E-mail:** | info@environdec.com |

**PCR, LCA and third party independent verification responsibilities**

**Product Category Rules (PCR)**
*"Fabricated metal products except construction products"* 2023:01 - versione 1.0.2
UN CPC 412, 414, 416, 42

The review of the PCR was conducted by:
*The Technical Committee of the International EPD System. Review chair: Hüdai Kara – Contact via the secretariat www.environdec.com/contact*

**Life Cycle Assessment (LCA):**
*LCA Responsibility: Marcegaglia Buildtech Srl – MADE HSE Srl*

**Third-party verification:**

Independent third-party audit of the declaration and the data, according to ISO 14025:2010, via:

☒ EPD verification by an accredited certification body

Third-party verification:
*Bureau Veritas is an approved certification body and responsible for third party verification.*
The certification body is accredited by*: Accredia, accreditation number 00009VV*

The procedure for data control during the validity of the EPD requires the intervention of a third-party verifier.
☒ Yes ☐ No

The owner of the EPD has the exclusive ownership and legal and moral responsibility of the EPD.

EPDs belonging to the same product category but registered in different EPD programmes may not be comparable. In order for two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on PCR or fully aligned PCR versions; cover products with identical functions, technical performance and use (e.g. identical declared/ functional units); have equivalent system boundaries and data descriptions; apply equivalent data quality requirements, data collection methods and assignment methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content statements and be valid at the time of comparison. For further information on comparability, refer to ISO 14025. .

## COMPANY INFORMATION

**Owner of the EPD:**
Marcegaglia Buildtech S.r.l.
factory in Graffignana (LO) - Italy

**Contact:**
cantieristica@marcegaglia.com
Tel. + 39 0371-20681

**Description of the organisation:**
Marcegaglia Buildtech Srl - Graffignana (LO) plant – is a Marcegaglia Group company specializing in the construction of scaffolding systems for civil and industrial construction sites, starting from a supply chain of semi-finished and finished products in quality steel.

The wide range of products offered includes multi-directional systems in galvanised steel, prefabricated frames, shoring systems, pipe-joint system and a wide assortment of steel boards for the construction of scaffolding in the civil and industrial sectors.

**Product-related or management system-related certifications:**

- Quality management system conforming with the requirements of standard UNI EN ISO 9001:2015 (Certificate no. ICIM-9001-000725-08 ICIM SpA);
- Environmental management system conforming with the requirements of standard UNI EN ISO 14001:2015 (Certificate no. EMS-262/S-9G, RINA Services SpA);
- Occupational health and safety management system conforming with the requirements of standard UNI ISO 45001:2018 (certificate no. OHS-260-19G, RINA services SpA);
- Energy management system conforming with the requirements of standard UNI CEI EN ISO 50001:2018 (Certificate no. EnergyMS-137-10G, RINA Services SpA);
- Social responsibility management system conforming with the requirements of standard SA 8000:2014 (Certificate no. SA-2040, RINA Services SpA);
- Product Carbon Footprint Management System - CFP Systematic Approach compliant with the requirements of ISO 14067:2018 (certificate no. IT330357 - 1, Bureau Veritas Italia SpA);
- Product certificates in accordance with scheme SC009 (certificate no. P021, IGQ);
- Product conformity certificates complying with the requirements of standard EN 12810-1_2003; EN12811-1:2003 (certificates no. 01421.1 - 01422.1 - 01423.1 - 01424.1, ICECON CERT);
- UL Certification (Certificate no. UL-US-2415915-0, UL Solutions)
- GOST Certification (Certificate no. 0039282, TOO GC TECHSERT).

**Name and location of production site:**

- Marcegaglia Buildtech S.r.l. – factory in via S. Colombano 63 - 26813 Graffignana (LO) - Italy.

## PRODUCTS INFORMATION

**Product name:**
Tubular structures for scaffolding.

**Product identification:**
Tubular structures for scaffolding.

**Product description:**
Tubular structures for steel scaffolding, protected with galvanizing finishing, which constitute the frame of the scaffolding systems “pipe-joint”, “prefabricated frames” and “multidirectional system with prefabricated uprights and crosspieces”. The tubular structures can be classified into frames, braces, diagonals, uprights, crosspieces, parapets, shelves, headboards, shelf struts, carriage beams, joists and runs.

**UN CPC code:**
UN CPC 4219 - Other structures (except prefabricated buildings) and parts of structures, of iron, steel or aluminium.

**Geographical scope:**
Worldwide





## LCA INFORMATION

**Functional unit / declared unit:**
The functional unit of the system considered is 1 ton of product (1000 kg).

**Reference service life (RSL):**
Not applicable for this product type.

**Time representativeness:**
The data used is representative of the year 2023

**Database and software used:**
Ecoinvent database v.3.10, March 2024 / Software used SimaPro rel. 9.6.0.0.

**System Diagram:**
The study is “ Cradle to gate” (reference: PCR 2023:01 vers.1.0.2).

**Description of system boundaries:**
Upstream processes include the extraction and production of raw materials for all the main parts and components of the product.

The “core” processes include the transport of the raw material from the place of production to the factory where it is processed, the production processes, the assembly of the product, the production of waste during the production phase and the packaging of the finished product.

**Phases of the life cycle excluded:**
Since the field of application is cradle-to-gate, all downstream processes are excluded from the study.

You can consult the technical data sheets and the quality and conformity certifications of the products on the website www.marcegagliabuildtech.com.

**Additional information:**
The construction of tubular steel structures for the “pipe-joint”, “prefabricated frames” and “multidirectional system” scaffolding systems involves the processes described below:

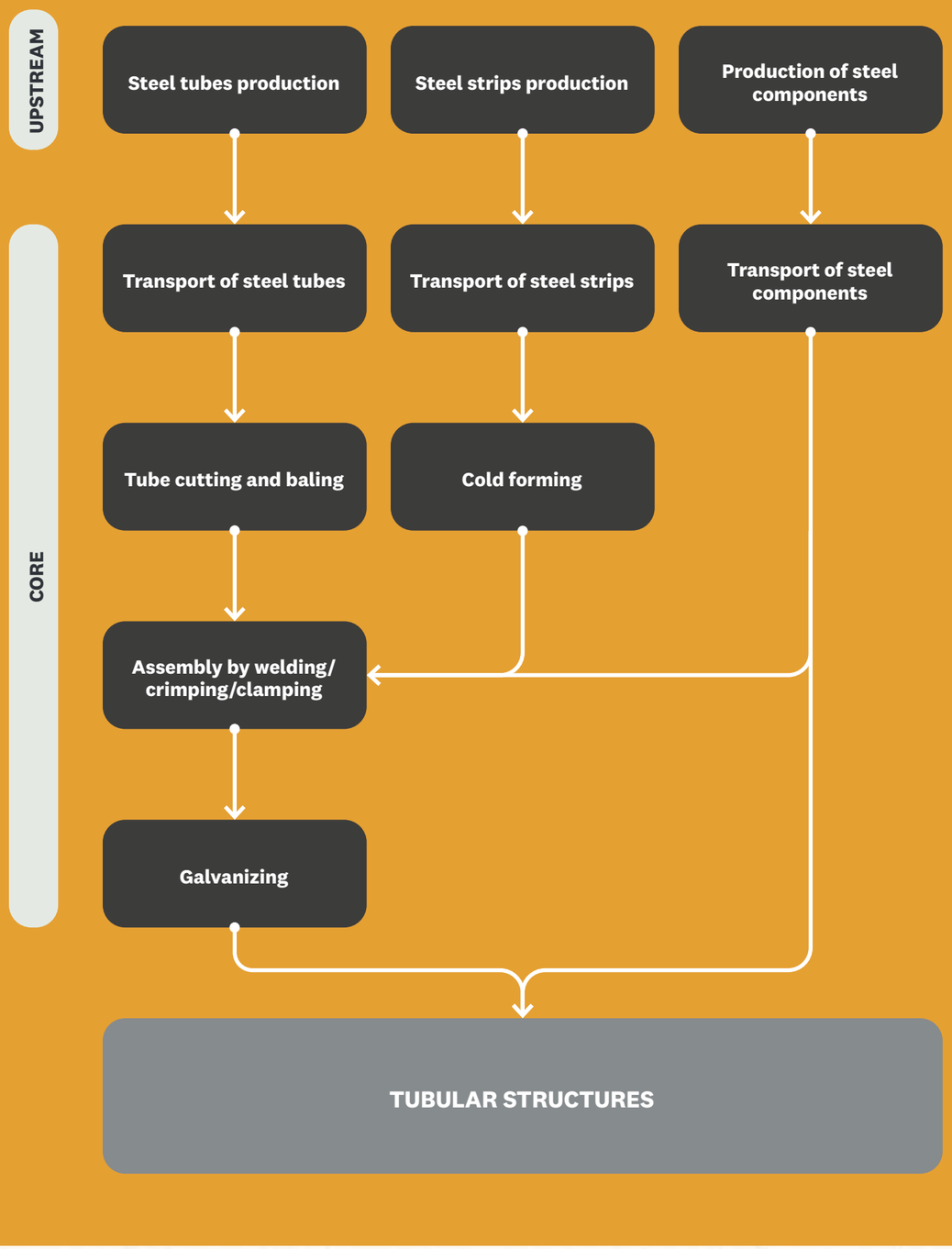
- **Pipe cutting and pressing**: the pipes are cut to different sizes compatible with the type of component/element they must constitute.
- **Cold forming**: steel strips are moulded to produce connecting elements that will be welded or clinched or crimped to the tubular structures.
- **Assembly by welding/clenching/crimping**: cut tubes and moulded elements can be welded or clenched or crimped together to produce components or elements.
- **Galvanizing**: the tubular structures, depending on the type, can be subjected to hot-dip galvanizing at external galvanizing company.

The $CO_2$ emissions released from the processing of raw materials, consumables and machining are included in the study.

The criteria chosen for the initial inclusion of input and output elements is based on the definition of a cut-off level of 1%, in terms of environmental relevance.

Emissions to air, soil, water, waste from production processes have been included in the LCA. Where specific factory data is not available, allocation was made on a mass basis.

**SYSTEM DIAGRAM:**








# Content Declaration

| Product components | kg | % | Environmental/hazardous characteristics |
|---|---|---|---|
| Steel | 1000 | 100 | n/a |

The product does not contain hazardous substances from the Candidate List of Substances of Very High Concern (SVHC) with concentrations greater than 0.1% by weight (w/w).

## PACKAGING

**Packaging for distribution:**
the product is distributed using metal straps and wooden/pallet strips.

**Consumer packaging:**
not relevant for this product category.

## RECYCLED MATERIAL

**Origin of recycled materials (pre-consumer or post-consumer) present in the product:**
consumer steel with which the product is made contains approximately 20.1% recycled material.

| Product component | Weight, kg | Post-consumer material, weight-% | Biogenic material, weight-% and kg C/kg |
|---|---|---|---|
| Steel | 1000 | 20.1 | 0 |

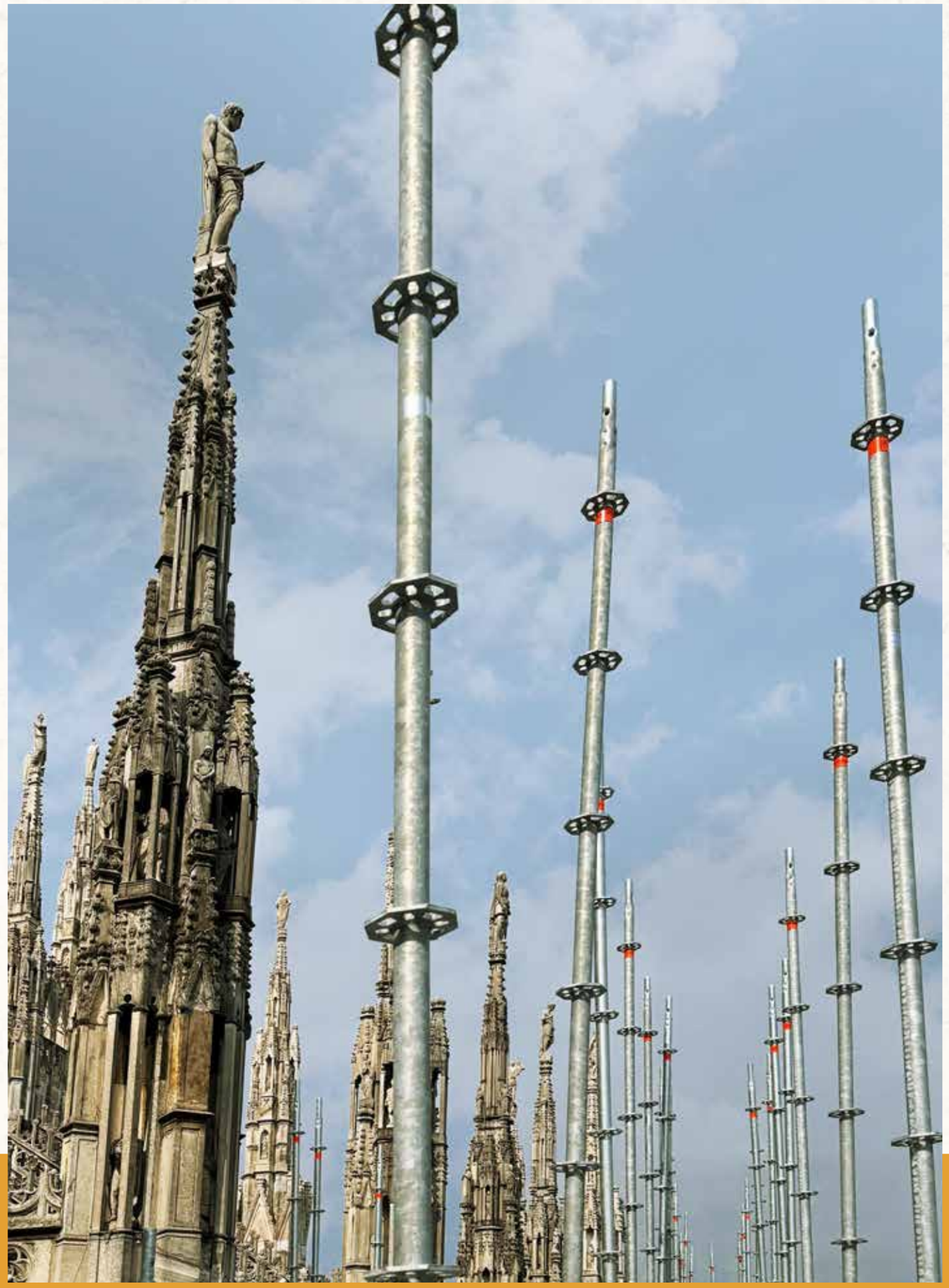
Tubular structures
for scaffolding

# Results of the environmental performance indicators

## CATEGORY INDICATORS

| Parameter | | Unit | Upstream | Core | TOTAL |
|---|---|---|---|---|---|
| Global Warming Potential (GWP) | Fossil resources | kg $CO_2$ eq. | 2.72E+03 | 1.60E+02 | 2.88E+03 |
| | Biogenic | kg $CO_2$ eq. | 1.84E+00 | 1.59E+00 | 3.43E+00 |
| | Land use and land transformation | kg $CO_2$ eq. | 1.80E+00 | 1.77E-01 | 1.98E+00 |
| | TOTAL | kg $CO_2$ eq. | 2.73E+03 | 1.62E+02 | 2.89E+03 |
| Ozone Depletion Potential (ODP) | | kg CFC 11 eq. | 3.64E-05 | 3.63E-06 | 4.00E-05 |
| Acidification (AP) | | mol H + eq. | 1.20E+01 | 8.96E-01 | 1.29E+01 |
| Eutrophication (EP) | Freshwater ecosystem | kg P eq. | 1.20E+00 | 5.69E-02 | 1.25E+00 |
| | Marine ecosystem | kg N eq. | 2.67E+00 | 2.02E-01 | 2.87E+00 |
| | Terrestrial ecosystem | mol N eq. | 2.99E+01 | 2.28E+00 | 3.22E+01 |
| Photochemical Ozone Creation Potential (POCP) | | kg NMVOC eq. | 2.62E+01 | 7.31E-01 | 2.69E+01 |
| Abiotic Depletion Potential (ADP)* | Non-fossil | kg Sb eq. | 3.77E-02 | 1.95E-02 | 5.72E-02 |
| | Fossils | MJ | 2.94E+04 | 2.31E+03 | 3.18E+04 |
| Water Depletion Potential (WDP)* | | $m^3$ world eq. deprived | 5.87E+02 | 5.42E+01 | 6.41E+02 |

* Disclaimer: The results of this environmental impact indicator should be used with caution, as the uncertainties of these results are high or experience with the indicator is limited



## CONSUMPTION OF RESOURCES

| Parameter | | Unit | Upstream | Core | TOTAL |
|---|---|---|---|---|---|
| Primary - Renewable energy sources | Use as an energy carrier | MJ, net calorific value | 8.96E+02 | 2.29E+02 | 1.13E+03 |
| | Used as raw materials | MJ, net calorific value | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | TOTAL | MJ, net calorific value | 8.96E+02 | 2.29E+02 | 1.13E+03 |
| Primary – Non-renewable energy sources | Use as an energy carrier | MJ, net calorific value | 3.07E+04 | 2.30E+03 | 3.30E+04 |
| | Used as raw materials | MJ, net calorific value | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | TOTAL | MJ, net calorific value | 3.07E+04 | 2.30E+03 | 3.30E+04 |
| Secondary resources | | kg | 1.13E+02 | 1.03E+02 | 7.72E-01 |
| Renewable secondary fuel | | MJ, net calorific value | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Non-renewable secondary fuel | | MJ, net calorific value | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Net use of fresh water (optional) | | $m^3$ | 1.03E+01 | 1.03E+01 | 4.50E+00 |

## WASTE PRODUCTION

| Parameter | Unit | Upstream | Core | TOTAL |
|---|---|---|---|---|
| Hazardous waste | kg | 5.78E+00 | 1.55E+00 | 7.32E+00 |
| Non-hazardous waste | kg | 4.46E-01 | 6.53E-02 | 5.11E-01 |
| Radioactive waste | kg | 8.57E-02 | 2.48E-02 | 1.11E-01 |

## OUTFLOWS

| Parameter | Unit | Upstream | Core | TOTAL |
|---|---|---|---|---|
| Reuse components | kg | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Materials for recycle | kg | 2.74E+02 | 5.85E-01 | 2.75E+02 |
| Materials for energy recovery | kg | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Exported energy-electrical energy | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Exported energy-electrical energy | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 |





# Additional information

The element that has the greatest impact on the final result is the steel entering the plant used in the manufacturing of the product.

The impacts of energy consumption determined by the processes carried out within the company boundaries are marginal compared to the impact associated with the supply of the raw material.

## MANAGEMENT SYSTEM

The company has adopted an environmental (certified according to UNI EN ISO 14001:2015) and safety (certified according to UNI ISO 45001:2018) management system to support the company's commitment to pursue the continuous improvement of its environmental and safety performance. Within the environmental management system, there is also a special data management procedure to study the life cycle of products. Year after year, the company plans new improvement objectives aimed at increasing its performance.

The company has implemented an energy management system certified in accordance with the standard UNI IEC EN ISO 50001:2018 to identify the most relevant systems in terms of energy as well as defining opportunities for improvement in order to reduce over time the energy consumption determined by the performance of its activity.

# Differences versus previous versions

This is the first publication of this EPD.

# Reference

General Programme Instructions of the International EPD® System. Version 4.0.

PCR 2023:01. Fabricated metal products except construction products" - version 1.0.2

Ecoinvent database v.3.10 – March 2024;

UNI EN ISO 14025:2010 "Environmental labels and declarations - Type III environmental declarations - Principles and procedures";

UNI EN ISO 14040: 2021 "Environmental management - Life cycle assessment - Principles and framework";

UNI EN ISO 14044:2021 "Environmental management - Life cycle assessment - Requirements and guidelines";

MARCEGAGLIA BUILDTECH

*Registered seat:*
Via Bresciani, 16 - 46040
Gazoldo degli Ippoliti MN

*Main offices and plant:*
Via S. Colombano 63 - 26813
Graffignana (LO) - Italy
Phone +39 0371 20681
cantieristica@marcegaglia.com
www.marcegagliabuildtech.com

ECO PLATFORM EPD VERIFIED

EPD®

THE INTERNATIONAL EPD® SYSTEM

www.evirondec.com