

Environmental Product Declaration



In accordance with ISO 14025:2006 for:

Bolted steel storage tank

from

SIA “MB Holding”



Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
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Programme information

Programme:	<p>The International EPD® System</p> <p>EPD International AB Box 210 60 SE-100 31 Stockholm Sweden</p> <p>www.environdec.com info@environdec.com</p>
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Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
PCR: <i>PCR 2023:01 Fabricated metal products, except construction products (1.0.1), 2023-05-19 and UN CPC code 422.</i>
PCR review was conducted by: The Technical Committee of the International EPD® System. See www.environdec.com/TC for a list of members.
Life Cycle Assessment (LCA)
LCA accountability: <i><name, organization></i>
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:
<input checked="" type="checkbox"/> EPD verification by individual verifier
Third-party verifier: <i>Elisabet Amat, GREENIZE.</i>
Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third-party verifier:
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
EPDs within the same product category but from different programmes may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison.
The EPD owner has the sole ownership, liability and responsibility of the EPD

Company information

Owner of the EPD: SIA "MB Holding", +371 66101128, mbholding@mbholding.lv, "Doras", Eimuri, Adazu novads, LV-2164, Latvia, EU

Description of the organisation: SIA MB HOLDING is registered in Latvia and was founded in 2012. We have become the leading company in the region, which provides solutions for aboveground storage tanks. SIA MB HOLDING is the only company in the Baltic region that offers a full production cycle for galvanised steel tanks.

SIA MB Holding produce and build water storage tanks worldwide for:

- Water storage
- Wastewater/processing water/rainwater
- Fire water
- Land based aquaculture / fishing industry
- Golf and leisure
- Biomass/slurry
- Green energy & biogas
- Industrial water storage tanks for solar farms
- Flexible pvc storage tanks

The company works globally and offer such services: tank design and production, supervision globally, tank construction and project management, tank damage repair.

SIA MB Holding annually invests in the company's development as well as in the development of export markets. We are looking to become one of the leading tank producers in Europe in the near future. We take an individual approach to each project and offer comprehensive technical support. One of the company's guidelines is: flexibility in the realisation of each order; as a result, we are able to ensure a very fast lead-time and high quality. This has led us to receive good references from several of our partners.

SIA MB Holding owns such certification: ISO9001; EN1090-ISO3834.

Name and location of production site: MB Holding, "Doras", Eimuri, Adazu novads, LV-2164, Latvia, EU

Product information

Product name: Bolted steel storage tanks

Product identification: Product plate with serial number, production date, storage tank dimensions, project number.

Product description: A bolted steel storage tank is composed of rolled steel tank panels that are connected together via bolted connections to

form a vertical cylinder used for the storage of liquid and dry bulk materials.

UN CPC code: 422 - Tanks, reservoirs and containers of iron, steel or aluminium

HS code 73090030

Geographical scope: Worldwide

LCA information

Declared unit: 1 ton of Steel metal tank installed at the customer site.

Reference service life: 50 years

Time representativeness: The data used for the LCA calculation correspond to the year 2022.

Database(s) and LCA software used: The LCA for the EPD development was performed in SimaPro 9.5 with Ecoinvent 3.9.1 and ELCD when necessary.

Description of system boundaries: cradle-to-gate.

Excluded lifecycle stages: The downstream processes have been omitted as the energy consumption at the use phase is highly uncertain as is subject to changes depending on the customer geographical location, physico-chemical properties of stored fluid, and other customer choices.

Data quality: The foreground data was collected internally, considering the latest available average production amounts and measures during the last year. Data regarding waste processes and scenarios were taken from waste scenarios for Europe contained in Ecoinvent 3.9.1.

The quality level is good according to the UN Environment Global Guidance criteria on LCA database development. Data is geographically representative as it comes from the area of study. It is technically representative as it comes from processes and products under study using the same state of technology defined in goal and scope. According to the documentation, it is also time representative as

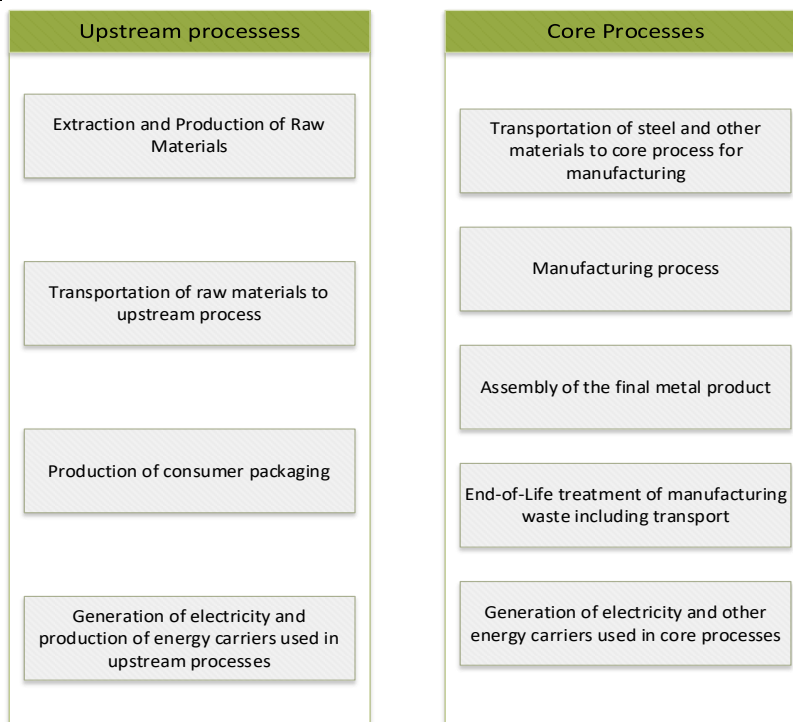
data was collected less than three years between the reference year.

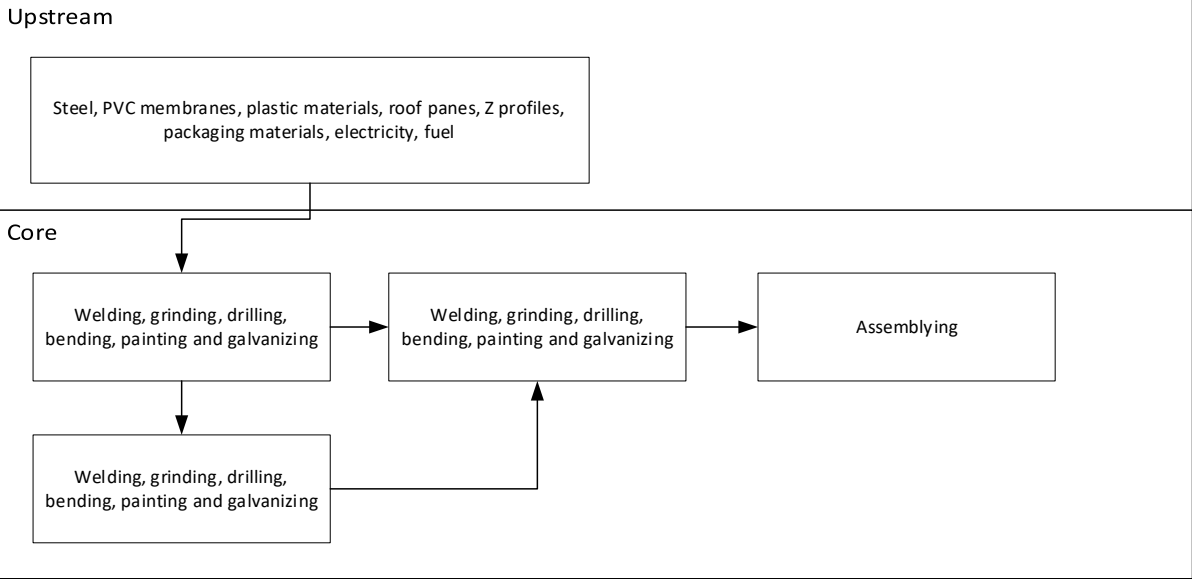
Cut-off criteria: All primary raw materials and processes have been considered. Only less than 1% of total material and energy flows were potentially excluded, and less than 5% of materials and energy per module.

Allocation: The PCR 2023:01 recommends that allocation among products and co-products should be avoided when possible. Allocation among co-products has been avoided, as only one product results from the operations considered within the scope. However, following physical criteria, energy, and material flows have been allocated to the declared unit.

More information: This EPD has been developed using the EN15804 + A2 (adapted for SimaPro substances) impact assessment method. The reference for the characterisation factors (CF) are based on version 3.1 of the reference package for CFs used in the PEF framework (EF 3.1), instead of the previous version (EF 3.0).

System diagram:





Content declaration

Product components	kg	%	Environmental / hazardous properties
Steel	490 - 500	49 - 50 %	NA
Cast iron	4 – 7	0.4 – 0.7 %	NA
Reinforced steel	255 - 270	25.5 - 27 %	NA
Coated Steel	45 - 46	4.5 – 4.6 %	NA
Rubber parts	2 – 3	0.2 - 0.3 %	NA
PVC membrane	25 - 30	2.5 - 3.0 %	NA
Polyurethane foam	100 – 110	10 - 11 %	NA
Expanded polystyrene	55 - 56	5.5 – 5.6 %	NA
Paint powder	1 – 2	0.1 – 0.2 %	NA
Galvanized steel	4 – 5	0.4 – 0.5 %	NA
Total	1000	100 %	-

No dangerous substances from the Candidate List of Substances of Very High Concern (SVHCs) for authorization with concentrations higher than 0.1% weight by weight (w/w) are contained in the product.

Recycled material declaration: It is assumed that a 26 % of recycled steel is contained in the steel material content in the final product according to typical values for steel manufacturers in Europe.

Packaging

Distribution packaging: The packaging materials for the transport of the semi-finished structure to the customer site consists of Wooden boxes, compostable packaging film, paper and steel straps.

Consumer packaging: After the installation in the customer site, no packaging accompanies the product.

Results of the environmental performance indicators

Impact category indicators

Results per declared unit				
Indicator	Unit	Upstream	Core	TOTAL
GWP-fossil	kg CO ₂ eq.	2.85E+03	4.44E+02	3.30E+03
GWP-biogenic	kg CO ₂ eq.	0.00E+00	0.00E+00	0.00E+00
GWP-luluc	kg CO ₂ eq.	2.56E+00	8.25E-01	3.39E+00
GWP-total	kg CO ₂ eq.	2.85E+03	4.45E+02	3.30E+03
ODP	kg CFC 11 eq.	1.17E-04	8.40E-06	1.25E-04
AP	mol H ⁺ eq.	1.32E+01	1.79E+00	1.50E+01
EP-freshwater	kg P eq.	1.66E-01	9.25E-03	1.75E-01
EP-marine	kg N eq.	2.90E+00	5.63E-01	3.46E+00
EP-terrestrial	mol N eq.	2.73E+01	6.04E+00	3.34E+01
POCP	kg NMVOC eq.	1.56E+01	2.20E+00	1.78E+01
ADP-minerals&metals*	kg Sb eq.	1.47E-02	4.90E-04	1.52E-02
ADP-fossil*	MJ	4.23E+04	6.20E+03	4.85E+04
WDP*	m ³	1.07E+03	3.65E+01	1.11E+03
Acronyms	<p>GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption</p>			

Resource use indicators

PARAMETER		UNIT	Upstream	Core	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	2.4E+03	4.4E+02	2.84E+03
	Used as raw materials	MJ, net calorific value	1.8E+03	2.2E+02	2.04E+03
	TOTAL	MJ, net calorific value	4.2E+03	6.7E+02	4.86E+03
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	4.2E+04	6.2E+03	4.85E+04
	Used as raw materials	MJ, net calorific value	2.5E+00	3.8E-01	2.86E+00
	TOTAL	MJ, net calorific value	4.2E+04	6.2E+03	4.85E+04
Secondary material (optional)		kg	1.3E+00	0.0E+00	1.29E+02
Renewable secondary fuels (optional)		MJ, net calorific value	0.0E+00	0.0E+00	0.00E+00
Non-renewable secondary fuels (optional)		MJ, net calorific value	0.0E+00	0.0E+00	0.00E+00
Net use of fresh water (optional)		m ³	2.2E+01	1.8E+00	2.40E+01

Waste indicators (optional)

PARAMETER	UNIT	Upstream	Core	TOTAL
Hazardous waste disposed	kg	1.5E-01	3.0E-02	1.78E-01
Non-hazardous waste disposed	kg	8.6E+02	6.7E+01	9.31E+02
Radioactive waste disposed	kg	5.4E-02	1.5E-02	6.87E-02

Output flow indicators (optional)

PARAMETER	UNIT	Upstream	Core	TOTAL
Components for reuse	kg	0.0E+00	0.0E+00	0.0E+00
Material for recycling	kg	0.0E+00	4.1E+01	4.1E+01
Materials for energy recovery	kg	0.0E+00	0.0E+00	0.0E+00
Exported energy, electricity	MJ	0.0E+00	0.0E+00	0.0E+00
Exported energy, thermal	MJ	0.0E+00	0.0E+00	0.0E+00

Additional environmental information

RESPONSIBILITY FOR INSPECTION, TESTING, MAINTENANCE, AND IMPAIRMENT

1.1 The property owner or designated representative shall be responsible for the proper inspection, testing, maintenance, and impairment management of water – based fire protection system.

- 1.2 Inspection, testing, maintenance, and impairment procedures shall be implemented in accordance with the manufacturer instructions.
- 1.3 Only authorized and qualified personnel shall perform inspection, testing, maintenance, and impairment procedures.
- 1.4 Qualified personnel shall meet at least one of the following qualifications:
 - 1.4.1 Meets the requirements and training for a given field acceptable to the authority having jurisdiction.
 - 1.4.2 Is certified by a nationally recognized fire protection certification organization acceptable to the authority having jurisdiction.
 - 1.4.3 Is registered, licensed, or certified by a state or local authority to perform inspection, testing, and maintenance of water-based fire protection systems.
- 1.5 Correction and repairs shall be performed by qualified personnel.
- 1.6 Freeze Protection. The property owner or designated representative shall ensure that water-filled piping is maintained at a minimum temperature of 4°C (40°F) unless an antifreeze solution is applied.
- 1.7 Aboveground water-filled pipes that pass through open areas, cold rooms, passageways or other areas exposed to temperatures below 4°C (40°F), protected against freezing by insulating coverings, frost proof casing, listed heat tracing systems, or other reliable means.
- 1.8 Manufacturer's Corrective Actions. Manufacturers shall be permitted to make modification to their own product in the field with listed devices that restore the original performance as intended by the listing, where acceptable to the authority having jurisdiction.
- 1.9 Reports shall be made for all inspections, tests, and maintenance of the system and its components.

GUIDELINE AND PROHIBITIONS AFTER TANK ERECTION

- 1.10 Assembly works are organized by manufacturer's authorized supervisor or otherwise agreed in the contract.
- 1.11 Tank fill-up can be started only after supervisor's notice of finished works and inside of the tank is cleared of unnecessary items.
- 1.12 It is first filled up to one meter and left for observation for 24 hours observation. If in that period of time leakage has not been detected, filling can be continued till its functional level.
- 1.13 After the tank has been filled to its functional level, it should be left for another 24-hour observation. If in that period of time leakage has not been detected, tank is fully operational.

It is **prohibited** to allow unauthorized personnel perform **any kind of work** without manufacturer's notice.



Information related to Sector EPD

This is an individual EPD.

Differences versus previous versions

This document is the first version of this EPD

References

- General Programme Instructions of the International EPD® System. Version 4.0.
- PCR 2023:01 Fabricated Metal products except construction products. Version 1.0
- EN 15804:2012+A2:2019/AC:2021 Sustainability of construction works. Environmental Product Declarations. Core rules for the product category of construction products
- ISO 14040:2006: Environmental Management-Life Cycle Assessment-Principles and Framework
- ISO 14044:2006/Amd 2:2020 Environmental management. Life Cycle Assessment. Requirements and guidelines
- ISO 14025:2010 Environmental labels and declarations. Type III environmental declarations. Principles and procedures
- Ecoinvent v3.9.1 Database
- Central Product Classification (CPC), Version 2.1
- Environmental Product Declaration Type III No. 109/2020 – BALEXMETAL Sandwich panels with polyurethane foam core
- Environmental Product Declaration Type III Thermal insulation material from TENAPORS. EPD registration number: S-P-07794
- Environmental Product Declaration Type III Hot rolled Strip from Tibnor AB. EPD registration number: S-P-02042

