# ENVIRONMENTAL PRODUCT DECLARATION

## IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

Cement products

MCT AB


**EPD HUB, EPDHUB-0157**

Publishing date 21 October 2022, last updated date 21 October 2022, valid until 21 October 2027

Created with One Click LCA

# GENERAL INFORMATION

## MANUFACTURER

| | |
|---|---|
| Manufacturer | MCT AB |
| Address | Storängsgatan 6, 744 32 Heby |
| Contact details | michael@mctcement.se |
| Website | https://mctcement.se/ |

## EPD STANDARDS, SCOPE AND VERIFICATION

| | |
|---|---|
| Program operator | EPD Hub, hub@epdhub.com |
| Reference standard | EN 15804+A2:2019 and ISO 14025 |
| PCR | EPD Hub Core PCR version 1.0, 1 Feb 2022 |
| Sector | Construction product |
| Category of EPD | Third party verified EPD |
| Scope of the EPD | A1-A3 |
| EPD author | Goodpoint AB: Anna Ouchterlony, Olivia Gewert, Anna Persson |
| EPD verification | Independent verification of this EPD and data, according to ISO 14025:<br>☐ Internal certification ☑ External verification |
| EPD verifier | N.C, as an authorized verifier acting for EPD Hub Limited |

The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

## PRODUCT

| | |
|---|---|
| Product name | MCT cement products |
| Additional labels | M10 Avjämning grov, M20 Avjämning fin, M60 Fiber snabb fin, M80 Fiber snabb grov, M85 Projekt, M92 Industry, Laga vägg and Slipsats snabb |
| Product reference | - |
| Place of production | Heby, Sweden |
| Period for data | 2020 |
| Averaging in EPD | Multiple products |
| Variation in GWP-fossil for A1-A3 | 30 % |

## ENVIRONMENTAL DATA SUMMARY

| | |
|---|---|
| **Declared unit** | 1 kg |
| **Declared unit mass** | 1 kg |
| **GWP-fossil, A1-A3 (kgCO2e)** | 0,175 |
| **GWP-total, A1-A3 (kgCO2e)** | 0,138 |
| **Secondary material, inputs (%)** | 0,216 |
| **Secondary material, outputs (%)** | 0,0 |
| **Total energy use, A1-A3 (kWh)** | 0,675 |
| **Total water use, A1-A3 (m3e)** | 0,00211 |

# PRODUCT AND MANUFACTURER

## ABOUT THE MANUFACTURER

MCT uses only the best raw materials, which means that the costs per ton are higher than those of the competitors, but in the end the customers are satisfied and very few complain.

MCT use granulated blast furnace slag in our products, which makes them resistant to water damage and that it has a good viscosity, elasticity and yield strength. The products contain between 20-30% slag.

The factory is located in Heby in the middle of Mälardalen, which means that MCT is located in a strategic position with good logistics solutions for the whole country. Short distances and delivery times are becoming increasingly important and are beneficial for both the customer and the environment. The factory is housed in the premises of an old roof tile factory with a new modern production facility that guarantees high and consistent quality.

## PRODUCT DESCRIPTION

The products are used as pumpable levelling compounds, floor cement and putty. The raw materials for the products are delivered from different suppliers and stored at the raw material storage in the production plant either in sacks or big bags. Some raw materials are delivered in bulk and is then stored in silos in the plant.

The products are produced batch wise where the different raw material is mixed together. The finished products are then either packed in plastic bags, put on wooden pallets, covered by stretched hoods and stored at the plant or delivered directly to the construction site in bulk. The quality of final products is controlled before the sale.

Further information can be found at https://mctcement.se/.

## PRODUCT RAW MATERIAL MAIN COMPOSITION

| Raw material category | Amount, mass- % | Material origin |
|---|---|---|
| Metals | - | - |
| Minerals | 99,17 | Sweden, Europe |
| Fossil materials | 0,83 | Sweden, Asia |
| Bio-based materials | - | - |

## BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate.

| | |
|---|---|
| Biogenic carbon content in product, kg C | 0 |
| Biogenic carbon content in packaging, kg C | 0,010397 |

## FUNCTIONAL UNIT AND SERVICE LIFE

| | |
|---|---|
| Declared unit | 1 kg |
| Mass per declared unit | 1 kg |

## SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any SVHC substances according to Reach in amounts greater than 0,1 % (1000 ppm).

# PRODUCT LIFE-CYCLE

## SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

| Product stage | | | Assembly stage | | Use stage | | | | | | | End of life stage | | | | Beyond the system boundaries | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A1 | A2 | A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D | | |
| x | x | x | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | | |
| Raw materials | Transport | Manufacturing | Transport | Assembly | Use | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | Deconstruction/demolition | Transport | Waste processing | Disposal | Reuse | Recovery | Recycling |

*Modules not declared = MND. Modules not relevant = MNR.*

## MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

The product is a ready-mix cement made from mostly different types of minerals. The raw materials are mainly transported from Europe and a few materials are transported from Asia and South America. The end destination is Heby in Sweden where the factory is located.

The cement is produced by mixing the raw materials all together as a dry blend. The electricity used for the production is renewable. No ancillary materials are used in the production.

The product is packaged in plastic bags made from polyethylene. When prepared for transport the products are stacked on top of each other on a wooden pallet and further emballaged with a plastic polyethylene plastic film to keep them in place.

The product can also be delivered in bulk.

## TRANSPORT AND INSTALLATION (A4-A5)

The transport and installation phase have not been studied in this EPD.

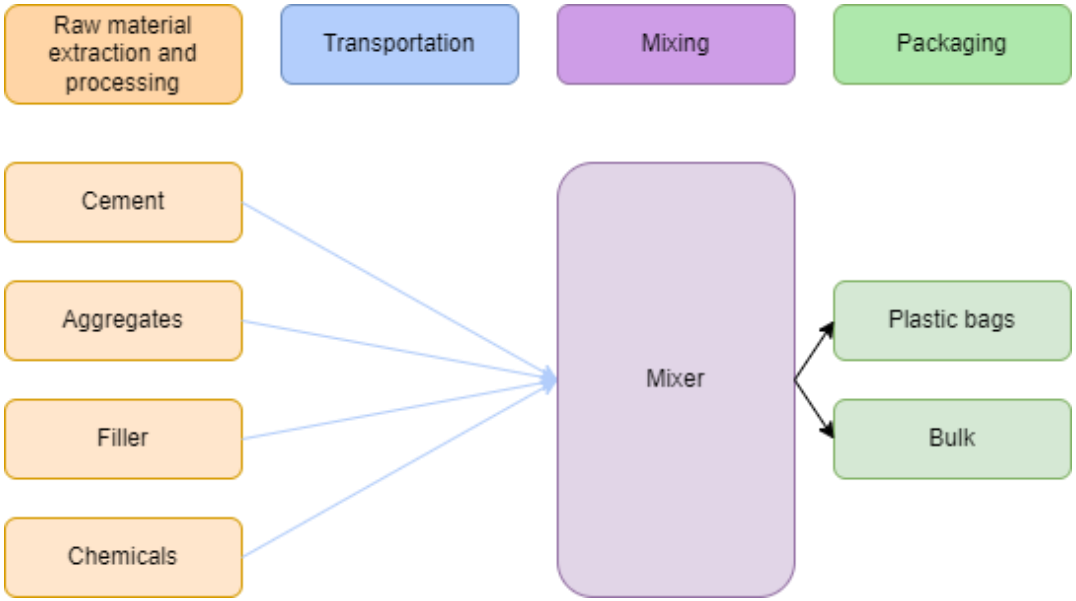
## PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase. Air, soil, and water impacts during the use phase have not been studied.

## PRODUCT END OF LIFE (C1-C4, D)

As the product fullfills the three conditions according to EN 15804:2012 + A2:2019 (the product is integrated with other products during installation, the product is no longer identifiable at the end-of-life stage as it is physically transformed as it is applied and it does not contain any biogenic carbon) the module C1-C4 and module D are not declared in this EPD.

# MANUFACTURING PROCESS



# LIFE-CYCLE ASSESSMENT

## CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

Machines and facilities (capital goods) required for and during the production are excluded as they are assumed to be negligible.

## ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. In this study, as per the reference standard, allocation is conducted in the following order;

1. Allocation should be avoided.
2. Allocation should be based on physical properties (e.g., mass, volume) when the difference in revenue is small.
3. Allocation should be based on economic values.

All products are manufactured with the same manufacturing processes, why energy consumption for the manufacturing facility is allocated equally based the physical properties, namely the produced mass of each product.

In cases where the mode of transport and the Euro-standard of the lorry was missing, the following assumptions were made:
Road transports in Sweden: Euro6
Road transports in Europe: Euro5

Since only life cycle stages A1-A3 are declared, no credits from recycling or energy recovery in end of life or packaging materials are declared.

## AVERAGES AND VARIABILITY

| | |
|---|---|
| Type of average | Multiple products |
| Averaging method | Averaged by shares of total mass |
| Variation in GWP-fossil for A1-A3 | 30 % |

The EPD is an average based on 9 similar products that all are produced through the same manufacturing processes as well as with roughly the same ingredients. The products included in the average are M10 Avjämning grov, M20 Avjämning fin, M60 Fiber snabb fin, M80 Fiber snabb grov, M85 Projekt, M92 Industry, Laga vägg and Slipsats snabb. The average product recipe is calculated based on each products production volume during 2020 and its respective content.

## LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. Ecoinvent and One Click LCA databases were used as sources of environmental data.

# ENVIRONMENTAL IMPACT DATA

## CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

| Impact category | Unit | A1 | A2 | A3 | A1-A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GWP – total[1)] | kg $CO_2e$ | 1,14E-1 | 4,26E-2 | -1,89E-2 | 1,38E-1 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| GWP – fossil | kg $CO_2e$ | 1,13E-1 | 4,26E-2 | 1,94E-2 | 1,75E-1 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| GWP – biogenic | kg $CO_2e$ | 9,09E-4 | 2,15E-5 | -3,84E-2 | -3,75E-2 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| GWP – LULUC | kg $CO_2e$ | 1,03E-4 | 1,65E-5 | 7,25E-5 | 1,92E-4 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| Ozone depletion pot. | kg $CFC_{-11}e$ | 9,63E-9 | 9,85E-9 | 1,43E-9 | 2,09E-8 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| Acidification potential | mol $H^+e$ | 7,36E-4 | 3,55E-4 | 9,65E-5 | 1,19E-3 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| EP-freshwater[2)] | kg Pe | 3,78E-6 | 3,31E-7 | 8,07E-7 | 4,91E-6 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| EP-marine | kg Ne | 1,15E-4 | 8,88E-5 | 2,1E-5 | 2,25E-4 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| EP-terrestrial | mol Ne | 1,33E-3 | 9,86E-4 | 2,37E-4 | 2,56E-3 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| POCP ("smog")[3)] | kg NMVOCe | 3,86E-4 | 2,86E-4 | 9,8E-5 | 7,7E-4 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| ADP-minerals & metals[4)] | kg Sbe | 1,4E-5 | 7,76E-7 | 2,38E-7 | 1,5E-5 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| ADP-fossil resources | MJ | 1,58E0 | 6,22E-1 | 5,36E-1 | 2,74E0 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| Water use[5)] | $m^3e$ depr. | 7,38E-2 | 2,16E-3 | 1,23E-2 | 8,83E-2 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |

## USE OF NATURAL RESOURCES

| Impact category | Unit | A1 | A2 | A3 | A1-A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Renew. PER as energy[8)] | MJ | 9,22E-2 | 7,62E-3 | 1,46E-1 | 2,46E-1 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| Renew. PER as material | MJ | 0E0 | 0E0 | 3,67E-1 | 3,67E-1 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| Total use of renew. PER | MJ | 9,22E-2 | 7,62E-3 | 5,13E-1 | 6,13E-1 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| Non-re. PER as energy | MJ | 1,22E0 | 6,22E-1 | 3,36E-1 | 2,18E0 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| Non-re. PER as material | MJ | 3,77E-1 | 0E0 | 2,01E-1 | 5,78E-1 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| Total use of non-re. PER | MJ | 1,6E0 | 6,22E-1 | 5,36E-1 | 2,76E0 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| Secondary materials | kg | 2,09E-3 | 0E0 | 6,56E-5 | 2,16E-3 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| Renew. secondary fuels | MJ | 2,32E-3 | 0E0 | 0E0 | 2,32E-3 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| Non-ren. secondary fuels | MJ | 5,53E-3 | 0E0 | 0E0 | 5,53E-3 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| Use of net fresh water | $m^3$ | 1,9E-3 | 1,12E-4 | 9,57E-5 | 2,11E-3 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |

*8) PER = Primary energy resources.*

## END OF LIFE – WASTE

| Impact category | Unit | A1 | A2 | A3 | A1-A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hazardous waste | kg | 8,85E-2 | 6,31E-4 | 1,08E-3 | 9,02E-2 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| Non-hazardous waste | kg | 1,57E-1 | 5,11E-2 | 3,01E-2 | 2,38E-1 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| Radioactive waste | kg | 2,78E-6 | 4,28E-6 | 1,73E-6 | 8,79E-6 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |

## END OF LIFE – OUTPUT FLOWS

| Impact category | Unit | A1 | A2 | A3 | A1-A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Components for re-use | kg | 0E0 | 0E0 | 0E0 | 0E0 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| Materials for recycling | kg | 0E0 | 0E0 | 0E0 | 0E0 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| Materials for energy rec | kg | 0E0 | 0E0 | 0E0 | 0E0 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| Exported energy | MJ | 4,79E-4 | 0E0 | 0E0 | 4,79E-4 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |

## ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

| Impact category | Unit | A1 | A2 | A3 | A1-A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Global Warming Pot. | kg $CO_2e$ | 1,1E-1 | 4,04E-2 | 1,85E-2 | 1,69E-1 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| Ozone depletion Pot. | kg $CFC_{-11}e$ | 9,71E-9 | 7,51E-9 | 1,5E-9 | 1,87E-8 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| Acidification | kg $SO_2e$ | 7,14E-4 | 2,51E-4 | 7,68E-5 | 1,04E-3 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| Eutrophication | kg $PO_4^3e$ | 2,56E-4 | 3,44E-5 | 2,7E-5 | 3,18E-4 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| POCP (“smog”) | kg $C_2H_4e$ | 3,02E-5 | 8,97E-6 | 9,04E-6 | 4,82E-5 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| ADP-elements | kg Sbe | 1,4E-5 | 7,76E-7 | 2,38E-7 | 1,5E-5 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |
| ADP-fossil | MJ | 1,58E0 | 6,22E-1 | 5,36E-1 | 2,74E0 | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND | MND |

# VERIFICATION STATEMENT

## VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The digital background data for this EPD

Why does verification transparency matter? Read more online
This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

## THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Neena Chandramathy, as an authorized verifier acting for EPD Hub Limited
21.10.2022

VERIFIED ISO 14025