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# **GU** and **GUL** Cements

### **DECLARED UNIT**

The declared unit for this study is the production of one metric ton (1 t) of portland cement awaiting delivery to a customer. The cement is either packaged and stored on pallets or housed unpackaged in silos and ready for bulk transport.

## SYSTEM BOUNDARY

This EPD describes GU and GUL cement production from cradle-to-gate, as depicted in Figure 1. This includes all modules (A1-A3) of the Production stage, as defined by the PCR. Specifically, Production stage modules capture the following aspects of the life cycle:

Extraction and processing of raw materials to produce cement and packaging where applicable(A1); Transportation of raw materials and packaging from source to cement production site (A2);

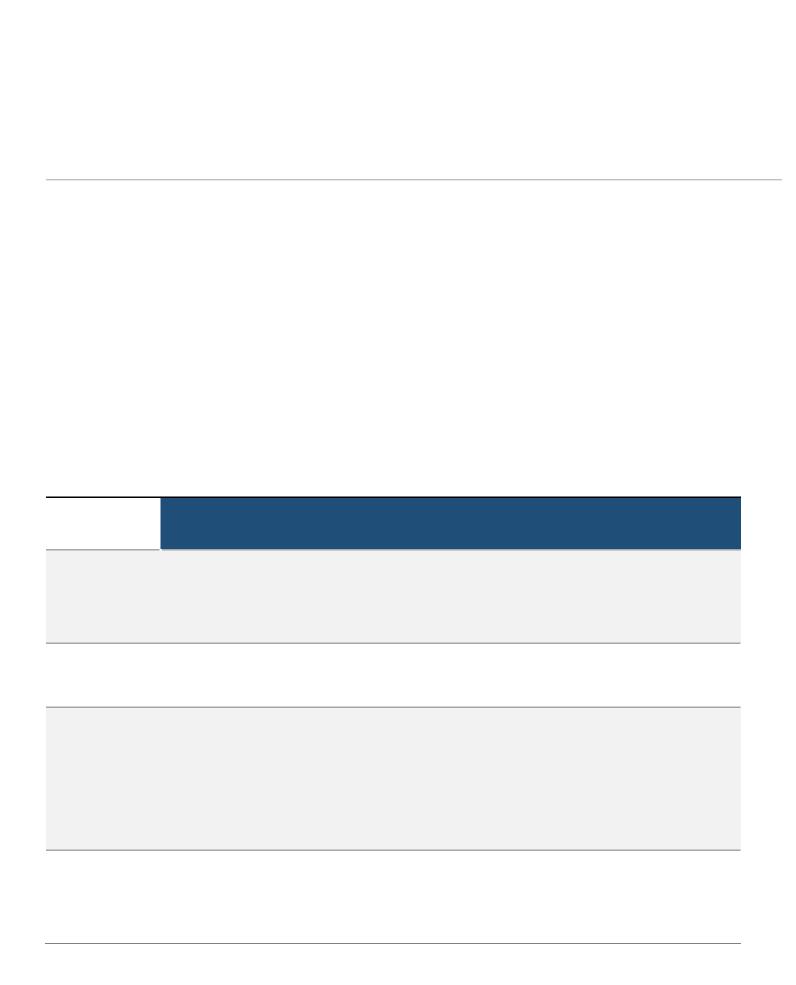
Consumption of energy and water required to produce cement (A3);

Emissions and wastes generated from producing cement(A3);

Transportation of wastes from cement production to end-of-life (A3); and

End-of-life of wastes generated during cement production (A3).

The Construction, Use and End-of-life stages are excluded from the scope of the PCR and therefore from the impact results provided by this EPD.
















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# **GU** and **GUL** Cements

#### REFERENCES

- 1. ASTM General Program Instructions. V.8.0, April 29, 2020.
- 2. Athena Sustainable Materials Institute 2021, Portland Cement Association (PCA) Life Cycle Inventory Summary Report. Prepared by: Mr. Jamie Meil, Mr. Grant Finlayson and Lindita Bushi, PhD, Prepared for: PCA, February 2021.
- 3. Global Cement and Concrete Association (GCCA) 2020. *N.A. version of Industry EPD tool for Cement and Concrete*. <a href="https://concrete-epd-tool.org/">https://concrete-epd-tool.org/</a>.
- 4. GCCA and PCA, GCCA Industry EPD Tool for Cement and Concrete (V3.2), LCA Model, North American version, Prepared by Quantis, November 2021.
- 5. Global Cement and Concrete Association (GCCA) 2021. LCA Database, North American version v3.2, Prepared by Quantis https://demo.gcca.guantis.solutions/
- 6. ISO 14025:2006 Environmental labeling and declarations Type III environmental declarations Principles and procedures.
- 7. ISO 14040:2006/Amd1:2020 Environmental management Life cycle assessment Principles and framework.
- 8. ISO 14044:2006/Amd1:2017/Amd2:2020 Environmental management Life cycle assessment Requirements and quidelines.
- 9. ISO 21930:2017 Sustainability in buildings and civil engineering works Core rules for environmental product declarations of construction products and services.
- 10. NSF International, Product Category Rule Environmental Product Declarations, PCR for Portland, Blended, Masonry, Mortar, and Plastic (Stucco) Cements, v3.2, Sept. 2021.
- 11. NSF International, Product Category Rule Environmental Product Declarations, PCR for Concrete, February 2020.
- 12. Portland Cement Association Environmental Product Declaration Portland Cement, ASTM International, March 12, 2021. \_\_\_\_