

# Environmental Product Declaration

In compliance with ISO 14025 and EN 15804:2012+A2:2019/AC: 2021 for

## Conmix Insubond



| EPD Program                                                                                                                                               | Title               | Details        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------|
| <b>International Climate Intelligence System</b><br>71-75 Shelton Street<br>Covent Garden<br>London, WC2H 9JQ<br>United Kingdom<br>info@climateintell.com | Registration #      | ICIS-202409-69 |
|                                                                                                                                                           | Date of Publication | 22.09.2024     |
|                                                                                                                                                           | Validity            | 21.09.2029     |
|                                                                                                                                                           | Date of Revision    | -              |

The most recent data needs to be provided through an EPD, which may be updated when circumstances change. Thereby the claimed validity is contingent upon ongoing validation at [www.climateintell.com](http://www.climateintell.com)



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## 1.0 PROGRAM INFORMATION

|                                     |                                                                                                                                                                                                                                |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Program</b>                      | International Climate Intelligence System<br>71-75 Shelton Street<br>Covent Garden<br>London, WC2H 9JQ<br>United Kingdom<br>info@climateintell.com                                                                             |
| <b>Product Group Classification</b> | UN CPC 37410                                                                                                                                                                                                                   |
| <b>Product Category Rules (PCR)</b> | PCR 2020:17 Construction products (EN 15804:2012+A2:2019 /AC: 2021) Version 1.2.5 dated 01.11.2022. Cement and Building Lime EN 16908:2017+A1:2022<br><br>EN standard EN 15804 serves as the Core Product Category Rules (PCR) |
| <b>Registration Number</b>          | ICIS-202409-69                                                                                                                                                                                                                 |
| <b>Date of Publication</b>          | 22.09.2024                                                                                                                                                                                                                     |
| <b>Validity Date</b>                | 21.09.2029                                                                                                                                                                                                                     |
| <b>Geographical Scope</b>           | United Arab Emirates                                                                                                                                                                                                           |

## 2.0 INTRODUCTION

This report contains the environmental performance of the manufacturing process of Conmix **Insubond** by Conmix Ltd. This Environmental Product Declaration (EPD) has been developed using the Life Cycle Assessment (LCA) methodology. The environmental impact values calculated are expressed to 1 kg of Conmix **Insubond**.

The assessed life cycle includes all phases in the manufacturing process of Conmix **Insubond** in a “cradle to gate with options” scope. This LCA covers transportation of Raw materials, production, distribution of final product to the customer and end of life stages.

This EPD has been conducted according to the program operator regulations and it has been verified in accordance with the International Climate Intelligence System. The EPD regulation is a system for the international use of Type III Environmental Declarations, according to ISO 14025:2006. Not only the system, but also its applications, is described in the Programmer’s Product Category Rules (PCR). This report has been made following the specifications given in the European standard EN 15804:2012+A2:2019/AC:2021.

### 3.0 COMPANY INFORMATION

CONMIX LTD., a Bukhatir Group company, is a well-established company in the field of manufacture and supply of Ready Mix Plaster & Paints, Construction Chemicals and Water Treatment Solutions in the United Arab Emirates since 1975.

With its headquarters in Sharjah, the company is operating in the United Arab Emirates and abroad with locations in Sharjah, Abu Dhabi, Dubai, Ajman and Ras Al Khaimah.

CONMIX LTD, is a pioneer in the field of Pre Mix Plaster in the UAE. With its dry mortar plants located in at Jabel Ali and Ras Al Khaimah, the company is one of the leading manufacturers in the Middle East. Product range includes Cement Plasters/Renderers, Gypsum Lime Plasters, Decorative Plasters, Acoustic & Insulation Plasters, Tile Adhesives & Grouts, Dry concrete, Mortars and Acrylic Plasters/Coatings. CONMIX LTD. also offers tailor made special products to meet specific project requirements.

#### **Vision**

To be the most trusted supplier of choice that continuously creates new opportunities for growth.

#### **Mission**

To grow as a professionally managed company that inspires its employees to build up and maintain sustainable customer relationships.

#### **Certifications**

Conmix Ltd has achieved the below certifications:

- ISO 9001:2015 – Quality Management System
- ISO 14001:2015 – Environmental Management System
- ISO 45001:2018 – Occupational Health & Safety Management System



## 4.0 PRODUCT INFORMATION

### 4.1 Analyzed Product

The assessed system in this Environmental Product Declaration (EPD) comprises the full life cycle of Conmix **Insubond** by Conmix Ltd in its factory in Dubai, UAE.

### 4.2 Product Details – Physical and Chemical Properties

| Product Specifications    | Details                       |
|---------------------------|-------------------------------|
| Form                      | Granular Powder               |
| Color                     | Grey                          |
| Odour                     | None                          |
| Change in Physical State  | No statement possible         |
| Density                   | 1.6 ± 0.2 kg/Ltr              |
| Wet Density               | 1.75 ± 0.2 kg/Ltr             |
| Viscosity                 | 160mm ± 20                    |
| Vapour pressure, mbar(°C) | NA                            |
| Solubility in water       | Partially soluble             |
| pH                        | 12-13                         |
| Boiling Point, °C         | NA                            |
| Flash Point               | NA                            |
| Ignition temperature      | NA                            |
| Thermal decomposition     | NA                            |
| Explosion limits          | NA                            |
| Compressive Strength      | 10 N/mm <sup>2</sup> @28 days |
| Flexural Strength         | 3 N/mm <sup>2</sup> @28 days  |

### 4.3 Product Application

Conmix **Insubond** is a dry pre mix, thin bed adhesive mortar specially formulated for gluing organic insulation boards against inorganic materials, for use in both internal and external applications.



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## 5.0 LCA INFORMATION

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### 5.1 Declared Unit

The Declared Unit of the Life Cycle Assessments is 1 kg of Conmix **Insubond**.

### 5.2 Time representativeness

Manufacturing facility specific data from Conmix are based on 1 year average for process data (Reference year January to December 2023). The following rules for time scope of data were applied - < 10 years for background data and < 2 years for manufacturer's data.

### 5.3 LCA Software and Database

Version 3.17.4.0 of software Air.e LCA™ with Ecoinvent™ 3.10.0 database has been used for LCA modeling and impacts calculations.

### 5.4 System Boundaries

This EPD covers all product stages from “cradle to gate with options”, i.e this LCA covers Production stage A1-A3, Transportation A4, End of life stages C1-C4 and Resource recovery stage D according to EN 15804 + A2/AC:2021.

The procedures that are not controlled by the company, but are included in this environmental study, are:

- The extraction and production of fuels and electricity.
- The production of the machinery, buildings, and vehicles.

All related direct and indirect environmental impacts related to these elements have been calculated and were included in the LCAs in this EPD.

**Upstream Processes (A1: Raw Material Supply):** Production of the product starts with mainly raw material production and transportation from different parts of the world and some locally sourced. 'Raw material supply' includes raw material extraction before production.

**Core Processes (A2: Transportation):** Transport is relevant for delivery of raw materials to the plant and the transport of materials within the plant. Ordinary Portland cement transported from Sharjah, Dune Sand from Umm Al Quwain/Abu Dhabi, Lime Stone Sand from Fujairah and Chemicals from Germany & China and in our case, the modelling included each raw material's road and sea distances (average values).

**Manufacturing (module A3):** The processes that are included in the manufacturing phase are the loading the raw materials, mixing (specified ratio and mixed), and packaging & wrapping. Electricity and Diesel are consumed in the production process. During the manufacturing process, a small amount of process waste is produced that is reprocessed.

**Transport (module A4):** To create a scenario of the A4 phase, all the products sold from January to December 2023 has been analyzed as representative of the international transport. The transport means 3.5-7.5t & >32t trucks, Euro 6.

| Scenario Details           | Description                      |
|----------------------------|----------------------------------|
| Vehicle used for transport | 3.5-7.5t & >32t trucks, Euro 6.  |
| Vehicle capacity           | 3.5 -7.5 tons and 32 tons        |
| Fuel type and consumption  | Diesel, 0.38 liters per km       |
| Capacity utilization       | 100% as assumed in Ecoinvent     |
| Bulk transportation        | Mass of the transported product. |

#### Dismantling/demolition (module C1)

Demolition of this product is part of the demolition of the building itself. Therefore, it is assumed that the energy used for the demolition of building products has minor significance and the environmental impact of this module is set to be zero.

#### Transportation of demolished items (module C2)

This module considers that 85% of the construction waste is recycled which is taken to a nearby recycling center averaged at a distance of 50 kms in a >32 ton truck and the remaining 15% of the waste is landfilled using the same transportation assumptions.

| Type  | Capacity utilization | Type of vehicle | Average distance |
|-------|----------------------|-----------------|------------------|
| Truck | 75%                  | Euro 3.5-7.5t   | 50 km            |

#### Waste processing (module C3)

Several researches and investigations by industry executives concluded that 85% of construction and demolition waste are to be recycled and about 15% landfilled. The construction waste is commonly recycled to bedding aggregated products used for infrastructure and thus the dataset was modeled to fit this assumption. For the waste processing, an energy consumption of 0.01 kWh of electricity/kg of waste input was calculated.

### Disposal (module C4)

This module represents the 15% of construction waste which is to be disposed of in a landfill.

### Reuse, Recycling, and Recovering Potential (module D)

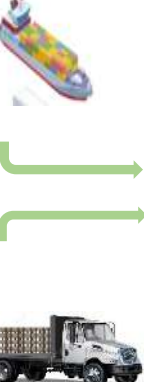
Module D calculates the potential environmental benefits of recycling and reusing the construction and building materials. 85% of the product is assumed to be recycled to bedding aggregated products used for infrastructures of roads, sidewalks, etc. Module D contains credits from the recycling of construction materials in module C3.

### Manufacturing and System Boundaries Diagram

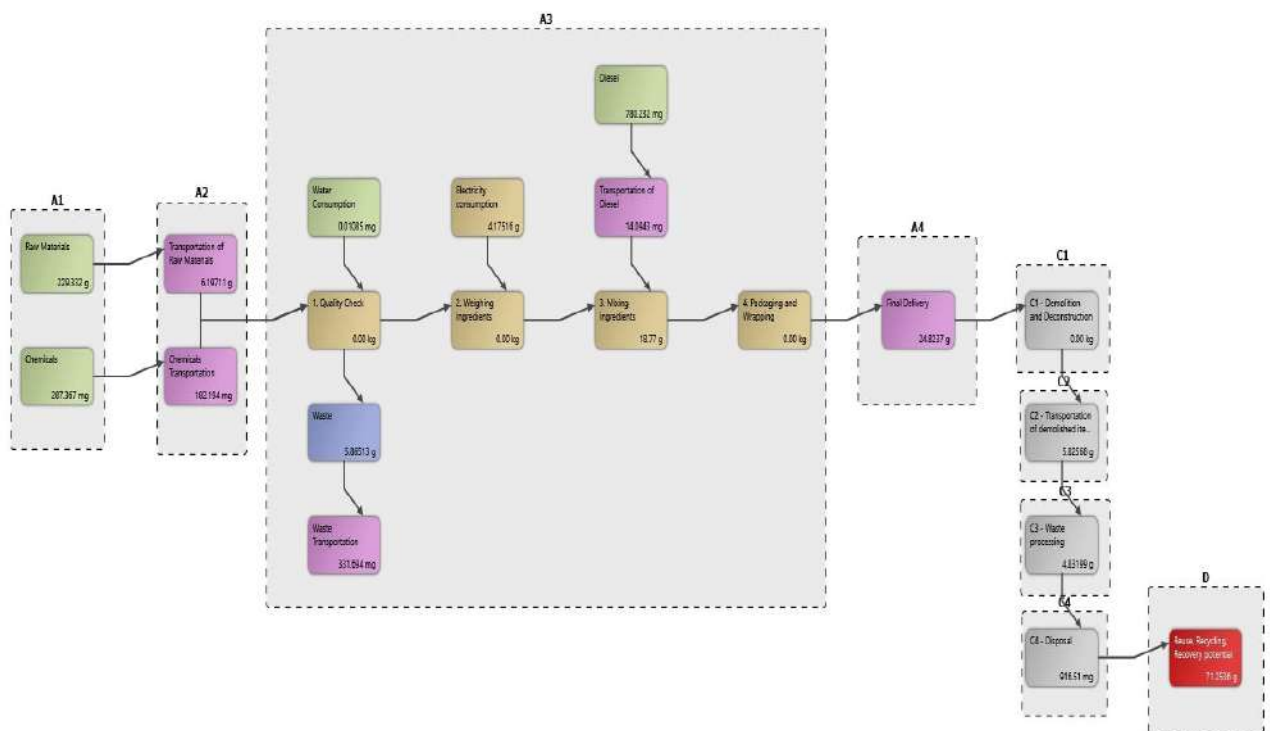
|                      | Production Stage         |           |               |           |                           | Construction Process Stage | Use Stage |             |        |             |               |                        |                       | End of Life Stage          |           |                  |          | Resource Recovery Stage            |
|----------------------|--------------------------|-----------|---------------|-----------|---------------------------|----------------------------|-----------|-------------|--------|-------------|---------------|------------------------|-----------------------|----------------------------|-----------|------------------|----------|------------------------------------|
|                      | Raw Materials            | Transport | Manufacturing | Transport | Construction Installation |                            | Use       | Maintenance | Repair | Replacement | Refurbishment | Operational Energy Use | Operational Water Use | De-construction Demolition | Transport | Waste Processing | Disposal | Reuse Recovery Recycling Potential |
| Module               | A1                       | A2        | A3            | A4        | A5                        |                            | B1        | B2          | B3     | B4          | B5            | B6                     | B7                    | C1                         | C2        | C3               | C4       | D                                  |
| Modules declared     | X                        | X         | X             | X         | ND                        |                            | ND        | ND          | ND     | ND          | ND            | ND                     | ND                    | X                          | X         | X                | X        | X                                  |
| Geography            | GLO                      | GLO       | UAE           | UAE       | -                         |                            | -         | -           | -      | -           | -             | -                      | -                     | GLO                        | GL O      | GLO              | GL O     | GLO                                |
| Specific data        | GWP > 90%                |           |               |           | -                         |                            | -         | -           | -      | -           | -             | -                      | -                     | -                          | -         | -                | -        | -                                  |
| Variation – products | One Product              |           |               |           | -                         |                            | -         | -           | -      | -           | -             | -                      | -                     | -                          | -         | -                | -        | -                                  |
| Variation – sites    | One manufacturing center |           |               |           | -                         |                            | -         | -           | -      | -           | -             | -                      | -                     | -                          | -         | -                | -        | -                                  |

X = Included, ND=Module not declared, NR= Module not relevant

Modules from A5 to B7 are not included (X refers to considered stage; N refers to not relevant stage and ND to not declared stage).

| Scope of this Life Cycle Assessment 'Cradle to Gate with Options'                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| A1<br>Raw Materials<br>Production                                                 | A2<br>Transport raw<br>materials                                                  | A3<br>Manufacture                                                                 | A4<br>Distribution                                                                | End of use Stage<br>(C1-C4)                                                         | Recovering<br>and<br>Recycling (D)                                                  |
|  |  |  |  |  |  |
| Raw Materials                                                                     | Transport from supplier by Road & Sea                                             | Loading, Mixing & packing                                                         | Transport to customers by sea and road                                            | Demolition, transport, disposal.                                                    | Reuse, recovery and recycling potential                                             |

**5.5** The following diagram is a detailed LCA description of the modules and boundaries.



## 5.6 Content Declaration

| Product Components                                                                             | Weight %   | Post-consumer material, weight-% | Biogenic material, weight-% and kg C/kg |
|------------------------------------------------------------------------------------------------|------------|----------------------------------|-----------------------------------------|
| Portland Cement                                                                                | 20-30%     | 0                                | 0                                       |
| Processed Sand                                                                                 | 70-80%     | 0                                | 0                                       |
| Chemical Additives – Polypropylene Fibers, Re - Dispersible Powder Polymers & Cellulose Powder | 2-4%       | 0                                | 0                                       |
| <b>Total</b>                                                                                   | <b>100</b> | <b>0</b>                         | <b>0</b>                                |

| Packaging Materials                                                                                            |                 |                               |                                 |
|----------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|---------------------------------|
| Packaging Materials                                                                                            | Weight Kg       | Weight % (Versus the Product) | Weight biogenic carbon, kg C/kg |
| Wooden Pallet                                                                                                  | 1.60E-02        | 0.16                          | 0                               |
| Paper Bags                                                                                                     | 5.10E-03        | 0.05                          | 0                               |
| LDPE                                                                                                           | 7.30E-04        | 0.007                         | 0                               |
| <b>Total</b>                                                                                                   | <b>2.18E-03</b> | <b>0.217</b>                  | <b>0</b>                        |
| *Biogenic carbon content is not presents since the packaging weights less than a 5% over the product's weight. |                 |                               |                                 |

## 5.7 Substances listed in the “Candidate List of SVHC”

During the life cycle of the product, no hazardous substances listed in the “Candidate List of substances of very high concern (SVHC) for authorization” has been used in a percentage higher than 0.1% of the weight of the product.

## 5.8 More information

**Cut-off rules:** more than 99% of the materials and energy consumption have been included. The Polluter Pays Principle and the Modularity Principle have been followed.

**Allocations:** The allocation of common inputs and outputs is based on the general allocation rule what represents the proportion of production of every specific product in overall production expressed in square meter. Generic process data for production of input materials were used.

**Electricity:** A specific dataset with the Life Cycle Inventory (LCI) corresponding to the electricity mix in Dubai, United Arab Emirates, has been used for this LCA.

**Calculation Rules:** Datasets from Ecoinvent 3.9.1 with emission factors for raw materials and generic chemicals have been characterized to adjust them to the

characteristics of manufacturing of suppliers or countries where suppliers are located. Specific datasets with the emissions factors corresponding to the fuel combustion of production plant and machinery have been developed for these LCAs. Indirect emissions due to diesel production and transportation are also included in the environmental impact. Minor components are not directly related to the product, with less than 1% impact, such as office supplies, has been excluded from the assessment.

All transports of components have been included in the LCA considering real distances travelled by materials used for production. It is estimated in a global scale according to Ecoinvent™ criteria. As exact port locations are not known in detail, transport distances have been calculated from a one of the ports in the country of origin to the factory. Operation in port has also been excluded. Road distances calculated using Google Maps. Maritime distances calculated using Marine Traffic Voyage Planner.

**By Products Assignment:** There are no by-products in this Environmental Product Declaration. Hence no allocation had to be applied.

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## 6.0 ENVIRONMENTAL PERFORMANCE

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### 6.1 Potential Environment Impacts

In the following tables, the environmental performance of the declared units “1 kg of Conmix **Insubond**” is presented for the Conmix Ltd. During the assessment it was not evident to distinguish the differences in the consumption of electricity, water and raw material during the manufacturing. Hence, the calculation is based on total production vs total consumption against manufacturing of the product. Environmental impacts are calculated using the EF-3.1, (ILCD).

## 1 kg of Conmix Insubond

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding thresholds values, safety margins or risks.

### Core Environmental Impact Indicators

| Impact Category                       | Unit                   | A1       | A2       | A3       | A4       | A5 | B1-B7 | C1       | C2       | C3       | C4       | D         |
|---------------------------------------|------------------------|----------|----------|----------|----------|----|-------|----------|----------|----------|----------|-----------|
| Climate change (GWP) – fossil         | kg CO <sub>2</sub> e   | 3.75E-01 | 1.41E-02 | 2.85E-02 | 1.20E-02 | ND | ND    | 0.00E+00 | 5.84E-03 | 4.83E-03 | 9.16E-04 | -6.74E-02 |
| Climate change (GWP) – biogenic       | kg CO <sub>2</sub> e   | 1.05E-03 | 7.67E-07 | 9.48E-05 | 0.00E+00 | ND | ND    | 0.00E+00 | 0.00E+00 | 3.70E-07 | 4.21E-07 | -6.12E-04 |
| Climate change (GWP) – LULUC          | kg CO <sub>2</sub> e   | 3.95E-04 | 3.13E-06 | 2.70E-05 | 0.00E+00 | ND | ND    | 0.00E+00 | 0.00E+00 | 1.80E-07 | 3.23E-07 | -1.72E-04 |
| Climate change (GWP) – total          | kg CO <sub>2</sub> e   | 3.76E-01 | 1.41E-02 | 2.86E-02 | 1.20E-02 | ND | ND    | 0.00E+00 | 5.84E-03 | 4.83E-03 | 9.17E-04 | -6.82E-02 |
| Ozone depletion                       | kg CFC11e              | 1.06E-08 | 9.10E-10 | 1.77E-09 | 0.00E+00 | ND | ND    | 0.00E+00 | 0.00E+00 | 1.30E-10 | 3.00E-11 | -7.69E-09 |
| Acidification                         | mol H <sup>+</sup> e   | 1.42E-03 | 1.50E-04 | 3.20E-04 | 4.22E-06 | ND | ND    | 0.00E+00 | 2.05E-06 | 4.35E-06 | 6.89E-06 | -5.00E-04 |
| Eutrophication, aquatic freshwater    | kg PO <sub>4</sub> e   | 1.69E-04 | 4.38E-07 | 2.42E-05 | 0.00E+00 | ND | ND    | 0.00E+00 | 0.00E+00 | 1.39E-07 | 2.38E-07 | -6.47E-05 |
| Eutrophication, aquatic freshwater    | Kg P eq                | 5.51E-05 | 1.43E-07 | 7.89E-06 | 0.00E+00 | ND | ND    | 0.00E+00 | 0.00E+00 | 4.52E-08 | 7.74E-08 | -2.11E-05 |
| Eutrophication, aquatic marine        | kg Ne                  | 3.77E-04 | 3.82E-05 | 2.51E-04 | 2.10E-06 | ND | ND    | 0.00E+00 | 1.02E-06 | 1.35E-06 | 2.64E-06 | -1.38E-04 |
| Eutrophication, terrestrial           | mol Ne                 | 4.17E-03 | 4.20E-04 | 1.51E-03 | 2.00E-05 | ND | ND    | 0.00E+00 | 1.00E-05 | 1.00E-05 | 3.00E-05 | -1.50E-03 |
| Photochemical ozone formation         | kg NMVOCe              | 1.26E-03 | 1.10E-04 | 3.88E-04 | 6.24E-06 | ND | ND    | 0.00E+00 | 3.04E-06 | 1.05E-05 | 9.85E-06 | -4.75E-04 |
| Abiotic depletion, minerals & metals  | kg Sbe                 | 1.93E-06 | 6.27E-09 | 8.73E-08 | 0.00E+00 | ND | ND    | 0.00E+00 | 0.00E+00 | 2.02E-09 | 1.27E-09 | -8.27E-07 |
| Abiotic depletion of fossil resources | MJ                     | 4.47E+00 | 6.18E-02 | 2.22E-01 | 0.00E+00 | ND | ND    | 0.00E+00 | 0.00E+00 | 8.50E-02 | 2.42E-02 | -1.07E+00 |
| Water use                             | m <sup>3</sup> e depr. | 1.23E-01 | 1.39E-04 | 2.27E-01 | 0.00E+00 | ND | ND    | 0.00E+00 | 0.00E+00 | 3.55E-04 | 1.03E-03 | -4.22E-02 |

EN 15804+ A2 disclaimers for Abiotic depletion and Water use indicators and all optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. "Reading example: 1.57E-03 = 1.57\*10<sup>-3</sup> = 0.00157"

## Additional Environmental Impact Indicators

| Impact Category                       | Unit          | A1       | A2       | A3       | A4       | A5 | B1-B7 | C1       | C2       | C3       | C4       | D         |
|---------------------------------------|---------------|----------|----------|----------|----------|----|-------|----------|----------|----------|----------|-----------|
| Particulate matter                    | Incidence     | 1.71E-08 | 1.57E-10 | 1.05E-09 | 2.23E-11 | ND | ND    | 0.00E+00 | 1.09E-11 | 1.84E-11 | 1.47E-10 | -1.33E-08 |
| Ionizing radiation, human health      | kBq U235e     | 8.28E-03 | 2.64E-04 | 6.71E-04 | 0.00E+00 | ND | ND    | 0.00E+00 | 0.00E+00 | 3.90E-06 | 1.45E-05 | -4.34E-03 |
| Eco-toxicity (freshwater)             | CTUe          | 1.28E+00 | 1.71E-02 | 3.76E-01 | 4.00E-05 | ND | ND    | 0.00E+00 | 2.00E-05 | 6.40E-04 | 1.04E-02 | -5.44E-01 |
| Human toxicity, cancer effects        | CTUh          | 6.80E-10 | 2.14E-12 | 3.45E-11 | 4.13E-13 | ND | ND    | 0.00E+00 | 2.01E-13 | 2.57E-13 | 4.01E-13 | -4.70E-10 |
| Human toxicity, non-cancer effects    | CTUh          | 2.76E-09 | 2.15E-11 | 6.42E-10 | 7.93E-12 | ND | ND    | 0.00E+00 | 3.86E-12 | 6.24E-12 | 4.92E-12 | -8.40E-10 |
| Land use related impacts/soil quality | Dimensionless | 3.79E+01 | 7.72E-03 | 1.11E-01 | 0.00E+00 | ND | ND    | 0.00E+00 | 0.00E+00 | 1.11E-03 | 4.51E-02 | -3.73E+01 |

EN 15804+A2 disclaimer for Ionizing radiation, human health. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

## Environmental impacts – GWP-GHG

| Impact Category | Unit    | A1       | A2       | A3       | A4       | A5 | B1-B7 | C1       | C2       | C3       | C4       | D         |
|-----------------|---------|----------|----------|----------|----------|----|-------|----------|----------|----------|----------|-----------|
| GWP-GHG         | kg CO2e | 3.75E-01 | 1.41E-02 | 2.85E-02 | 1.20E-02 | ND | ND    | 0.00E+00 | 5.84E-03 | 4.83E-03 | 9.16E-04 | -6.76E-02 |

This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013) This indicator is almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

## Use of Natural Resources

| Impact Category                 | Unit | A1       | A2       | A3       | A4       | A5 | B1-B7 | C1       | C2       | C3       | C4       | D         |
|---------------------------------|------|----------|----------|----------|----------|----|-------|----------|----------|----------|----------|-----------|
| Renewable PER used as energy    | MJ   | 5.23E+00 | 3.90E-04 | 1.30E-02 | 0.00E+00 | ND | ND    | 0.00E+00 | 0.00E+00 | 8.21E-05 | 1.99E-04 | -5.12E+00 |
| Renewable PER used as materials | MJ   | 5.77E-04 | 1.72E-06 | 2.54E-05 | 0.00E+00 | ND | ND    | 0.00E+00 | 0.00E+00 | 9.37E-05 | 8.17E-07 | -2.11E-04 |
| Total use of renewable PER      | MJ   | 5.23E+00 | 3.92E-04 | 1.30E-02 | 0.00E+00 | ND | ND    | 0.00E+00 | 0.00E+00 | 1.76E-04 | 2.00E-04 | -5.12E+00 |

|                                   |    |          |          |          |          |    |    |          |          |          |          |           |
|-----------------------------------|----|----------|----------|----------|----------|----|----|----------|----------|----------|----------|-----------|
| Non-renew. PER used as energy     | MJ | 4.47E+00 | 6.18E-02 | 2.22E-01 | 0.00E+00 | ND | ND | 0.00E+00 | 0.00E+00 | 8.50E-02 | 2.42E-02 | -1.07E+00 |
| Non-renew. PER used as materials  | MJ | 1.58E-06 | 1.03E-09 | 2.79E-08 | 0.00E+00 | ND | ND | 0.00E+00 | 0.00E+00 | 4.45E-10 | 1.71E-08 | -1.53E-07 |
| Total use of non-renewable PER    | MJ | 4.47E+00 | 6.18E-02 | 2.22E-01 | 0.00E+00 | ND | ND | 0.00E+00 | 0.00E+00 | 8.50E-02 | 2.42E-02 | -1.07E+00 |
| Use of secondary materials        | Kg | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | ND | ND | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  |
| Use of renewable secondary fuels  | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | ND | ND | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  |
| Use of non-renew. secondary fuels | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | ND | ND | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  |
| Use of net fresh water            | m3 | 0.00E+00 | 0.00E+00 | 2.30E+01 | 0.00E+00 | ND | ND | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  |

## End of Life - Waste

| Impact Category     | Unit | A1       | A2       | A3       | A4       | A5 | B1-B7 | C1       | C2       | C3       | C4       | D        |
|---------------------|------|----------|----------|----------|----------|----|-------|----------|----------|----------|----------|----------|
| Hazardous waste     | Kg   | 0.00E+00 | 0.00E+00 | 2.58E+04 | 0.00E+00 | ND | ND    | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.25E+05 | 0.00E+00 |
| Non-hazardous waste | Kg   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | ND | ND    | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Radioactive waste   | Kg   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | ND | ND    | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

## End of Life - Outflows

| Impact Category               | Unit | A1       | A2       | A3       | A4       | A5 | B1-B7 | C1       | C2       | C3       | C4       | D        |
|-------------------------------|------|----------|----------|----------|----------|----|-------|----------|----------|----------|----------|----------|
| Components for reuse          | Kg   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | ND | ND    | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.29E+06 |
| Materials for recycling       | Kg   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | ND | ND    | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Materials for energy recovery | Kg   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | ND | ND    | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Exported energy - electricity | MJ   | 0.00E+00 | 0.00E+00 | 3.78E+04 | 0.00E+00 | ND | ND    | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Exported energy - thermal     | MJ   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | ND | ND    | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

## Biogenic Carbon Content

| Details                                           | Unit | A1-A3 |
|---------------------------------------------------|------|-------|
| Biogenic carbon content in product                | Kg C | 0     |
| Biogenic carbon content in accompanying packaging | Kg C | 0     |

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO<sub>2</sub>. "Reading example: 1.57E-03 = 1.57\*10<sup>-3</sup> = 0.00157"

*Disclaimer: "According to the EN 15804:2012+A2:2019 standard, the LCIA results are relative expressions translating impacts into environmental themes such as climate change, ozone depletion, etc. (midpoint impact categories). Thus, the LCIA results do not predict impacts on category endpoints such as impact on the extinction of species or human health. In addition, the results do not provide information about the exceeding of thresholds, safety margins or risks".*

## 6.2 Interpretation of LCA Study Results

In general terms, as it is shown in the table of core environmental impact indicators, A1-A3 modules have the higher impact, representing above 80% of the whole impact. A4 module has a less impact. C2 and C4 module has little impact too, representing at most 0.16% and 0.01% respectively of the whole impact. Refer the below table 1 for more detailed explanations.

Concluding, the study provides fair understanding of environmental impacts during the various life cycle stages of Conmix **Insubond** production. It also identifies the hot spots in the value chain where improvement activities can be prioritized and accordingly actions can be planned. The scope covers the ecological information to be divided into raw material production (A1), transportation (A2), manufacturing (A3), delivery (A4), product dismantling (C1), transport of dismantled product to site (C2), waste processing (C3), waste disposal (C4) as well as the end of life stage recycling (D) considerations.

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## **7.0 MANDATORY STATEMENTS**

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Explanatory material can be obtained from EPD owner and/or LCA author. The verifier and The Program Operator do not make any claim or present any responsibility about the legality of the product. The EPD owner has the sole ownership, liability, and responsibility for the EPD. The LCA Author shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

EPDs within the same product category but registered in different EPD 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; have equivalent content declarations; and be valid at the time of comparison.

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## **8.0 ADDITIONAL INFORMATION**

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### **8.1 Action against Erosion, Environmental Restoration, and Landscaping of the work.**

Application of measures to prevent erosion, restore the environment, and landscape the job includes restoring all elements immediately connected to it. The restoration of other related items indirectly is also suggested, including auxiliary facilities and landfill lands.

We recycle as many waste materials as possible. We follow a Just-in-Time manufacturing strategy to increase efficiency, reduce wastage and eliminate the need for excess storage.

CONMIX R&D team formulates new products and helps in offering innovative solutions for a wide range of construction problems. The technical team supports clients in executing mix designs, on-site trials, product selection and troubleshooting.

### **8.2 Information related to Sector EPD**

This is not a sector EPD.

### **8.3 Differences versus previous versions**

This is the first version of the EPD.

## 9.0 VERIFICATION

|                                                                                                                                                                                                                                                      |                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Diffusion Institution                                                                                                                                                                                                                                | International Climate Intelligence System<br>71-75 Shelton Street<br>Covent Garden<br>London, WC2H 9JQ<br>United Kingdom |
| Registration Number                                                                                                                                                                                                                                  | ICIS-202409-69                                                                                                           |
| Date of Publication                                                                                                                                                                                                                                  | 22.09.2024                                                                                                               |
| Valid until                                                                                                                                                                                                                                          | 21.09.2029                                                                                                               |
| Geographical Scope                                                                                                                                                                                                                                   | United Arab Emirates                                                                                                     |
| Product category rules (PCR): PCR 2020:17 Construction products (EN 15804:2012+A2:2019/AC:2021) Version 1.2.5 dated 01.11.2022. Cement and Building Lime EN 16908:2017+A1:2022. EN standard EN 15804 serves as the Core Product Category Rules (PCR) |                                                                                                                          |
| PCR review was conducted by: International Climate Intelligence System.                                                                                                                                                                              |                                                                                                                          |
| Independent verification of the declaration and data, according to ISO 14025:2006 and ISO 14040:<br><input type="checkbox"/> EPD Process Certification (internal) <input checked="" type="checkbox"/> EPD Verification (external)                    |                                                                                                                          |
| Third party verifier: Constantine Stephen.S<br>Accredited by: International Climate Intelligence System                                                                                                                                              |                                                                                                                          |

## 10.0 CONTACT INFORMATION

|                  |                                                                                                                                                                                                                                                                                                                                                 |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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| LCA Author       | <p>S.B.Rajan -Sustainability Consultant<br/>GCAS Quality Certifications<br/>P.O.Box 65561, Dubai, UAE<br/><a href="http://www.gcasquality.com">www.gcasquality.com</a><br/><a href="mailto:info.dubai@gcasquality.com">info.dubai@gcasquality.com</a></p>  |
| Verifier Details | <p>Name: Constantine Stephen.S<br/>Location: Glasgow<br/>Accredited by: International Climate Intelligence System</p>                                                                                                                                      |

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## 11.0 REFERENCES

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LCA Report: Life Cycle Inventory of Conmix **Insubond** by Conmix Ltd.

Software: Air.e LCA Version 3.17.4.0 [www.solidforest.com](http://www.solidforest.com)

Main database: Ecoinvent 3.10.0 [www.ecoinvent.org](http://www.ecoinvent.org)

Geographical scope of the EPD: United Arab Emirates

ISO 14040:2006 "Environmental management -- life cycle assessment -- principles and framework";

ISO 14044:2006 "Environmental management -- life cycle assessment -- requirements and guidelines";

ISO 14020:2000 "Environmental Labels and declarations - General Principles

ISO 14025:2006 "Environmental labels and declarations -- type III environmental declarations -- principles and procedures".

EN 15804+A2:2019/AC:2021 European Committee for Standardization: Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products.

General Programme Instructions of the International Climate Intelligence System

