CONCRETE REPAIR SYSTEMS

ENVIRONMENTAL PRODUCT DECLARATION

RECON GP55

In accordance with ISO 14025 & EN 15804:2012+A2:2019/AC:2021

EPD Program	Title	Details
International Climate Intelligence System 71-75 Shelton Street Covent Garden, London, WC2H 9JQ United Kingdom office@climateintell.com	Registration Number	ICIS-202603-121
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For the most current version and to confirm the validity of an EPD within International Climate Intelligence System, please refer to www.climateintell.com. EPDs are subject to revision or removal if conditions vary.

Leading the Middle East, **Conmix** delivers innovative concrete and plaster solutions.

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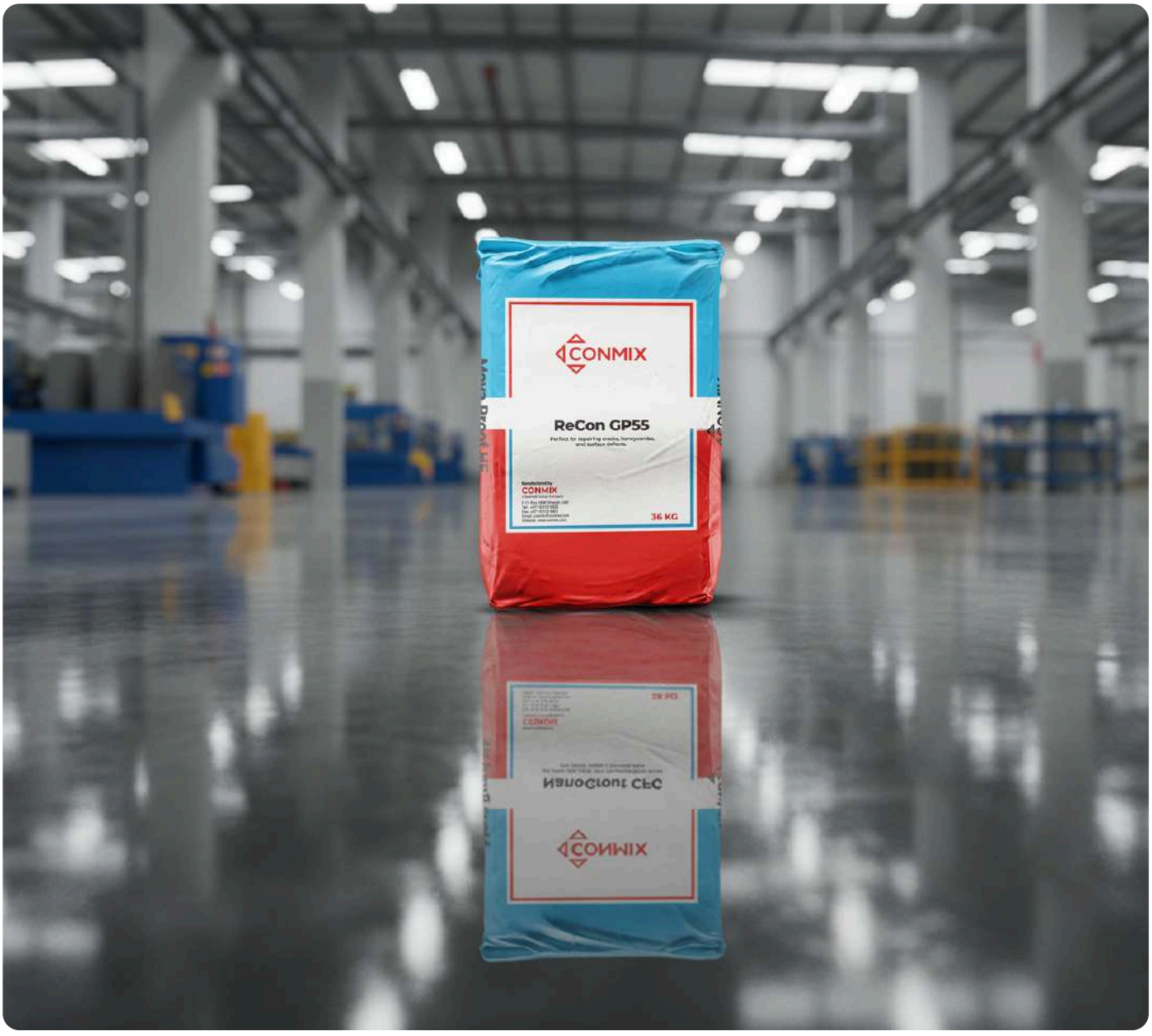
OVERVIEW

This Environmental Product Declaration (EPD) presents verified, transparent environmental performance data for ReCon GP55, manufactured by Conmix Ltd. at its facility in Sharjah, United Arab Emirates, for the reporting period August 2024 to July 2025. The declared unit for this assessment is 1 kg of ReCon GP55.

The LCA follows the requirements of ISO 14025 and EN 15804:2012 + A2:2019/AC:2021, covering all relevant life cycle stages within the defined system boundary. This EPD enables architects, engineers, contractors, and sustainability consultants to make informed material choices by providing consistent, third-party-verified environmental information suitable for certification schemes, embodied-carbon reporting, and procurement transparency.



PRODUCT INFORMATION

Product Name

ReCon GP55

Product Type

Shrinkage Compensated Cementitious Structural Grade Repair Mortar

Declared Unit

1 kilogram

PCR & Version

ICIS PCR 2026:18 v1.2.6 (EN 15804 + A2 aligned)

Scope

Cradle-to-Gate with options (A1-A4, C1-D)

Production Route

Dry-mix cementitious formulation

Recycled Content

Not intentionally added (inherent recycled content only)

Electricity Mix

UAE grid mix from Ecoinvent 3.11 (cut-off). Natural Gas (89.42%), Nuclear (7.06%), Oil (0.60%), Solar (0.18%) and others.

LCA Tool and Database

Air.e.LCA v3.20.1.0 and Ecoinvent v3.11 (Cut-Off)

Geographical Scope

United Arab Emirates

PRODUCT INFORMATION

Verification

International Climate Intelligence System
71-75 Shelton Street, Covent Garden
London, WC2H 9JQ
United Kingdom
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Product Group Classification

UN CPC 3744 (Cement mortars & grouts)

Environmental Performance Summary (A1-A3)

Indicator	Result	Unit
Climate change (GWP) - total	5.57E-01	Kg CO_2e
Climate change (GWP) - fossil	5.54E-01	Kg CO_2e
Ozone Depletion (ODP)	7.98E-09	Kg CFC-11e
Abiotic depletion of fossil resources	6.18E+00	MJ

Hotspot Summary

Process	Share of Total GWP (%)
Raw Material Supply (A1)	73.85
Raw Material Transportation (A2)	1.06
Manufacturing (A3)	20.13
Remaining Modules (A4, C1-C4)	4.96

PRODUCT INFORMATION

Where This Adds Value

Scheme / Area	Relevance to ReCon GP55
LEED v4.1 (USGBC) – MR Credit: EPDs (aligned with emerging LEED v5 requirements)	The Type III EPD for ReCon GP55 supports Material Disclosure credits and contributes to whole-building embodied carbon calculations, particularly for structural repair works, base plates, and anchoring applications in LEED-certified buildings.
Estidama Pearl Rating System (Abu Dhabi)	Provides verified environmental data required for LBo-6 and material transparency pathways. ReCon GP55 is commonly used in structural repair, column bases, and precision grouting works on Pearl-rated infrastructure projects.
GSAS (Qatar)	Supports material submittals requiring environmental documentation for GSAS Material & Waste credits. ReCon GP55's quantified cradle-to-gate impacts enable transparent comparison during repair and retrofit material approval.
BREEAM (UK/UAE Adaptations)	EPD contributes to MAT 01 (Life Cycle Impacts) and MAT 02 (Responsible Sourcing) credits. Relevant for UK-based consultants delivering UAE concrete repair, rehabilitation, and strengthening projects using cementitious repair mortars.
Whole-Building LCA Tools	The cradle-to-gate (A1–A3) LCA model for ReCon GP55 can be directly used in digital LCA tools for structural rehabilitation works in commercial, industrial, and infrastructure projects.
Government & Giga-Project Requirements	Major clients (e.g., NEOM, Red Sea Global, Diriyah Gate, ADNOC, DEWA) increasingly require product-specific EPDs for structural materials. ReCon GP55's EPD supports pre-qualification and approved-materials lists for cementitious repair mortars and related structural repair products.

PRODUCT INFORMATION

Procurement Transparency (GCC Contractors)	Supports sustainability submissions for contractors, consultants, and structural engineers specifying cementitious concrete repair mortars and repair systems, ensuring compliance with tender sustainability clauses and project carbon reporting requirements.

ABOUT CONMIX

Founded in 1975, Conmix Ltd. is one of the UAE's longest-established manufacturers of construction materials and has grown into a leading producer of ready-mix concrete, pre-mix plasters, mortars, grouts, coatings, and construction chemicals in the Middle East. Strategically headquartered in Sharjah, the company has supported regional infrastructure development for decades through its extensive range of high-performance, quality-certified products.

Conmix operates a fully integrated manufacturing network with multiple production facilities across the UAE, covering ready-mix concrete, dry-mix plasters, grouts, repair mortars, waterproofing systems, and specialty construction chemicals. Its products are supplied to major building and infrastructure projects across the GCC, Asia, and Africa.

The company's operations are supported by a skilled workforce of over 1,000 personnel, including engineers, lab technicians, QC specialists, production experts, and technical support teams.

Conmix promotes a culture of innovation, operational excellence, and customer service, with dedicated teams overseeing formulation development, sustainability initiatives, and project-specific technical support.

Conmix maintains a comprehensive portfolio, including:

- ISO 9001:2015 – Quality Management System
- ISO 14001:2015 – Environmental Management System
- ISO 45001:2018 – Occupational Health & Safety
- Dubai Central Laboratory (DCL) product conformity certifications covering plasters, grouts, and repair systems
- BS, ASTM, EN, and DIN compliance across multiple dry-mix and chemical product categories
- CE Marking for selected product lines exported to international markets

Conmix continues to enhance its manufacturing capabilities and quality systems to meet the evolving requirements of large-scale construction and infrastructure projects across the region.

PRODUCT DESCRIPTION

ReCon GP55 is a ready-to-use, polymer-modified, fibre-reinforced cementitious concrete repair mortar designed for structural and non-structural repair applications. Supplied as a single-component grey powder, it requires only the addition of clean water on site to produce a cohesive, workable mortar suitable for hand application or wet spray techniques. The formulation incorporates Ordinary Portland cement (OPC), Limestone sand, silica fume, Ground Granulated Blast Furnace Slag (GGBFS), and performance additives that enhance adhesion, durability, and resistance to cracking while ensuring controlled setting and good build-up.

ReCon GP55 is engineered for repairing spalled or damaged concrete in horizontal and vertical applications at thicknesses up to 40 mm per layer. It develops high early and long-term strength, exhibits low permeability, and provides excellent bond to prepared concrete substrates, contributing to long-term performance. Typical uses include repairs to beams, columns, slabs, balconies, and precast elements exposed to aggressive environments. The product is supplied in 10 kg and 25 kg bags, offering flexibility for small and rehabilitation works.

Sectors & Corresponding Uses

Sector	Application / Use Case
Structural Concrete Repair	Patch repair and reinstatement of damaged, spalled, or honeycombed concrete in beams, columns, slabs, and soffits
Repair & Rehabilitation	Localized repair of concrete affected by impact damage, carbonation, chloride ingress, or reinforcement exposure
Infrastructure & Civil Works	Repair of concrete elements in bridges, culverts, retaining walls, and precast infrastructure components
Industrial & Utility Structures	Restoration of concrete surfaces in industrial floors, equipment plinths, and utility structures requiring high durability
Building Maintenance & Retrofit	Corrective repair works during refurbishment, strengthening, or life-extension projects for reinforced concrete buildings

Technical Specifications

Parameter	Details / Specification
Form	Single-component, cementitious repair mortar

PRODUCT DESCRIPTION

Mixing Water	Approx. 3.5–4.0 L per 25 kg bag (depending on consistency and application method)
Fresh Wet Density	~2.05 kg/L ± 0.05
Workability / Pot Life	Approx. 20 minutes at 25 °C
Compressive Strength	45 N/mm² at 7 days; 60 N/mm² at 28 days
Flexural Strength	8 N/mm² at 28 days
Bond Strength	1.2 N/mm² at 28 days
Water Absorption (ISAT)	< 0.01 ml/m2/sec at 2 hrs
Water Permeability	< 10mm
Rapid Chloride Permeability	< 900 coulombs
Drying Shrinkage	< 500 microstrain at 28 days
Application Method	Hand application or wet spray for vertical, horizontal, and overhead repairs

MANUFACTURING DETAILS

The production of ReCon GP55 at Conmix begins with the receipt and inspection of key raw materials, primarily finely graded limestone sand, Ordinary Portland Cement (OPC), Ground Granulated Blast Furnace Slag (GGBFS), silica fume, and specialised admixtures. All incoming materials are subjected to quality inspection to verify conformity with internal specifications before being transferred to designated silos, bins, or moisture-controlled storage areas depending on material sensitivity.

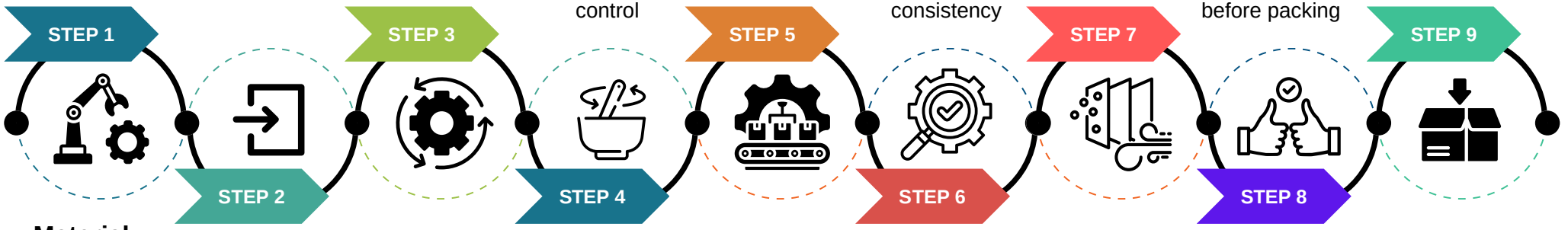
During precise batching, each constituent is accurately dosed using automated weighing systems to ensure consistency in formulation. The materials are then conveyed to the dry blending unit, where high-efficiency mixers homogenise the cementitious binder system with mineral additions and functional admixtures. A dedicated admixture-mixing stage ensures uniform dispersion of polymers, fibres, and performance modifiers, contributing to ReCon GP55's high adhesion, controlled shrinkage, and structural repair performance. No chemical reactions occur during manufacturing; the process remains entirely physical.

Following blending, the material passes through fine sieving to remove oversized particles and ensure a uniform repair mortar texture. Air removal improves bulk density and handling characteristics. Representative samples are taken for quality checks, including bulk density and flow consistency, prior to final inspection. Conforming batches are packed into moisture-resistant 10 kg and 25 kg bags, batch-coded, palletised, wrapped, and prepared for dispatch from the Sharjah manufacturing facility.

For a visual representation of the full manufacturing workflow, refer to the illustrated flow chart on the next page. A screenshot of the process flow as modeled in the LCA software is provided on the page that follows.

MANUFACTURING DETAILS

Schematic overview of ReCon GP55 manufacturing process



Material Inspection
Check quality, moisture, and consistency of inputs

Precise Batching
Weigh raw materials to exact proportions

Dry Blending
Uniformly mix limestone, OPC and other powders

Admixture Mixing
Disperse chemicals for flow and expansion control

Quality Sampling
Test blend for flow and density parameters

Fine Sieving
Remove oversize particles for smooth consistency

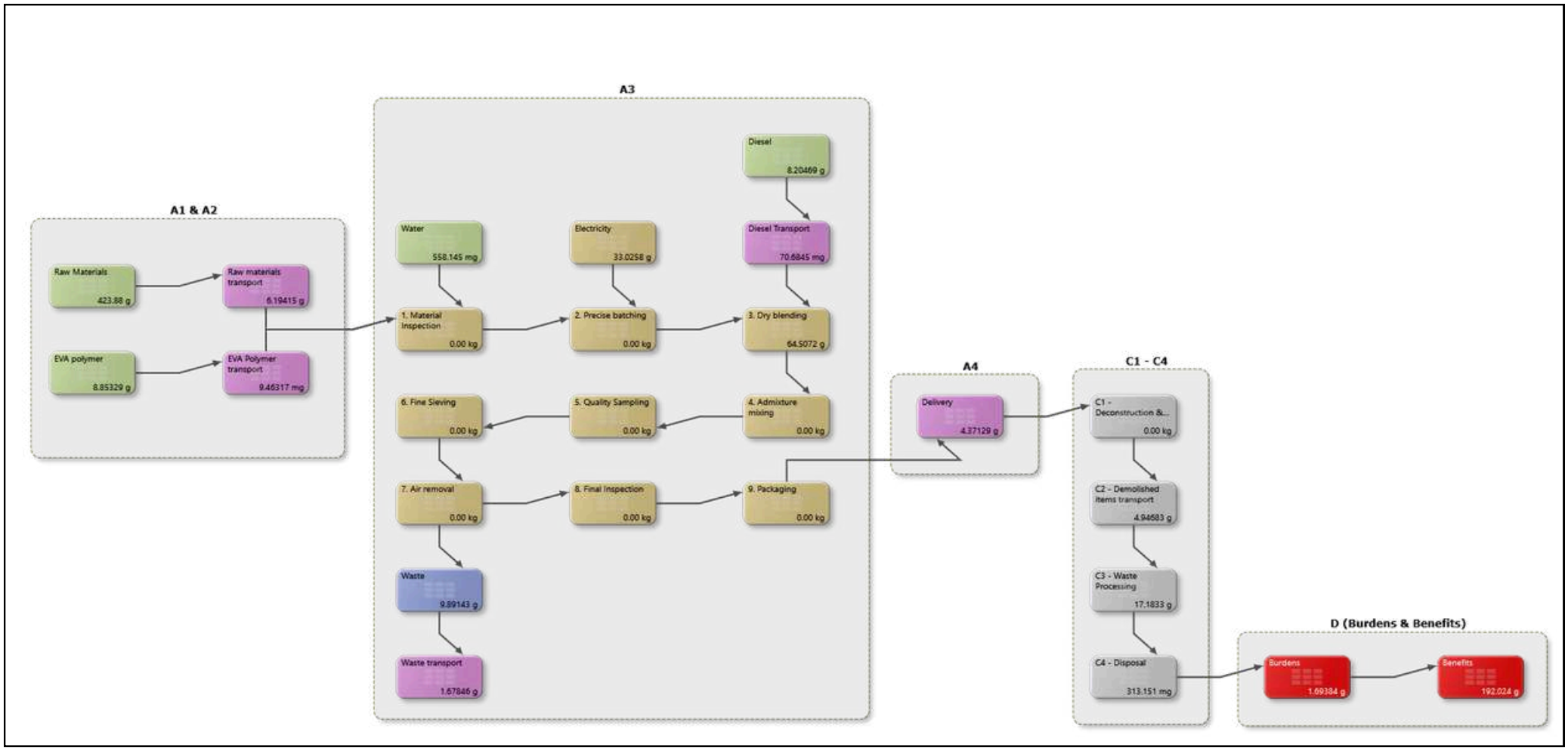
Air Removal
De-aerate mix to prevent trapped voids

Final Inspection
Verify uniformity and compliance before packing

Packing
Fill, seal, and palletize bags for dispatch

MANUFACTURING DETAILS

Screenshot of ReCon GP55 LCA model from LCA software



CONTENT DECLARATION

The content declaration provides a transparent breakdown of all raw materials used in the formulation of ReCon GP55, expressed per 1 kg of product. The mix is primarily composed of finely graded limestone sand, Ordinary Portland Cement (OPC), Ground Granulated Blast Furnace Slag (GGBFS), and silica fume supported by small quantities of performance-enhancing additives that provide flow retention, stability, and non-shrink characteristics. The total of all listed components equals 1 kg, matching the declared unit and ensuring complete material accounting in line with EN 15804 and ISO 14025 requirements.

Component	Weight (kg/Declared unit)	Post-consumer recycled (%)	Pre-consumer recycled (%)	Biogenic Content (%)	Biogenic Carbon (kg C/DU)
Limestone sand	0.58	0	0	0	0
OPC	0.29	0	0	0	0
GGBFS	0.11	0	0	0	0
Silica Fume	0.01	0	0	0	0
EVA Polymer & Additives	0.01	0	0	0	0
Total	**1**	**0**	**0**	**0**	**0**

Substances of Very High Concern (SVHC)

According to the requirements of the ECHA Candidate List, ReCon GP55 contains no substances of very high concern (SVHCs) above the 0.1% (w/w) threshold in the final product or its ancillary materials.

All raw materials used in the formulation—Limestone Sand, OPC, GGBFS, Silica Fume, EVA Polymer, additives, and fillers—were reviewed against the latest published SVHC list at the time of reporting. Based on manufacturer declarations and available safety data, no SVHCs are present.

Packaging Material Declaration

Packaging materials used for ReCon GP55 include wooden pallets, multi-wall kraft cement bags, and LDPE liners. These materials serve distinct functions within the product supply chain—wooden pallets provide structural stability during handling and transport, kraft cement bags protect the dry powder product during storage, and LDPE liners prevent moisture ingress and preserve flowability. All packaging components are included in the life cycle assessment because they contribute to upstream manufacturing impacts and generate recoverable material streams at end-of-life.

CONTENT DECLARATION

Packaging Material	Biogenic Content (%)	Biogenic Carbon Fraction (kg C/kg material)	Notes & References
Wooden Pallet	~100% biogenic (solid wood)	0.50 kg C per kg wood (approx. 50% of dry mass is carbon)	Wood carbon fraction widely documented in forestry & IPCC (2006) guidelines — wood contains 50% carbon by dry weight
Cement Bags	~100% biogenic (paper fibre)	0.44 kg C per kg paper (44% carbon content)	Paper/pulp industry data and IPCC default values for lignocellulosic biomass
LDPE Liners	0% biogenic	0 kg C/kg	Petroleum-based plastic; contains no biogenic carbon

Wood and cement bags contain significant biogenic carbon because they originate from biomass; LDPE does not. These biogenic fractions are reported for transparency and to reflect the renewable carbon temporarily stored in packaging materials. Their treatment in the LCA model follows EN 15804+A2 guidance, with flows presented in the Packaging Composition and Biogenic Carbon table below.

Packaging Material	Weight (kg/Declared Unit)	Share of Packaging (%)	Biogenic Carbon (kg C/DU)	End-of-Life Handling
Wooden Pallet	2.50E-02	82.24	1.25E-02	Reuse / Recycle / Energy Recovery
LDPE Liners	1.40E-03	4.60	0.00E+00	Recycle / Energy Recovery
Cement Bags	4.00E-03	13.16	1.76E-03	Recycle
Total	**3.04E-02**	**100**	**1.43E-02**	**-**
Note - Biogenic content in packaging materials **exceed the 5% threshold** of the total packaging weight as stated in **ICIS PCR 2026:18**. Hence, these biogenic emissions are added in **module A3 and balanced out in module A5**.				

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Declared Unit

The declared unit for this EPD is 1 kg of ReCon GP55 at the factory gate. All material inputs, energy use, emissions, transportation, packaging, and end-of-life modelling are quantified relative to this unit. This ensures consistent comparison across life cycle stages and aligns with EN 15804+A2 requirements for construction products. No functional performance is assigned to the product in this declaration, as the EPD is based on a declared unit rather than a functional unit.

Temporal, Geographical and Technological Representativeness

Temporal Representativeness: Primary data for ReCon GP55 reflects the reporting period August 2024 to July 2025, in line with EN 15804+A2 requirements that primary manufacturing data must be no older than five years. All on-site information—including raw material consumption, energy use, water use, and waste generation—represents current operational conditions at the Sharjah plant during the defined reporting year. Background data used in the study are consistent with the temporal validity provided in their respective datasets to ensure alignment with the modelling year.

Geographical Representativeness: The LCA model for ReCon GP55 reflects the actual manufacturing and supply conditions of Conmix Ltd.'s Sharjah facility in the United Arab Emirates, where all primary data was collected. The study represents production and operations within UAE, with UAE-specific or GCC-specific conditions applied wherever available — particularly for raw material sourcing patterns, electricity grid characteristics, water production, and end-of-life treatment routes.

Where UAE-specific datasets or regional factors were not available, GCC-appropriate or globally representative datasets were used. All transport distances, energy consumption figures, and end-of-life scenarios are based on realistic UAE and GCC practice, ensuring geographical relevance of the final results.

Technological Representativeness: The manufacturing process modelled for ReCon GP55 accurately reflects the actual production technology used at Conmix Ltd.'s Sharjah facility. The product is produced through a dry-mix blending process, incorporating OPC, limestone sand, GGBFS, silica sand and performance additives using industrial mixers, controlled batching systems, and automated sieving equipment. No chemical reactions, heating, or wet processes occur during production, and no by-products are generated. The technological assumptions used in the LCA are therefore fully representative of real operations at the plant, ensuring that the results reflect true site-specific conditions.

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LCA Software and Database

The life cycle model for ReCon GP55 was developed using Air.e.LCA v3.20.1.0, with all background inventory data sourced from Ecoinvent v3.11 (Allocation, cut-off by classification). The software was used to structure process flows, assign datasets, calculate environmental indicators, and perform all module-by-module inventory tracking. The database provides consistent, peer-reviewed life cycle inventories for raw materials, energy supply, transportation, and waste management processes. All datasets selected reflect technologies and supply chains relevant to the product and regional context, ensuring reliable integration of foreground data with established international life cycle inventories.

System Boundary

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 15804:2012 + A2:2019 / 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.

All related direct and indirect environmental impacts related to these elements have been calculated and were included in the LCA and this EPD. Personnel-related processes, such as transportation of employees to and from work is excluded. Also, the production and end-of-life processes of infrastructure or capital goods used in the product system are excluded.

Module A1 - Raw Material Supply

Module A1 encompasses all upstream processes related to the sourcing and preparation of raw materials used in the manufacture of ReCon GP55. The primary constituents—Ordinary Portland Cement (OPC), Ground Granulated Blast Furnace Slag (GGBFS), and finely graded limestone sand—are procured from established suppliers within the United Arab Emirates, ensuring reliable quality, consistent grading, and compatibility with local construction requirements. Polymer modifiers such as EVA are sourced from Dubai, while silica fume and performance additives are obtained from a combination of local and international suppliers depending on technical specifications and availability. All upstream activities such as raw material extraction, intermediate processing, and packaging of inputs are included within this module.

Module A2 - Raw Material Transportation

Module A2 covers the transportation of all raw materials from their respective suppliers to the Conmix manufacturing facility in Sharjah, United Arab Emirates. Key inputs—including Ordinary Portland Cement (OPC) and Ground Granulated Blast Furnace Slag (GGBFS)—are sourced

from suppliers within Sharjah, while limestone sand is transported from Ras Al Khaimah, reflecting the local supply network for GP55. Polymer additives are sourced from Dubai, United Arab Emirates, alongside other performance additives supplied locally. All inbound movements are modelled using >32-ton Euro 6–equivalent road transport, representing typical logistics for bulk powders, bagged materials, and palletised chemical inputs. The environmental impacts in this stage arise from fuel consumption, tailpipe emissions, and transport distances associated with the delivery of each material. Load efficiencies and realistic supplier-to-plant distances used in the LCA model reflect actual UAE logistics conditions and are applied consistently across all raw materials in the product system.

Module A3 - Manufacturing

Manufacturing impacts cover all processes required to convert raw materials into the finished ReCon GP55 product at the Conmix facility in Sharjah. Production follows a controlled dry-mix workflow comprising nine sequential steps: Material Inspection, Precise Batching, Dry Blending, Admixture Mixing, Quality Sampling, Fine Sieving, Air Removal, Final Inspection, and Packing. Each stage ensures accurate dosing, uniform dispersion of additives, consistent mix quality, and compliance with internal technical specifications.

Environmental loads in this module include electricity use for mixing, sieving, and material handling; fuel use from internal forklift movement; water used for equipment wash-down; and solid waste generated during fine sieving (primarily inert mineral residues). Wastewater from cleaning operations is directed to appropriate treatment. This module also accounts for all ancillary inputs used on-site, including packaging materials (LDPE liners, cement bags, and wooden pallets). All emissions from equipment operation, internal transport, dust handling, and waste processing are included within the A3 boundary.

Module A4 - Delivery

Module A4 accounts for the transportation of finished ReCon GP55 from the Conmix manufacturing facility in Sharjah to customer locations. As ReCon GP55 is supplied exclusively within the United Arab Emirates, outbound transport is modelled using domestic road freight only. Road deliveries are modelled using Euro 6, >32-ton trucks consistent with Ecoinvent v3.11 cut-off system model assumptions, reflecting typical heavy-duty vehicles used for bagged cementitious repair materials in the region.

As a dry powder packaged in bags and palletised for shipment, the product is transported as consolidated loads with full capacity utilisation. Transport distances are based on representative average delivery routes within the UAE, covering distribution to construction sites, contractors,

LCA KNOWLEDGE

and infrastructure projects. Environmental impacts in this module include diesel consumption, tailpipe emissions, and load-dependent fuel use associated with outbound domestic deliveries

Scenario details	Description
Vehicle used for transport	Euro 6, >32 ton truck
Vehicle capacity	>32 tons
Fuel type and consumption	Diesel, 0.38 liters per km
Capacity utilization	100% as assumed in Ecoinvent v3.11
Bulk transportation	Mass of the transported product

LCA KNOWLEDGE

Module C1 - Deconstruction and Demolition

Module C1 addresses the environmental impacts associated with deconstruction or demolition of the product at end-of-life. ReCon GP55 is applied as a structural repair mortar over damaged or deteriorated concrete surfaces, where it bonds monolithically with the substrate. Once cured, it integrates fully into the concrete element and does not remain as a separate layer that can be removed independently.

During end-of-life demolition, the entire concrete component is broken using standard demolition equipment such as hydraulic breakers, excavators, or crushers. The repair mortar fractures and crumbles in the same manner as the surrounding concrete and does not require any additional time, tools, fuel, or demolition effort specifically attributable to the product.

For example, if a column, beam, or slab containing ReCon GP55 repairs is demolished, contractors do not identify or isolate the repair mortar, nor does the presence of ReCon GP55 change the demolition sequence. The machinery used, duration of work, and overall resource consumption remain identical regardless of whether the repair mortar is present. Because no distinct or measurable demolition activities are attributable solely to ReCon GP55, the environmental burdens in Module C1 are considered zero.

Module C2 - Transport to Waste Processing

Module C2 covers the transportation of end-of-life material from the demolition site to appropriate waste management facilities. After demolition, ReCon GP55 becomes part of the mixed mineral rubble generated from breaking concrete structures. This rubble is handled in bulk, exactly like other concrete and masonry demolition waste, without requiring any separate treatment for the repair mortar.

Because ReCon GP55 is supplied and used exclusively within the UAE, the end-of-life transport scenario follows local C&D waste logistics. In the UAE, demolition contractors routinely divert concrete rubble to centralised C&D recycling plants, supported by strong government-led diversion policies. Facilities operated under Dubai Municipality and Tadweer (Abu Dhabi Waste Management Company) regularly report diversion rates between 90% and 97% for concrete and masonry rubble. These rates are consistent with international benchmarks observed in countries with advanced C&D recycling systems—such as the Netherlands, Denmark, Belgium, Japan, and Singapore—where 90–99% recovery is typical.

Based on this established UAE practice, a realistic scenario is adopted in which 95% of the mixed demolition rubble is transported to a UAE C&D recycling facility, while 5% is transported

directly to an inert landfill to account for non-recoverable residues or contaminated loads. An average transport distance of 50 km is assumed for both recycling and landfill routes, reflecting typical distances between demolition sites, recycling hubs, and authorised disposal locations across the UAE. Transport is modelled using a >32-ton EURO 6 lorry, representing standard heavy-duty trucks used locally for bulk mineral waste. C2 therefore includes only the transport burdens associated with moving the mixed demolition rubble containing ReCon GP55 to the respective UAE recycling and landfill destinations.

Type	Capacity utilization	Type of vehicle	Average distance
Truck	92%	Euro 6, >32 ton truck	50 kms

Module C3 - Waste Processing

Module C3 covers the processing of demolition rubble that has been routed to recycling facilities. Once ReCon GP55 is demolished together with the concrete substrate, it becomes fully integrated within the mixed mineral waste stream, which typically includes concrete, mortar, masonry, and similar materials. This mixed rubble is delivered to a UAE construction-and-demolition (C&D) recycling plant, where standard mechanical operations are performed to recover usable aggregates.

At these facilities, processing begins with coarse sorting to remove oversized elements and contaminants, followed by primary crushing to reduce the rubble into smaller fragments. Reinforcing steel contained in the concrete elements is removed by magnetic separators and diverted for metal recycling. The remaining mineral fraction undergoes secondary crushing and multi-stage screening to produce graded recycled aggregates and fines. These operations are purely mechanical and do not require any special handling for ReCon GP55, as the hardened repair mortar behaves identically to the surrounding concrete during crushing.

Internationally, recycled concrete aggregates are widely used in road base, sub-base, trench bedding, backfilling, footpaths, landscaping fills, and non-structural concrete products. Advanced recycling regions such as the Netherlands, Denmark, Belgium, Japan, and Singapore demonstrate consistent recovery rates above 90%, supporting similar utilisation patterns. Within the GCC—and particularly the UAE—C&D recycling facilities routinely process concrete rubble into aggregates used for infrastructure works, road construction, site preparation, and municipal projects, fully aligning with the applications described above.

Module C3 therefore includes the environmental burdens associated with coarse sorting,

crushing, metal separation, and aggregate grading of the 95% recycled mineral fraction containing ReCon GP55. Material that cannot be recovered during this process proceeds to Module C4 for disposal.

Module C4 - Disposal

Module C4 covers the disposal of the demolition waste that does not enter the recycling stream. For ReCon GP55, 5% of the mixed mineral rubble generated during demolition is assumed to be transported directly from the demolition site to an inert C&D landfill within the UAE. This reflects common UAE practice, where concrete and masonry rubble is predominantly processed at large C&D recycling facilities, and only a small portion that is unsuitable for recovery is disposed of.

The disposed fraction consists solely of inert, inorganic material from the concrete substrate and the hardened ReCon GP55 repair mortar. Since these materials do not biodegrade, do not undergo chemical decomposition, and do not generate landfill gas, their environmental behaviour in landfill is stable and predictable. Any potential leachate from inert mineral waste is minimal and generally considered negligible in inert landfill operations.

UAE inert landfills manage this type of waste through earth-moving operations such as placement, spreading, compaction, and routine cover. These facilities are specifically designed for non-reactive mineral wastes and follow operational practices like inert landfills globally. Module C4 therefore includes only the operational burdens of disposing of this 5% non-recovered mineral fraction, with the remaining 95% addressed in C3 and contributing to Module D benefits.

Module D - Reuse, Recovery & Recycling Potential

Module D reports the net environmental burdens and benefits associated with the recovery of materials at end-of-life. Because ReCon GP55 becomes fully bonded within the concrete substrate during service, it does not generate a separate material stream. Its Module D contributions arise entirely from the recycled mineral rubble and the recovery of packaging materials.

At end-of-life, 95% of the mineral rubble containing ReCon GP55 is processed at UAE C&D recycling facilities, where the material is crushed and screened to produce recycled aggregate. This recycled aggregate is assumed to substitute virgin crushed gravel on a 1:1 mass basis, consistent with typical UAE applications such as road sub-base, trench bedding, general backfilling, and infrastructure preparation layers. These recovery practices align with international benchmarks (e.g., Netherlands, Denmark, Belgium, Japan, Singapore), where concrete recycling efficiencies commonly exceed 90–95%.

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Packaging materials are also modelled with high recovery rates under controlled industrial conditions where source-separation is feasible. Wooden pallets are assumed to be recovered or repurposed at 95%, supported by the Landfill Avoidance Study (Virginia Tech & USDA Forest Service, 2018), which found that approximately 95% of wooden pallets are diverted from landfill through reuse, repair, or energy recovery. LDPE liners are assigned a 95% mechanical recycling rate, representing achievable performance when plastics are clean and separated at the point of generation, as noted by industry sources such as RecycledPlastic.com and PE/PET recycling reports. Multi-wall kraft cement bags are similarly modelled with 95% recovery, representing source-separated industrial collection streams where paper fibre is recycled or used as energy recovery feedstock.

Module D therefore includes the additional burdens associated with the recycling or treatment of these recovered materials, along with the avoided impacts of substituting virgin crushed aggregate, virgin LDPE, virgin kraft paper fibre, and recovered wood products. The results represent the net combined effect of these burdens and benefits.

Process	Unit (kg)
Collection process specified by type	
ReCon GP55 in concrete collected as mixed construction waste	1
Recovery system specified by type	
Mineral demolition rubble sent for reuse / recycling as aggregate	0.95 (95%)
Mineral demolition rubble sent for energy recovery	Not applicable
Disposal specified by type	
Mineral demolition rubble sent to inert landfill	0.05 (5%)
Transportation assumptions	
Transport to recycling and landfill sites	50 km transport by Euro 6, >32 ton truck

LCA KNOWLEDGE

System Boundaries Illustration

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction / installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction & 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	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	UAE	UAE	UAE	UAE	-	-	-	-	-	-	-	-	UAE	UAE	UAE	UAE	UAE
Share of specific data	GWP > 90%			-		-	-	-	-	-	-	-	-	-	-	-	-
Variation - products	0%			-		-	-	-	-	-	-	-	-	-	-	-	-
Variation - sites	0%			-		-	-	-	-	-	-	-	-	-	-	-	-

X - Included, ND - Modules not declared.

Module A5 is included to balance out biogenic emissions from packaging.

LCA KNOWLEDGE

Cut-Off Rules

All relevant material and energy flows contributing to the manufacture of ReCon GP55 have been included in the LCA model. More than 99% of the total mass, energy use, and environmental relevance is captured. Negligible flows—those that do not influence the overall results—are excluded.

The Polluter Pays Principle and the Modularity Principle are applied to ensure that impacts are assigned to the processes where they occur and that each life cycle stage is reported independently. No known data gaps or exclusions are expected to influence the robustness of the results.

Allocation

Allocation was applied only where shared inputs were used across multiple dry-mix product lines. Electricity consumption, water use, diesel for internal handling, and non-hazardous waste generation were allocated using a mass-based approach, reflecting each product's proportional share of total annual production at the Sharjah facility.

Raw materials, admixtures, additives, and all associated transport flows were modelled using product-specific primary data, as these inputs are dosed exclusively for ReCon GP55 and do not require allocation. No economic allocation was needed, as the plant does not generate co-products during manufacturing.

Electricity

Electricity consumption in the LCA model is based on the UAE grid mix as represented in Ecoinvent v3.11 (Allocation, cut-off by classification). The UAE electricity supply is predominantly generated from natural gas, supplemented by nuclear power, oil, solar energy, and minor imports from neighbouring GCC countries. The modelled grid composition is as follows:

Energy Source	Share (%)
Natural Gas - Combined Cycle Power Plant	51.31%
Natural Gas - Conventional Power Plant	38.11%
Nuclear - Pressure Water Reactor	7.06%
Hard Coal	2.09%

Oil	0.60%
Import from Saudi Arabia	0.44%
Import from Oman	0.20%
Solar Thermal (Parabolic Trough)	0.18%
Wind (<1 MW, Onshore)	0.00003%

The climate impact associated with this electricity mix is 5.81E-01 kg CO_2e per kWh, and this factor is applied consistently to all electricity use across modules A1–A3 and relevant downstream stages. This approach ensures that electricity-related impacts accurately reflect UAE operational conditions and the energy landscape relevant to Conmix's Sharjah facility.

Calculation Rules

The LCA model for ReCon GP55 uses foreground data collected directly from Conmix's Sharjah manufacturing facility, combined with background datasets sourced from Ecoinvent v3.11 (Allocation, cut-off by classification). These datasets provide emission factors for all major inputs, including cement, additives, packaging materials, fuel production, electricity generation, and transportation. UAE-specific conditions—such as regional electricity mix, local supplier distances, and national end-of-life practices—were incorporated wherever applicable to improve representativeness.

All transport activities related to raw material supply and finished product delivery are included, based on actual supplier-to-plant and plant-to-customer road distances within the UAE. Distances were measured using Google Maps to reflect realistic logistics routes. Exclusions are limited to items with negligible relevance (typically <1%), such as administrative activities, office utilities, and maintenance of capital equipment. No maritime transport is involved, as the product is transported by road only.

Byproducts Assignment

No by-products are generated during the manufacturing of ReCon GP55. The production process involves only the transformation and blending of raw materials into a dry cementitious powder, with no secondary materials or co-products formed at any stage. Since there are no outputs other than the final product and normal manufacturing residues (which are treated as waste), allocation for by-products is not required.

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ENVIRONMENTAL PERFORMANCE

In the following tables, the environmental performance of the declared unit “1 kilogram of ReCon GP55” is presented for Conmix Ltd. Environmental impacts are calculated using EF-3.1, (ILCD).

ENVIRONMENTAL PERFORMANCE

Core Environmental impact indicators

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.

Impact Category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Climate change (GWP) - fossil	Kg CO_2e	4.30E-01	6.20E-03	1.17E-01	5.54E-01	6.63E-03	0.00E+00	0.00E+00	4.94E-03	1.71E-02	3.13E-04	-1.88E-01
Climate change (GWP) - biogenic	Kg CO_2e	0.00E+00	0.00E+00	5.23E-02	5.23E-02	0.00E+00	-5.23E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Climate change (GWP) - LULUC	Kg CO_2e	6.28E-04	2.98E-06	3.11E-05	6.62E-04	3.19E-06	0.00E+00	0.00E+00	2.38E-06	2.44E-05	1.78E-07	-5.88E-03
Climate change (GWP) - total	Kg CO_2e	4.33E-01	6.20E-03	1.18E-01	5.57E-01	6.64E-03	0.00E+00	0.00E+00	4.95E-03	1.72E-02	3.13E-04	-1.90E-01
Ozone depletion	Kg CFC-11e	3.37E-09	8.00E-11	4.53E-09	7.98E-09	9.00E-11	0.00E+00	0.00E+00	7.00E-11	2.70E-10	8.71E-12	-2.31E-09
Acidification	mol H+e	2.05E-03	1.00E-05	9.10E-04	2.97E-03	2.00E-05	0.00E+00	0.00E+00	1.00E-05	1.30E-04	2.19E-06	-1.25E-03
Eutrophication, aquatic freshwater	kg PO_4^{3-} eq	2.39E-04	1.45E-06	2.75E-05	2.68E-04	1.55E-06	0.00E+00	0.00E+00	1.16E-06	2.54E-05	8.41E-08	-1.66E-04
Eutrophication, aquatic freshwater	Kg P eq	7.77E-05	4.72E-07	8.95E-06	8.72E-05	5.05E-07	0.00E+00	0.00E+00	3.77E-07	8.28E-06	2.74E-08	-5.41E-05
Eutrophication, aquatic marine	Kg N eq	5.74E-04	3.93E-06	4.69E-04	1.05E-03	4.20E-06	0.00E+00	0.00E+00	3.13E-06	4.66E-05	8.44E-07	-3.57E-04
Eutrophication, terrestrial	mol N eq	6.22E-03	4.00E-05	4.09E-03	1.04E-02	5.00E-05	0.00E+00	0.00E+00	3.00E-05	5.00E-04	9.19E-06	-3.80E-03
Photochemical ozone formation	Kg NMVOC eq	2.05E-03	2.34E-05	1.26E-03	3.33E-03	2.50E-05	0.00E+00	0.00E+00	1.86E-05	1.61E-04	3.32E-06	-1.34E-03
Abiotic depletion, minerals & metals	Kg Sb eq	1.46E-06	1.85E-08	3.19E-07	1.79E-06	1.98E-08	0.00E+00	0.00E+00	1.48E-08	3.89E-08	4.60E-10	-8.74E-07
Abiotic depletion of fossil resources	MJ	4.17E+00	8.46E-02	1.92E+00	6.18E+00	9.05E-02	0.00E+00	0.00E+00	6.74E-02	2.64E-01	7.66E-03	-2.72E+00
Water use	m^3 depr.	1.24E-01	5.00E-04	2.07E+00	2.20E+00	5.35E-04	0.00E+00	0.00E+00	3.99E-04	5.75E-02	3.39E-04	-9.75E-02

The results of the environmental impact indicators — Abiotic depletion, Water use, and all optional indicators except Particulate matter and Ionizing radiation, human health — shall be used with care, as the uncertainties on these results are high or there is limited experience with the indicator. Reading example: 1.57E-03 = 1.57 × 10^{-3} = 0.00157.

ENVIRONMENTAL PERFORMANCE

Additional environmental impact indicators

Impact Category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Particulate matter	Incidence	3.86E-08	6.33E-10	3.05E-09	4.23E-08	6.77E-10	0.00E+00	0.00E+00	5.05E-10	9.84E-09	5.04E-11	-2.95E-08
Ionizing radiation, human health	Kbq U-235 eq	9.33E-03	8.11E-05	3.93E-03	1.33E-02	8.68E-05	0.00E+00	0.00E+00	6.47E-05	4.16E-04	4.59E-07	-7.40E-03
Ecotoxicity (freshwater)	CTUe	1.67E+00	1.16E-02	6.00E-01	2.28E+00	1.24E-02	0.00E+00	0.00E+00	9.24E-03	8.62E-02	5.50E-04	-1.04E+00
Human toxicity, cancer effects	CTUh	1.24E-09	1.04E-12	2.68E-11	1.26E-09	1.11E-12	0.00E+00	0.00E+00	8.26E-13	3.76E-12	5.68E-14	-1.14E-06
Human toxicity, non-cancer effects	CTUh	3.22E-09	6.16E-11	8.75E-10	4.16E-09	6.59E-11	0.00E+00	0.00E+00	4.91E-11	1.48E-10	1.28E-12	-1.82E-09
Land use related impacts/soil quality	Dimensionless	1.12E+02	9.72E-02	2.06E-01	1.12E+02	1.04E-01	0.00E+00	0.00E+00	7.75E-02	2.87E-01	1.51E-02	-1.06E+02

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, or radioactive waste disposal in underground facilities. Potential ionizing radiation from soil, radon, and some construction materials is also not measured by this indicator.

GWP-GHG Indicators

Impact Category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-GHG	Kg CO_2e	4.33E-01	6.20E-03	6.56E-02	5.05E-01	6.64E-03	5.23E-02	0.00E+00	4.95E-03	1.72E-02	3.13E-04	-1.90E-01

This indicator includes all greenhouse gases, excluding biogenic carbon dioxide uptake and emissions, as well as biogenic carbon stored in the product, as defined by IPCC AR6 (2021). The indicator aligns closely with the Global Warming Potential (GWP) outlined in EN 15804:2012+A2:2019, incorporating updated characterization factors and environmental impact indicators.

Resource Use Indicators

Impact Category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Renewable PER used as energy	MJ	1.56E+01	1.30E-03	1.89E-02	1.56E+01	1.40E-03	0.00E+00	0.00E+00	1.04E-03	7.53E-03	7.24E-05	-1.47E+01
Renewable PER used as materials	MJ	1.31E-03	0.00E+00	1.08E-04	1.42E-03	0.00E+00	-1.42E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-6.18E-04

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Total use of renewable PER	MJ	1.56E+01	1.30E-03	1.90E-02	1.56E+01	1.40E-03	-1.42E-03	0.00E+00	1.04E-03	7.53E-03	7.24E-05	-1.47E+01
Non-renewable PER used as energy	MJ	4.17E+00	5.39E-06	1.92E+00	6.09E+00	9.05E-02	0.00E+00	0.00E+00	6.74E-02	2.64E-01	7.66E-03	-2.72E+00
Non-renewable PER used as materials	MJ	1.10E-06	0.00E+00	4.07E-08	1.14E-06	0.00E+00	-1.14E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.13E-06
Total use of non-renewable PER	MJ	4.17E+00	5.39E-06	1.92E+00	6.09E+00	9.05E-02	-1.14E-06	0.00E+00	6.74E-02	2.64E-01	7.66E-03	-2.72E+00
Use of secondary materials	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m^3	0.00E+00	0.00E+00	1.24E-04	1.24E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Waste Indicators

Impact Category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-hazardous waste	Kg	0.00E+00	0.00E+00	1.39E-01	1.39E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.00E-02	0.00E+00
Radioactive waste	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Output Flow Indicators

Impact Category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Components for reuse	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.79E-01
Materials for recycling	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.50E-01	0.00E+00	9.79E-01

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Materials for energy recovery	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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	0.00E+00	0.00E+00	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	0.00E+00
Biogenic carbon content in accompanying packaging	Kg C	1.43E-02

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO2. "Reading example: 1.57E-03 = $1.57*10^{-3}$ = 0.00157"

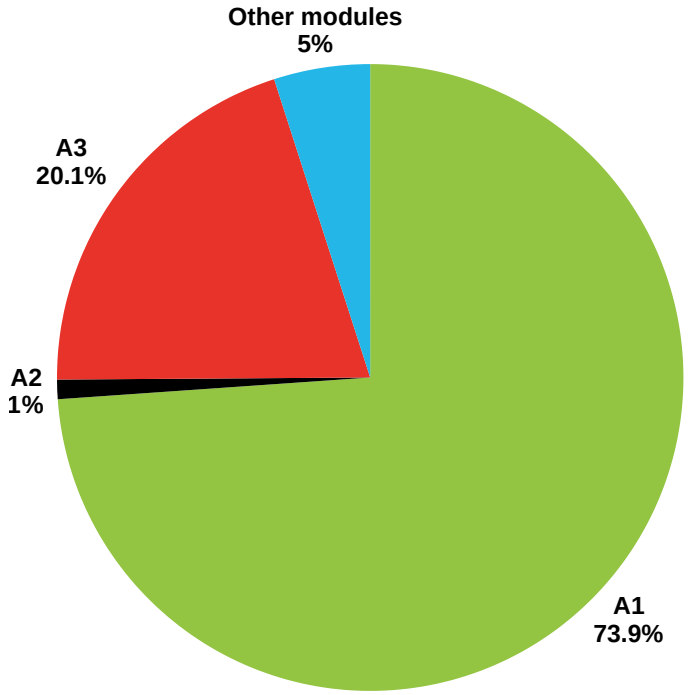
Disclaimer: “According to the **EN 15804:2012+A2:2019** standard, the LCIA results are relative expressions translating impacts into environmental themes such as climate change, ozone depletion, etc. (midpoint impact categories). Thus, the LCIA results do not predict impacts on category endpoints such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

ENVIRONMENTAL PERFORMANCE

Interpretation

The results indicate that Modules A1–A3 are the dominant contributors to the total GWP for ReCon GP55, with A1 accounting for 73.85% of overall impacts. This is primarily driven by the production of Ordinary Portland Cement, Ground Granulated Blast Furnace Slag, limestone sand, and silica fume used in the repair mortar formulation. Manufacturing activities in Module A3 contribute a further 20.13%, reflecting electricity consumption for dry blending, admixture mixing, sieving, internal material handling, and packaging operations at the Sharjah facility. Transport-related impacts in Modules A2 and A4 together represent less than 3% of total GWP, as all raw materials and finished products are sourced and distributed within the UAE. End-of-life stages (C1–C4) contribute 3.83%, consistent with the inert behaviour of hardened repair mortars. Overall, A1 remains the primary hotspot, highlighting opportunities for optimising binder composition and reducing clinker intensity.

Life Cycle Stage Contribution to GWP (kg CO_2e per 1 kg ReCon GP55)



ENVIRONMENTAL PERFORMANCE

Mandatory Statements

Explanatory materials are available from the EPD Owner and/or LCA Author. The verifier and Program Operator make no claims and bear no responsibility regarding the legality of the study. Sole ownership, liability, and responsibility for the EPD lie with the EPD Owner. The LCA Author is not liable for manufacturer-provided information, life cycle data, or supporting evidence.

EPDs within the same product category, but issued by different EPD programs, may not be comparable. For valid comparison, both EPDs must be based on the same PCR (including version number), or on fully-aligned PCRs. Products must have identical function, technical performance, and use cases (e.g. the same declared or functional unit); share equivalent system boundaries, data descriptions, and data quality standards; use comparable collection methods and allocation rules; include matching content declarations; and be valid at the time of comparison.

Information related to EPD of multiple products

This is not an EPD of multiple products.

Information related to Sector EPD

This is not a sector EPD.

Differences vs previous versions

This is the first version of the EPD.

REVIEW AND VERIFICATION

Program Operator	International Climate Intelligence System 71-75 Shelton Street Covent Garden London, WC2H 9JQ United Kingdom
Registration Number	ICIS-202603-121
Publication Date	25-03-2026
Valid Until	24-03-2031
Geographical Scope	United Arab Emirates (UAE)

Product category rules (PCR): PCR 2026:18 Construction products (EN15804:2012+A2:2019/ AC:2021) Version 1.2.6 dated 21-Jan-2026

PCR review was conducted by: International Climate Intelligence System

Independent verification of the declaration and data, according to ISO 14025:2006 and ISO 14040:

EPD Process Certification (internal) EPD Verification (external) ☑

Third party verifier: Luis Manuel, International Climate Intelligence System (ICIS)

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ACRONYMS

Acronym	Meaning
kg CO_2e	Kilograms of carbon-dioxide equivalent
kg CFC-11e	Kilograms of Chlorofluorocarbon-11 equivalent
mol H+e	Moles of hydrogen ion equivalent
kg PO_4^{3-} eq	Kilograms of phosphate equivalent
kg P eq	Kilograms of phosphorus equivalent
kg N eq	Kilograms of nitrogen equivalent
mol N eq	Moles of nitrogen equivalent
kg NMVOC eq	Kilograms of non-methane volatile organic compound equivalent
kg Sb eq	Kilograms of antimony equivalent
MJ	Megajoules
m^3 depr.	Cubic meters of water deprived
incidence	Unit representing human health impact related to particulate matter exposure
Kbq U-235 eq	Kilo-becquerels of Uranium-235 equivalent
CTUe	Comparative Toxic Unit for ecosystems
CTUh	Comparative Toxic Unit for humans
dimensionless	Unitless characterization factor — used for land-use/soil quality impacts
kg C	Kilograms of biogenic carbon contained in product or packaging

STANDARDS AND REFERENCES

Standards & Methodological Frameworks

- EN 15804:2012 + A2:2019 / AC:2021 – Sustainability of construction works – Core rules for environmental product declarations of construction products.
- ISO 14025:2006 – Environmental labels and declarations – Type III environmental declarations – Principles and procedures.
- ISO 14040:2006 – Life cycle assessment – Principles and framework.
- ISO 14044:2006 – Life cycle assessment – Requirements and guidelines.

PCR & Program Documents

- PCR 2026:18 Construction Products, Version 1.2.6 – International Climate Intelligence System (EN 15804+A2 aligned).
- EPD General Program Instructions (GPI) of International Climate Intelligence System, v2.0, 2023.

Databases, Tools & Modelling Sources

- Ecoinvent v3.11, system model: Allocation, cut-off by classification.
- Air.e.LCA Software v3.20.1.0 by Solid Forest – Used for LCA modelling and impact calculations.
- IPCC AR6 (2021) Characterization Factors – Applied for GWP indicators (where relevant).
- EF 3.1 (Environmental Footprint 3.1 method) – Used for all midpoint impact indicators.

Transport Calculation Tools

- Google Maps – Used to calculate road transport distances for raw materials, diesel and finished product delivery.

End-of-Life & Recycling

- UAE Construction & Demolition Recycling Facilities – Dubai Municipality, Tadweer (Abu Dhabi), BEEAH (Sharjah), and other emirates.
- International Construction & Demolition Recycling Benchmarks – Netherlands, Denmark, Belgium, Japan, Singapore.
- Landfill Avoidance Study, Virginia Tech & USDA Forest Service, 2018 – Recovery rates for wooden pallets.
- RecycledPlastic.com – Plastics recycling industry data for LDPE recovery rates.

Building strength with Conmix at every step