SURFACE TREATMENTS

ENVIRONMENTAL PRODUCT DECLARATION

JETCURE R

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-202603-122
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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 JetCure R, 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 JetCure R.

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

JetCure R

Product Type

UV Stable, High Quality, Resin Based Curing Compound

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

Aqueous acrylic polymer emulsion blending

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
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United Kingdom
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www.climateintell.com

Product Group Classification

UN CPC 3744 (Cement mortars & grouts)

Environmental Performance Summary (A1-A3)

Indicator	Result	Unit
Climate change (GWP) - total	2.02E+00	Kg CO_2e
Climate change (GWP) - fossil	2.01E+00	Kg CO_2e
Ozone Depletion (ODP)	4.29E-08	Kg CFC-11e
Abiotic depletion of fossil resources	3.22E+01	MJ

Hotspot Summary

Process	Share of Total GWP (%)
Raw Material Supply (A1)	92.85
Raw Material Transportation (A2)	0.03
Manufacturing (A3)	5.76
Remaining Modules (A4, C1-C4)	1.36

PRODUCT INFORMATION

Where This Adds Value

Scheme / Area	Relevance to JetCure R
LEED v4.1 (USGBC) – MR Credit: EPDs (aligned with emerging LEED v5 requirements)	The Type III EPD for JetCure R supports Material Disclosure credits and contributes toward whole-building embodied carbon reporting for projects implemented in the UAE under LEED certification.
Estidama Pearl Rating System (Abu Dhabi)	Provides verified environmental data required for material transparency pathways. JetCure R is used as a concrete curing compound for slabs, pavements, and structural elements on Pearl-rated projects within Abu Dhabi.
GSAS (Qatar)	Supports consultant-led material benchmarking and internal sustainability assessments for projects in the UAE that reference GSAS/QSAS methodologies. JetCure R's quantified impacts enable transparent comparison during material approval.
BREEAM (UK/UAE Adaptations)	EPD contributes to MAT 01 and MAT 02 credits for responsible sourcing and building LCA on UAE projects adopting BREEAM or BREEAM-aligned frameworks.
Whole-Building LCA Tools	The cradle-to-gate with options LCA model for JetCure R can be directly used in digital building LCA models for UAE building and infrastructure projects.
Government & Giga-Project Requirements	UAE government entities, developers, and major infrastructure clients increasingly require verified product-specific EPDs. JetCure R's EPD supports acceptance during material pre-qualification.
Procurement Transparency (GCC Contractors)	Supports sustainability submissions for UAE-based contractors, consultants, and material engineers who require documented environmental impacts to comply with tender specifications.

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

JetCure R is a high-performance, single-component, acrylic polymer–based membrane-forming curing compound formulated to ensure optimum curing and surface protection of freshly placed concrete. Supplied as a ready-to-use liquid, it is applied by spray to form a continuous moisture-retaining film that limits water evaporation and promotes effective cement hydration. Its formulation is dominated by water and acrylic copolymer emulsion, together with performance additives that provide uniform film formation, non-yellowing characteristics, and stable curing efficiency across a wide range of ambient conditions.

The product is designed for curing applications where reliable moisture retention, surface sealing, and durable concrete performance are required. JetCure R reduces early-age shrinkage, improves surface integrity, and supports the development of strength and durability in structural and non-structural concrete elements. Typical uses include curing of slabs, beams, columns, pavements, runways, precast units, and exposed concrete surfaces, particularly where subsequent application of acrylic, epoxy, polyurethane, or polymer-modified coatings is anticipated. The product is supplied in liquid form in multiple container sizes, allowing flexible application for both small-scale works and large-area concrete placements.

Sectors & Corresponding Uses

Sector	Application / Use Case
Industrial & Plant Construction	Curing of concrete floors, plinths, and equipment foundations to ensure proper hydration and surface sealing prior to service
Building Construction	Curing of slabs, beams, columns, and walls to control moisture loss and support strength development
Precast Concrete Manufacturing	Curing of precast elements to achieve consistent surface quality and early strength development
Infrastructure & Transport Projects	Curing of pavements, bridge decks, runways, culverts, and exposed concrete surfaces
Energy & Heavy-Duty Facilities	Curing of large-area concrete pours, foundations, and external slabs to enhance durability and long-term performance

PRODUCT DESCRIPTION

Technical Specifications

Parameter	Details / Specification
Form	Liquid (Milky Emulsion)
Mixing Method	Ready-to-use; stir or roll container before use to ensure uniform dispersion
Component	Single-component acrylic polymer emulsion
Colour	Clear (upon dry) and White
Curing Efficiency	> 90% (BS 7542) < 0.55kg/m² (ASTM C 156)
Specific Gravity	1.00 ± 0.05 kg/ltr @ 25°C (Clear) (ASTM D1475)
Working Time	Approx. 30 minutes
pH	7-9
Coverage	Approx. 4–5 m²/litre/coat (depending on surface texture and porosity)
Pack Size	5 L, 20 L, and 200 L containers
Application Method	Spray application to freshly finished concrete surfaces to form a continuous membrane; used for curing of slabs, beams, columns, pavements, precast elements, and exposed concrete

MANUFACTURING DETAILS

The production of JetCure R at Conmix begins with material inspection of key raw materials, primarily water and acrylic copolymer emulsion, together with performance additives that control film formation, curing efficiency, and storage stability. All incoming materials undergo quality verification to ensure conformity with internal specifications before being transferred to sealed containers or bulk storage tanks, depending on their physical form and handling requirements.

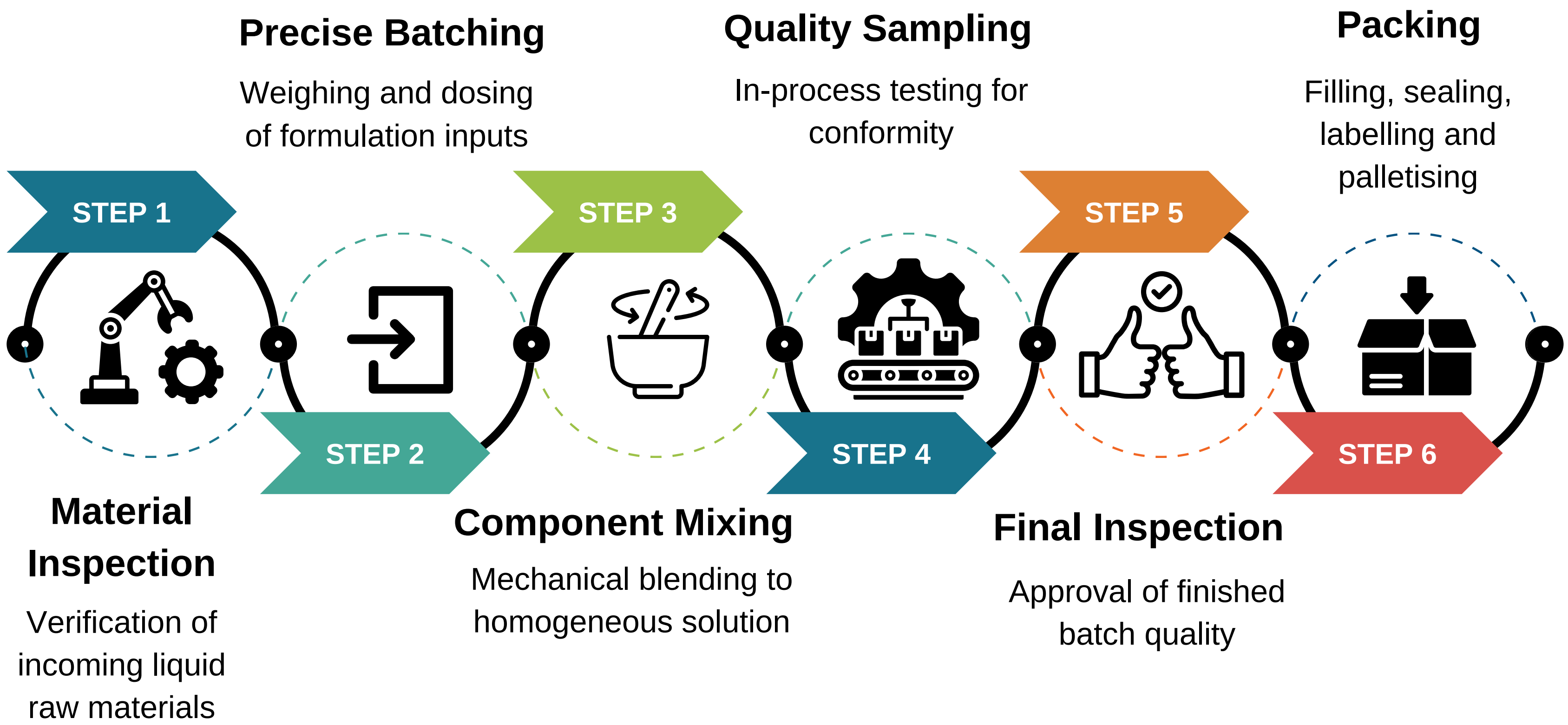
During precise batching, each raw material is weighed and dosed according to the defined formulation to ensure consistent product composition. The batched materials are then subjected to component mixing in dedicated mixing vessels, where mechanical agitation is applied to achieve a homogeneous acrylic emulsion with uniform consistency. This processing stage ensures proper dispersion of the polymer and additives and contributes to JetCure R's stable curing performance, uniform film formation, and reliable moisture-retention characteristics. No chemical reactions or polymerisation occur during manufacturing; the process is limited to physical blending.

Following mixing, representative samples are taken for quality sampling and tested for key parameters such as appearance, consistency, specific gravity, and basic physical properties to confirm compliance with the technical datasheet. The finished batch undergoes final inspection prior to filling. Conforming material is then packaged into HDPE containers of specified sizes, sealed, labelled, batch-coded, palletised, stretch-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.

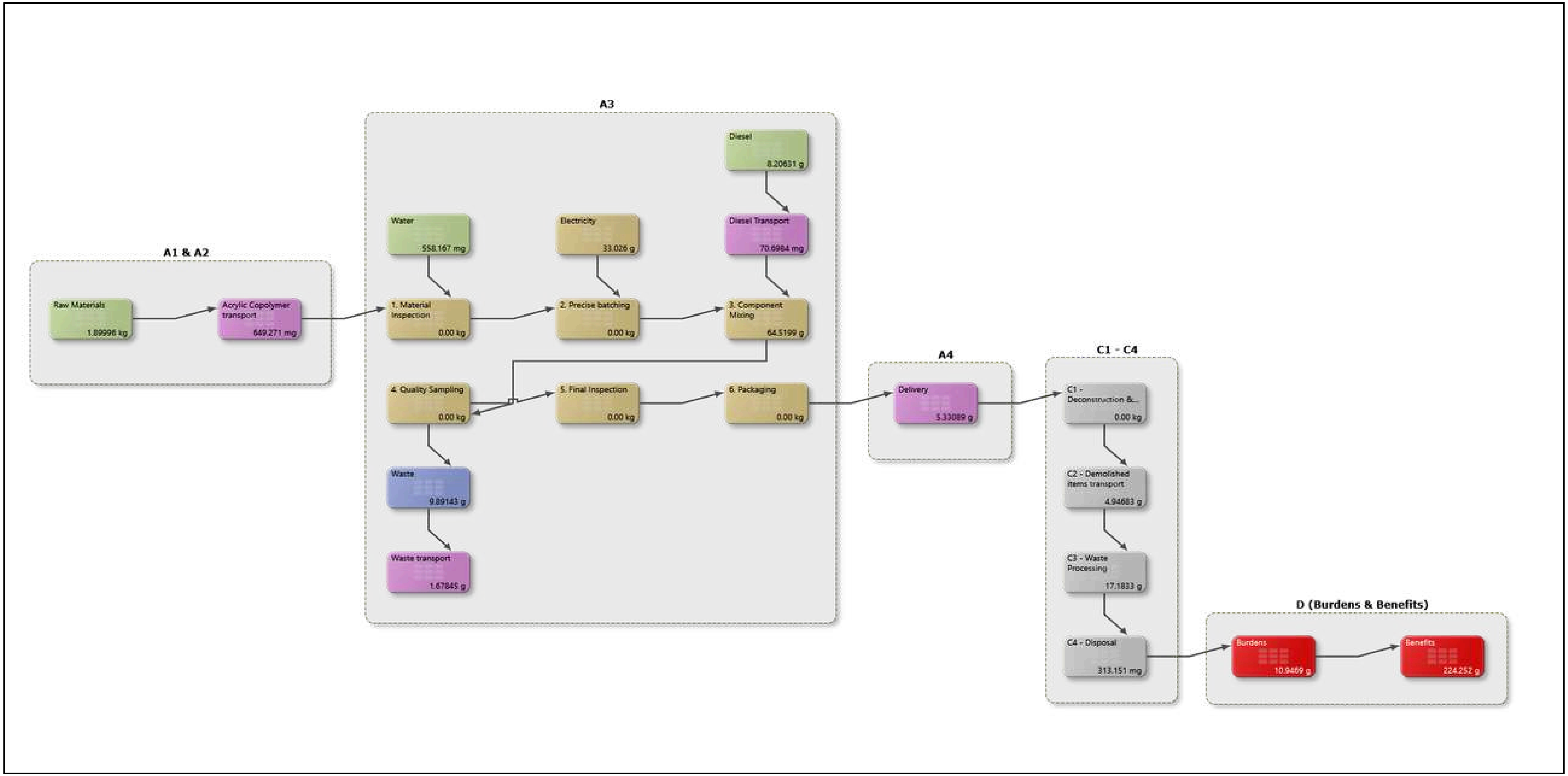
MANUFACTURING DETAILS

Schematic overview of JetCure R manufacturing process



MANUFACTURING DETAILS

Screenshot of JetCure R LCA model from LCA software



CONTENT DECLARATION

The content declaration provides a transparent breakdown of all raw materials used in the formulation of JetCure R, expressed per 1 kg of product. The formulation is primarily composed of water and acrylic copolymer emulsion, supported by small quantities of performance-enhancing additives that provide uniform film formation, curing efficiency, storage stability, and surface sealing performance. 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)
Water	0.78	0	0	0	0
Acrylic Copolymer	0.21	0	0	0	0
Additives & Fillers	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, JetCure R 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—primarily water, acrylic copolymer emulsion, and minor performance additives—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 JetCure R include wooden pallets, HDPE containers, and LDPE stretch wrap. These materials serve distinct functions within the product supply chain—wooden pallets provide stability during handling and transport, HDPE containers securely contain the liquid product, and LDPE stretch wrap protects and stabilises palletised loads. 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
HDPE Containers	0% biogenic	0 kg C/kg	Petroleum-based plastic (polyethylene); contains no biogenic carbon
LDPE Stretch Wrap	0% biogenic	0 kg C/kg	Petroleum-based plastic; contains no biogenic carbon

Wooden pallets contain significant biogenic carbon because they originate from biomass; HDPE containers and LDPE stretch wrap do 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	33.03	1.25E-02	Reuse / Recycle / Energy Recovery
HDPE Containers	5.00E-02	66.06	0.00E+00	Recycle / Energy Recovery
LDPE Stretch Wrap	6.94E-04	0.91	0.00E+00	Recycle / Energy Recovery
Total	**7.57E-02**	**100**	**1.25E-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**.

Declared Unit

The declared unit for this EPD is 1 kg of JetCure R 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 JetCure R 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 JetCure R 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 practices in the UAE, ensuring geographical relevance of the final results.

Technological Representativeness: The manufacturing process modelled for JetCure R accurately reflects the actual production technology used at Conmix Ltd.'s Sharjah facility. The product is produced through controlled batching and physical blending of water, acrylic copolymer emulsion, and performance additives using industrial mixing and dosing equipment, followed by quality control and packaging operations. No chemical reactions, polymerisation, or curing occur during manufacturing, and no heating or high-temperature processing steps are applied. The technological assumptions used in the LCA are therefore representative of real operations at the plant, ensuring that the results reflect site-specific production conditions.

LCA KNOWLEDGE

LCA Software and Database

The life cycle model for JetCure R 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 JetCure R. The primary constituents—water and acrylic copolymer emulsion—are procured from established suppliers within the United Arab Emirates, ensuring consistent quality and suitability for use in water-based curing compound formulations. Additional components such as performance additives are likewise sourced from UAE-based suppliers according to 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 water, acrylic copolymer emulsion, and performance additives—are sourced from suppliers within the UAE, reflecting a fully localised supply chain for JetCure R. All inbound movements are modelled using >32-ton Euro 6–equivalent road transport, representing typical logistics for bulk liquids, palletised chemical components, and packaged additives. 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 JetCure R product at the Conmix facility in Sharjah. Production follows a controlled formulation workflow comprising six sequential steps: Material Inspection, Precise Batching, Component Mixing, Quality Sampling, Final Inspection, and Packaging. Each stage ensures accurate dosing, homogeneous blending of liquid components, consistent batch quality, and compliance with internal technical specifications.

Environmental loads in this module include electricity use for mixing and material handling; fuel use from internal forklift movement; water used for equipment wash-down; and small quantities of solid waste generated from container residues and routine housekeeping. Wastewater from cleaning operations is directed to appropriate treatment. This module also accounts for all ancillary inputs used on-site, including packaging materials (HDPE containers, LDPE stretch wrap, and wooden pallets). All emissions from equipment operation, internal transport, and waste handling are included within the A3 boundary.

Module A4 - Delivery

Module A4 accounts for the transportation of finished JetCure R from the Conmix manufacturing facility in Sharjah to customer locations. As JetCure R is supplied exclusively to projects within the United Arab Emirates, outbound transport is modelled using domestic road freight only. All deliveries are assumed to be carried out by heavy-duty diesel trucks operating on typical UAE road networks, representing realistic logistics for distribution to construction sites, precast yards, and industrial facilities.

Packaged in HDPE containers and palletised for shipment, the product is transported as consolidated loads with high capacity utilisation. Transport distances are based on representative average delivery routes covering building projects, infrastructure works, and concrete production sites across the UAE. Environmental impacts in this module therefore include diesel consumption, tailpipe emissions, and load-dependent fuel use associated with outbound road deliveries from the manufacturing facility to customer sites.

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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

Module C1 - Deconstruction and Demolition

Module C1 addresses the environmental impacts associated with deconstruction or demolition of the product at end-of-life. JetCure R is applied as a thin, membrane-forming curing compound on concrete surfaces, where it dries and forms a continuous film that becomes firmly adhered to the surface of the concrete. Once cured, the product functions as an integral surface layer and does not exist as a separate or detachable component that can be removed independently from the concrete substrate.

At the end of the service life of the structure, demolition is carried out on the concrete element using standard mechanical methods such as hydraulic breakers, excavators, or crushing equipment. The cured JetCure R film undergoes the same mechanical breakup as the surrounding concrete surface and remains associated with the concrete rubble during demolition activities. No additional tools, time, fuel, or labour are required specifically to remove or manage the curing compound.

For example, when slabs, beams, pavements, or other concrete elements treated with JetCure R are demolished, contractors do not distinguish between the concrete surface and the thin cured membrane; the demolition process remains unchanged regardless of its presence. Consequently, the use of JetCure R does not alter demolition practices or increase resource consumption. As no distinct demolition processes are attributable solely to the product, the environmental impacts associated with Module C1 are considered zero.

Module C2 - Transport to Waste Processing

Module C2 covers the transport of end-of-life material from the demolition site to waste management facilities. After demolition, JetCure R becomes part of the mixed mineral construction and demolition (C&D) waste generated from breaking concrete elements on which the curing compound has been applied. As JetCure R is manufactured in the UAE and supplied exclusively to projects within the UAE, demolition waste is assumed to be managed entirely within the UAE waste management system.

Across the UAE, authorised C&D recycling facilities operated by Dubai Municipality, Tadweer (Abu Dhabi), BEEAH (Sharjah), and other emirates routinely process large volumes of concrete and masonry waste, with diversion rates commonly reported in the range of approximately 90% to 97% for mineral construction waste. For the purpose of LCA modelling, a harmonised national end-of-life transport and processing scenario is applied.

Reflecting typical UAE waste management performance, 95% of the mixed demolition rubble containing JetCure R is assumed to be transported to a C&D recycling facility, with the remaining 5% directed to inert landfill due to contamination, processing constraints, or unsuitable material fractions. A one-way transport distance of 50 km is assumed for both recycling and landfill routes, representing typical haulage distances between demolition sites and authorised waste facilities. Transport is modelled using a >32-ton EURO 6 lorry, representative of vehicles commonly used for bulk mineral waste transport.

Module C2 therefore accounts exclusively for the environmental impacts associated with transporting mixed demolition rubble containing JetCure R from the demolition site to authorised recycling and landfill facilities within the UAE.

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 enters recycling. Once JetCure R is demolished together with the concrete element on which it has been applied, it becomes part of the mixed mineral construction-and-demolition (C&D) waste stream, typically comprising concrete, mortar, and other mineral-based materials. As the product is manufactured in the UAE and supplied exclusively to projects within the UAE, the recyclable fraction is assumed to be processed through authorised C&D recycling and aggregate processing facilities within the country.

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At these facilities, waste processing generally begins with coarse sorting to remove oversized debris and non-mineral contaminants, followed by primary crushing of the mineral rubble. Magnetic separation is used to recover embedded reinforcing steel or metallic fragments, which are diverted to metal recycling streams. The remaining mineral fraction then undergoes secondary crushing and multi-stage screening to produce graded recycled aggregates and fines. No dedicated processing steps are required for JetCure R, as the thin cured acrylic film remains adhered to the concrete surface and becomes mechanically incorporated into the concrete rubble, exhibiting behaviour comparable to inert surface coatings during crushing and screening operations.

Recycled aggregates generated from C&D processing are commonly utilised in applications such as road base and sub-base layers, utility trench backfilling, embankments, footpaths, and general fill, supporting circular economy and landfill diversion objectives in the UAE. For the purpose of LCA modelling, these reuse pathways are represented through a harmonised recycling scenario.

Module C3 therefore accounts for the environmental impacts associated with the crushing, sorting, and screening of the 95% of mixed mineral demolition waste containing JetCure R that is assumed to be directed to recycling. Material fractions that cannot be recovered are addressed under Module C4.

Module C4 - Disposal

Module C4 covers the disposal of the portion of demolition waste that does not enter the recycling route. For JetCure R, 5% of the mixed mineral demolition rubble is assumed to be transported from the demolition site to an inert construction-and-demolition (C&D) landfill within the UAE. This assumption reflects prevailing national waste management practices, where the majority of concrete and masonry waste is directed to recycling or reuse, and only a limited fraction that is contaminated or unsuitable for processing is disposed of.

The disposed material consists predominantly of inert mineral waste originating from broken concrete elements that had been treated with JetCure R. Once cured, JetCure R forms a thin, solid acrylic film adhered to the concrete surface, which becomes physically bound to the mineral rubble after demolition. The cured polymer is non-biodegradable, does not generate landfill gas, and exhibits very low chemical reactivity under landfill conditions. Any potential leaching from this composite material is expected to be minimal, and landfill operations primarily involve placement, spreading, compaction, and routine dust control measures.

Inert C&D landfills in the UAE operate as engineered disposal sites managed in accordance with municipal and national waste regulations, employing practices comparable to those used for inert construction waste internationally. Module C4 therefore includes only the environmental burdens associated with the disposal of this 5% non-recycled fraction, while the remaining 95% of the demolition waste containing JetCure R is addressed under Module C3 and contributes to recovery pathways considered in Module D.

Module D - Reuse, Recovery & Recycling Potential

Module D reports the net environmental burdens and benefits associated with the recovery of materials that leave the system boundary at end-of-life. As JetCure R is applied as a thin, membrane-forming acrylic curing compound that becomes permanently adhered to concrete surfaces, its contributions in Module D arise from the recovery of mixed mineral demolition rubble and from the recovery of associated packaging materials.

At end-of-life, 95% of the mixed mineral rubble containing JetCure R is assumed to be processed at authorised construction-and-demolition (C&D) recycling facilities in the UAE, where it is crushed and screened into recycled aggregate that substitutes virgin crushed aggregate on a 1:1 mass basis. This assumption reflects prevailing UAE practice, where the majority of concrete and masonry waste is diverted to recycling and reuse applications such as road sub-base, trench backfilling, embankments, landscaping layers, and infrastructure works. Comparable recovery outcomes are reported in regions with mature C&D recycling systems such as the Netherlands, Denmark, Belgium, Japan, and Singapore, which frequently achieve recovery rates above 90% for mineral construction waste; these international benchmarks are cited for contextual reference only, while modelling applies a harmonised scenario consistent with typical UAE performance.

Packaging materials also contribute to Module D. Wooden pallets used for the transport of JetCure R are modelled with a 95% recovery rate, supported by the Landfill Avoidance Study conducted by Virginia Tech in collaboration with the USDA Forest Service (2018), which reports that approximately 95% of wooden pallets are reused, repaired, recycled, or recovered for energy at end-of-life. HDPE containers used for product packaging are assigned a 95% recycling rate, reflecting the high recovery performance of rigid industrial plastic packaging reported by PlasticsEurope and supported by European Commission circular economy guidance for source-separated commercial plastics. LDPE stretch wrap used for pallet stabilisation is similarly modelled with a 95% recycling rate, consistent with recycling performance reported for clean industrial film streams by WRAP (UK) and corroborated by plastics recycling industry data for post-industrial LDPE films.

Module D therefore includes the additional environmental burdens associated with the recycling

LCA KNOWLEDGE

or treatment of these recovered materials, together with the avoided impacts from substituting virgin crushed aggregate, virgin HDPE, virgin LDPE, and recovered wood products. The results reported for Module D represent the net combined effect of these burdens and benefits occurring beyond the system boundary.

Process	Unit (kg)
Collection process specified by type	
JetCure R 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 JetCure R 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 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 JetCure R 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%

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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 JetCure R 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 major inputs, including acrylic copolymer emulsion, water, performance additives, packaging materials, fuel production, electricity generation, and transportation. Regionally representative conditions—such as electricity mixes, supplier distances, and country-level end-of-life practices for the United Arab Emirates—were incorporated where 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. Road distances were measured using Google Maps. Exclusions are limited to items with negligible relevance (typically <1%), such as administrative activities, office utilities, and maintenance of capital equipment. Road transport is therefore fully represented within the geographical scope of product distribution.

Byproducts Assignment

No by-products are generated during the manufacturing of JetCure R. The process involves controlled batching and formulation of a water-based acrylic curing compound, with no co-products formed at any stage. The only outputs are the packaged finished product and normal manufacturing residues treated as waste. Therefore, no allocation for by-products is required.


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ENVIRONMENTAL PERFORMANCE

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

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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	1.89E+00	6.49E-04	1.17E-01	2.01E+00	5.33E-03	0.00E+00	0.00E+00	4.94E-03	1.71E-02	3.13E-04	-2.09E-01
Climate change (GWP) - biogenic	Kg CO_2e	0.00E+00	0.00E+00	4.58E-02	4.58E-02	0.00E+00	-4.58E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Climate change (GWP) - LULUC	Kg CO_2e	1.20E-03	3.12E-07	3.11E-05	1.23E-03	2.56E-06	0.00E+00	0.00E+00	2.38E-06	2.44E-05	1.78E-07	-5.92E-03
Climate change (GWP) - total	Kg CO_2e	1.90E+00	6.49E-04	1.18E-01	2.02E+00	5.33E-03	0.00E+00	0.00E+00	4.95E-03	1.72E-02	3.13E-04	-2.13E-01
Ozone depletion	Kg CFC-11e	3.84E-08	8.66E-12	4.53E-09	4.29E-08	7.00E-11	0.00E+00	0.00E+00	7.00E-11	2.70E-10	8.71E-12	-2.47E-09
Acidification	mol H+e	8.19E-03	1.54E-06	9.10E-04	9.10E-03	1.00E-05	0.00E+00	0.00E+00	1.00E-05	1.30E-04	2.19E-06	-1.36E-03
Eutrophication, aquatic freshwater	kg PO_4^{3-} eq	1.13E-03	1.52E-07	2.75E-05	1.16E-03	1.25E-06	0.00E+00	0.00E+00	1.17E-06	2.54E-05	8.41E-08	-1.81E-04
Eutrophication, aquatic freshwater	Kg P eq	3.69E-04	4.95E-08	8.95E-06	3.78E-04	4.06E-07	0.00E+00	0.00E+00	3.80E-07	8.28E-06	2.74E-08	-5.88E-05
Eutrophication, aquatic marine	Kg N eq	2.00E-03	4.11E-07	4.69E-04	2.47E-03	3.38E-06	0.00E+00	0.00E+00	3.13E-06	4.66E-05	8.44E-07	-3.83E-04
Eutrophication, terrestrial	mol N eq	1.63E-02	4.42E-06	4.01E-03	2.04E-02	4.00E-05	0.00E+00	0.00E+00	3.00E-05	5.00E-04	9.19E-06	-4.05E-03
Photochemical ozone formation	Kg NMVOC eq	6.57E-03	2.45E-06	1.26E-03	7.84E-03	2.01E-05	0.00E+00	0.00E+00	1.86E-05	1.61E-04	3.32E-06	-1.42E-03
Abiotic depletion, minerals & metals	Kg Sb eq	1.58E-05	1.94E-09	3.19E-07	1.61E-05	1.59E-08	0.00E+00	0.00E+00	1.48E-08	3.89E-08	4.60E-10	-1.02E-06
Abiotic depletion of fossil resources	MJ	3.03E+01	8.85E-03	1.92E+00	3.22E+01	7.27E-02	0.00E+00	0.00E+00	6.74E-02	2.64E-01	7.66E-03	-2.96E+00
Water use	m^3 depr.	4.71E-01	5.24E-05	2.07E+00	2.54E+00	4.30E-04	0.00E+00	0.00E+00	3.99E-04	5.75E-02	3.39E-04	-1.03E-01

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.

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Additional environmental impact indicators

Impact Category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Particulate matter	Incidence	1.15E-07	6.62E-11	3.05E-09	1.18E-07	5.44E-10	0.00E+00	0.00E+00	5.05E-10	9.84E-09	5.04E-11	-3.22E-08
Ionizing radiation, human health	Kbq U-235 eq	3.96E-02	8.49E-06	3.93E-03	4.35E-02	6.97E-05	0.00E+00	0.00E+00	6.47E-05	4.16E-04	4.59E-07	-9.27E-03
Ecotoxicity (freshwater)	CTUe	5.08E+02	1.21E-03	6.00E-01	5.08E+02	9.96E-03	0.00E+00	0.00E+00	9.24E-03	8.62E-02	5.50E-04	-1.14E+00
Human toxicity, cancer effects	CTUh	1.67E-09	1.08E-13	2.68E-11	1.69E-09	8.91E-13	0.00E+00	0.00E+00	8.26E-13	3.76E-12	5.68E-14	-1.16E-09
Human toxicity, non-cancer effects	CTUh	3.16E-08	6.45E-12	8.75E-10	3.25E-08	5.29E-11	0.00E+00	0.00E+00	4.91E-11	1.48E-10	1.28E-12	-2.10E-09
Land use related impacts/soil quality	Dimensionless	1.14E+02	1.02E-02	2.06E-01	1.15E+02	8.35E-02	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	1.90E+00	6.49E-04	7.21E-02	1.97E+00	5.33E-03	4.58E-02	0.00E+00	4.95E-03	1.72E-02	3.13E-04	-2.13E-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	1.61E+01	1.36E-04	1.89E-02	1.61E+01	1.12E-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	3.15E-03	0.00E+00	1.08E-04	3.26E-03	0.00E+00	-3.26E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.62E-04

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Total use of renewable PER	MJ	1.61E+01	1.36E-04	1.90E-02	1.61E+01	1.12E-03	-3.26E-03	0.00E+00	1.04E-03	7.53E-03	7.24E-05	-1.47E+01
Non-renewable PER used as energy	MJ	3.03E+01	8.85E-03	1.92E+00	3.22E+01	7.27E-02	0.00E+00	0.00E+00	6.74E-02	2.64E-01	7.66E-03	-2.96E+00
Non-renewable PER used as materials	MJ	8.55E-07	0.00E+00	4.07E-08	8.96E-07	0.00E+00	-8.96E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.14E-06
Total use of non-renewable PER	MJ	3.03E+01	8.85E-03	1.92E+00	3.22E+01	7.27E-02	-8.96E-07	0.00E+00	6.74E-02	2.64E-01	7.66E-03	-2.96E+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	1.02E+00
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	1.02E+00

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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	1.25E-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".

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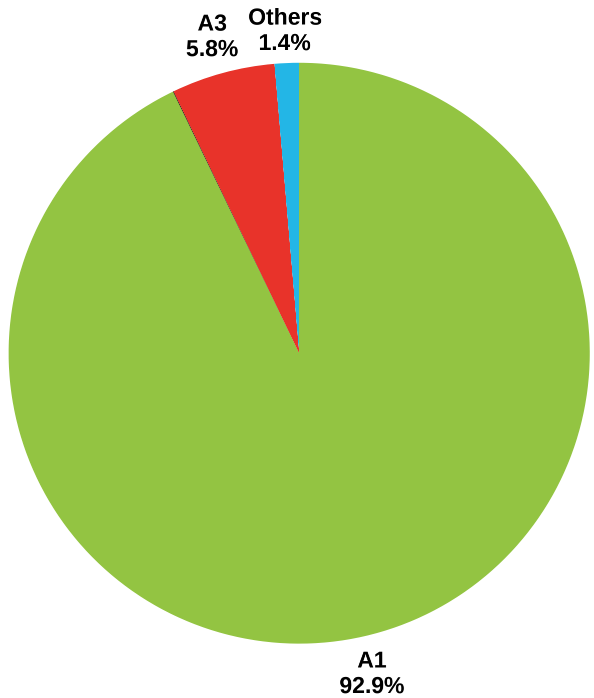
Interpretation

The results indicate that Modules A1–A3 are the primary contributors to the total GWP for JetCure R, with A1 alone accounting for 92.85% driven mainly by acrylic copolymer emulsion and water production. Manufacturing activities in A3 contribute a further 5.76%, reflecting electricity use, internal handling, and packaging into HDPE containers and palletised loads. Transport of raw materials and finished product (A2 and A4) together represent about 0.29% of total GWP, reflecting regional road distribution within the UAE. End-of-life stages (C1–C4) contribute approximately 1.10%, as the cured curing compound follows mixed mineral demolition, recycling, and inert landfill routes. Overall, the acrylic polymer fraction is the dominant hotspot, clearly highlighting opportunities for increased water-based formulation efficiency, higher recycled content in polymer feedstocks, or sourcing lower-carbon acrylic resins. These insights guide targeted improvements for future environmental performance.

Life Cycle Stage Contribution to GWP (kg CO_2e per 1 kg JetCure R)



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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-202603-122
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 – Road transport distance calculations.
- PortDistance.com – Maritime transport distance calculations.

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 & PE/PET Recycling Reports – Plastics recycling industry data for LDPE recovery rates.
- PlasticsEurope & European Commission Circular Economy Guidance – Recovery performance for rigid HDPE packaging.
- WRAP (UK) – Recycling performance for clean LDPE film streams.


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