STREETLIFE®

USA/CAN

Environmental Impact Sheet
Explanation

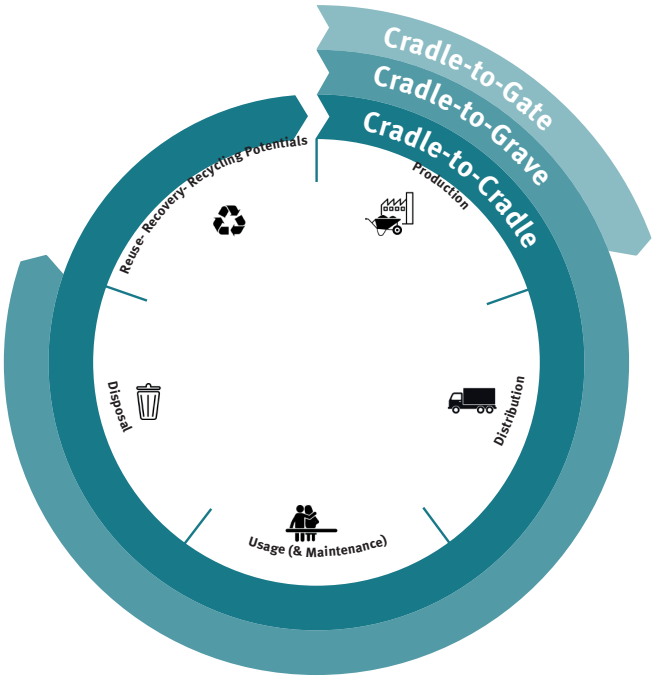
The Environmental Impact Sheets (EISs) were created to provide insight into the materials that Streetlife uses and to compare the environmental impact of these materials. Each product's impact is expressed in terms of its carbon footprint and Environmental Cost Indicator (ECI) value.

Architects and landscapers can use the EISs to choose which kind of material suits their design plan, the client's sustainability requirements and the UN Sustainable Development Goals (SDGs).

The EISs indicate the total environmental impact of a product during its life cycle, which has been set by Streetlife at 25 years. In the Explanation Sheet, we provide an in-depth overview of our choices and considerations when it comes to calculating the carbon footprint and ECI value. This document will assist in making a more conscious and sustainable choice.

Software, databases and compliance

For our environmental impact reports, we use data from life cycle assessments (LCAs), created using Mobius LCA software. This software is designed by Ecochain, which assesses our LCAs and provides important guidance. Mobius uses the ecoinvent v3.5 and v3.6 Life Cycle Inventory Databases and the Dutch National Environmental Database 3.2 and 3.3 as its benchmark to assess the environmental impact of materials, treatments, modes of transportation, etc. The EN15804+A1 standard is used to calculate the LCA.



Life cycle assessment

An LCA is a standardized method for mapping the environmental impact of a complete product or product component. In an LCA, the life cycle of the product is measured over a specific period of time. Every stage of the product's environmental impact is mapped, from sourcing the required raw materials through to production and use. Also its recycling potential to waste processing is included.

There are various ways to compile and assess the product's lifecycle. The best three known are the following:

- **Cradle-to-gate:** the environmental impact is calculated from the origin of the material, to the moment the product leaves the factory floor for shipping.
- **Cradle-to-grave:** the environmental impact is calculated from the origin of the material, to the end of the product's lifecycle.
- **Cradle-to-cradle:** the environmental impact is calculated from the origin of the material, to the end of the product's life cycle, including potential recycling processes. This includes product reusability, recycling capacity with other products or complete recyclability.

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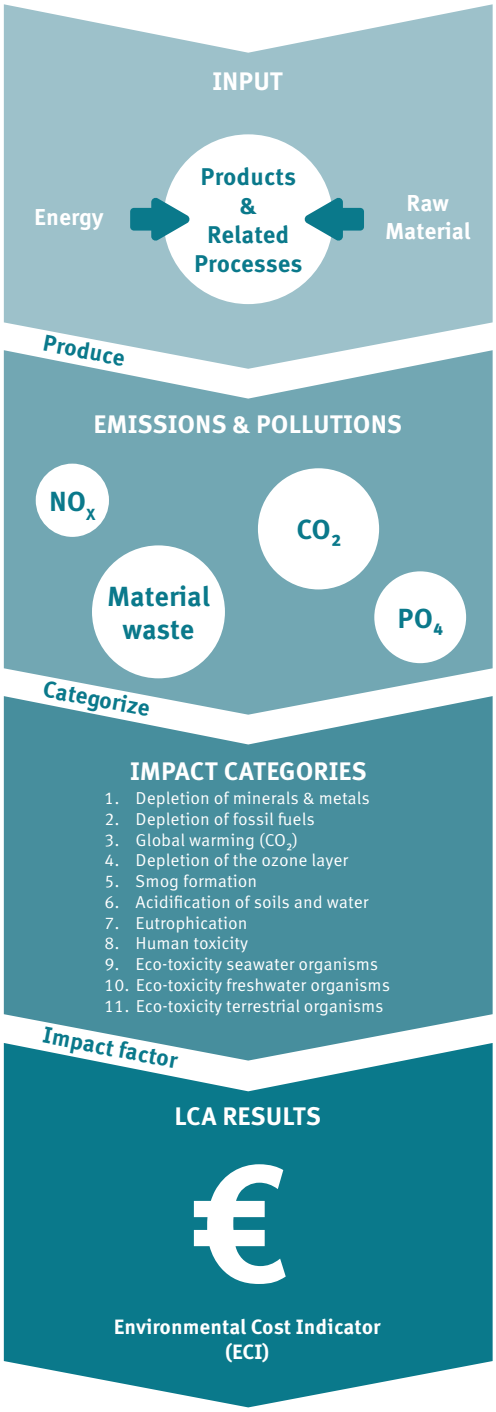
Environmental impact categories

A complete LCA requires a wide variety of data, including the precise emissions from energy production, raw material sourcing and waste processing. These different types of emissions are compiled within an LCA and sorted into a set of environmental impact categories:

1. Depletion of abiotic resources - minerals and metals
2. Depletion of abiotic resources - fossil fuels
3. Global warming potential
4. Ozone depletion
5. Photochemical ozone creation (smog formation)
6. Acidification (of soils and water)
7. Eutrophication
8. Human toxicity
9. Eco-toxicity seawater (toxicological effects on seawater organisms)
10. Eco-toxicity freshwater (toxicological effects on freshwater organisms)
11. Eco-toxicity terrestrial (toxicological effects on terrestrial organisms)



Environmental cost indicator

The ECI measures the burden a product places on the environment over its entire life cycle and was developed by the executive agency of the Dutch Ministry of Infrastructure and Water Management (Rijkswaterstaat). This a key criterion for new government contracts. In the LCA, environmental impact is measured using standardized factors. The 11 potential impacts are combined into a single score for the total environmental costs a product places on society: the ECI value (expressed in EUR). Each EIS we compile at Streetlife provides the total environmental impact per unit for a specific product component – the beam used for the bench seating or the steel for its support, for example.

Carbon footprint

The 'global warming potential' impact category represents the potential impact of greenhouse gas emissions resulting from product production, usage and waste processing on planetary temperature. This is collectively called the carbon footprint of a product. The footprint is measured in kilograms of CO_2 emitted during a predetermined life cycle. The carbon footprint is an internationally recognized term that is often applied to compare products based on their CO_2 emissions.

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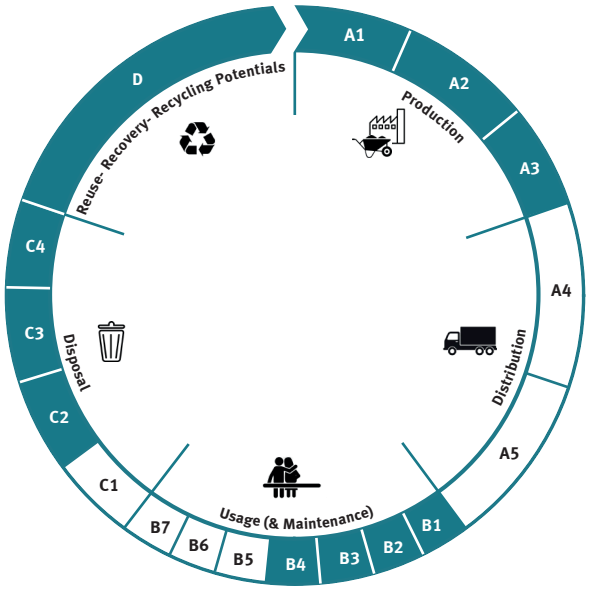
Life cycle stages

An LCA describes the life cycle of a product or component in five main stages.
A: Production
A: Distribution and installation
B: Usage and maintenance
C: Disposal
D: Reuse-recovery-recycling potentials

Distribution and installation are also categorised as A due to their part in the finishing and putting into service of a product. However, production is often considered a separate stage with its own defining factors, which is why it is mentioned as such. Main stages A to C can be divided into various substages.



A1: Raw material extraction, secondary material input
A2: Transport to the manufacturer
A3: Manufacturing
A4: Transport to the building site
A5: Installation on site
B1: Use of the installed product
B2: Maintenance
B3: Repair
B4: Replacement
B5: Refurbishment
B6: Operational energy use
B7: Operational water use
C1: De-construction, demolition
C2: Transport to waste processing
C3: Waste processing for reuse, recovery and/ or recycling
C4: Disposal
D: Reuse, recovery and/ or recycling potential, expressed as net impact and benefit

- **Production (A1-A3)**
  A1 - Every process associated with obtaining raw material and arriving at a basic shape, such as a beam or sheet.
  A2 - Transportation to the manufacturer and all intermediary transportation activities related to the production process.
  A3 - The treatment and production processes required to come to a complete, ready-to-ship product.

- **Distribution (A4-A5)**
  A4 - Transportation from the manufacturer to the building site.
  A5 - The resources and energy required to instal the product on site.

- **Usage and maintenance (B1-B7)**
  Various lifecycle stages for a product in use: usage, maintenance, repairs, replacement, renovation and comsumption of energy and water.

- **Disposal (C1-C4)**
  C1 - Dismantling the product.
  C2 - Transport to waste processing.
  C3 - Waste processing.
  C4 - Disposal of the product's base materials.

- **Reuse-recovery-recycling potentials (D)**
  The material's environmental impact and benefits. This category includes its positive impact due to reusage, recycling and recovery.

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About the environmental impact sheet

An EIS describes the environmental impact measured in ECI value and the carbon footprint for one specific product or component in a single specific material. Streetlife consciously chooses to communicate the environmental impact using these two criteria. The carbon footprint is an international standard for communicating environmental impact, while the ECI value is more comprehensive, using ten additional environmental impact measures. All of Streetlife's EISs have the same format, making them easy to compare.

The 'Material description' section provides an overview of the material or its composition of the product, whereas the 'System boundaries' section defines the applied life cycle. If during the usage and maintenance lifecycle stage, material is expected to be replaced, the material description will also show how often this will be the case during the entire span of the LCA.

The results of the LCA are displayed under 'Results and impact label' – defining the impact of one specific product or component in a single specific material within the predetermined system boundaries. The center of the impact label shows the carbon footprint and the ECI value over the entire life cycle. The outer ring displays the carbon footprint per lifecycle stage.

The 'Impact comparison' section compares the total impact of different material options for the same product. Each material is categorized by weight, carbon footprint and ECI value. This is also to confirm that the material is recovered by Streetlife and reintroduced into the production chain.

Material description

This section describes the material or its composition for a product or component. It also specifies whether renewable energy was used during the treatment processes and potential recycling percentage.

System boundaries

The system boundaries describe which product stages have been included in Streetlife's LCA calculation. Depending on the material, we will either use a cradle-to-grave or cradle-to-cradle life cycle. The life cycle stage and substages included in the LCA are marked in blue. The distribution stage (A4-A5) varies per client and is therefore not taken into consideration. For the same reason, dismantling (C1) has also been left out of our LCA calculations.

The impact of the usage and maintenance stage (B1-B4) has been included in the LCA to provide a complete and realistic overview of our product's total lifecycle. In calculating these impacts, we estimate the material's replacement percentage during a period of 25 years – this estimation is based on our own experience.

In many instances, Streetlife's products and materials have a much longer technical life, lasting well beyond 25 years. Street furniture is often replaced for different reasons, such as a new development or the redesign of public space. That is why we have determined 25 years to be the average lifecycle for our products.

Some of the seating materials (All Black, Cloudy Grey and Lava Grey) can be returned to Streetlife at the end of their lifecycles. The returned materials will be reintroduced into the production process to make new Streetlife beams – cradle-to-cradle.

Results and impact label

An impact label displays the results of the LCA. The center shows the ECI value expressed in EUR and the total carbon footprint in kilograms during its entire life cycle. Every life cycle stage that is included has its own carbon footprint displayed on the outer ring of the label, sorted by main stage: production, usage and maintenance and reuse-recovery-recycling potentials.
Above the total values, the unit is indicated to which the entire LCA calculation refers – describing the component it concerns, the material and its dimensions.

We have chosen to compare the seating materials using an equal diameter with a 100 cm beam length. Every beam has its own unique diameter and weight, depending on the product family in the Streetlife collection.

For the various metal options, we have selected a popular standard component, the Rough&Ready Support, for comparison by material defined by mass in kilograms divided by its volume in cubic meters. The calculation takes the production processes into account so that a fair comparison can be made.

The starting value of the ECI is in euros. To be more apparent to the North American market, Streetlife converted this with the following EU/USD exchange rate: € 1.00 : $ 1.08235, 03-28-2024, OANDA.

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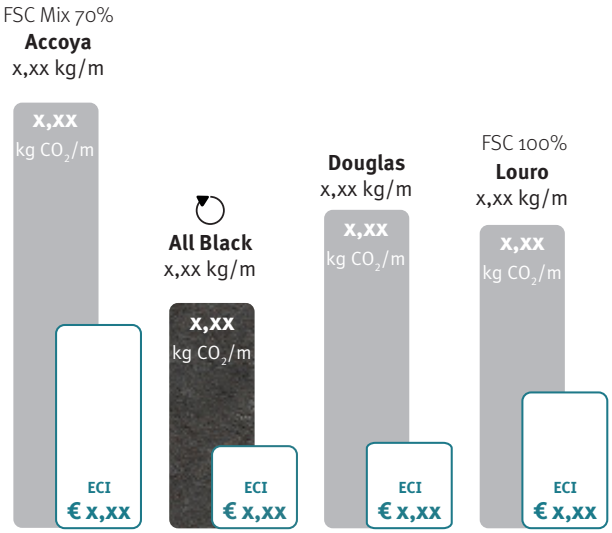


Example impact comparison of carbon footprint vs Environmental Cost Indicator (ECI)

Impact comparison

This section outlines the total impact for all material options of a specific product during its entire lifecycle, such as beams with the same dimensions or a certain support. For each material, the total weight in kilograms or kilograms per meter is indicated. The coloured bars in the impact comparison show the carbon footprint per kilogram of CO_2 per meter. The textured bar represents the carbon footprint of the product covered in the EIS. The outlines of the bars show the ECI value.

Version number and expiry dates

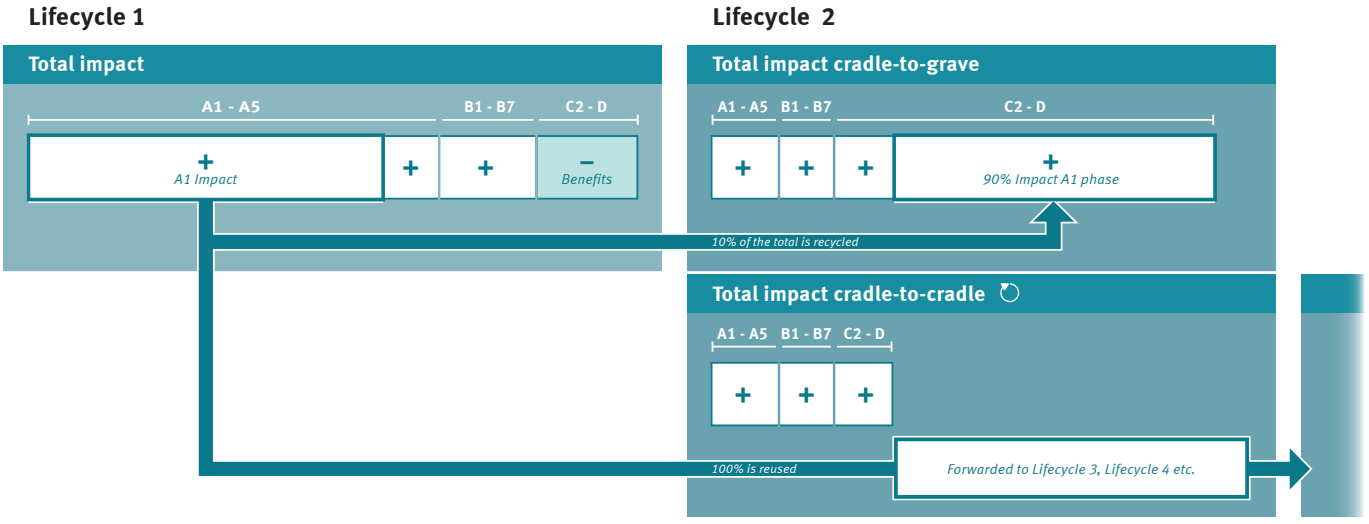
Both the EISs and the Explanation sheets have a version number printed on the right side of the document. Make sure you have the most recent version. Significant alterations in a product's design, adjustments in the production process and changes in the logistics chain or material composition will require Streetlife to recalculate the data and create an updated EIS with a new version number.

The EISs and the Explanation sheets also have an expiry date visible on the final page of the relevant document.

Reused wood: primary and secondary wood as a raw material

The Upcycled Hardwood and Upcycled Douglas Streetlife materials are reused wood sources that grant secondary wood a second life cycle. For primary and secondary wood, Streetlife maintains a cradle-to-grave scenario. As a result, the waste processing and recycling stages (C2-D) of Upcycled Hardwood make a relatively high contribution to the total environmental impact during its second lifecycle.

Conversely, the production (A1-A3) and usage and maintenance stages (B1-B4) have a very low impact. This is because the reused materials are mostly lost during the recycling and disposal processes. This loss is calculated as a burden in the waste processing and recycling stages (C2-D) of the second life cycle. Based on the division of the end-of-life processing scenarios of the National Environmental Database (May 2022),



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the size of this loss due to combustion makes up 90% of the impact of the A1 stage (sourcing the primary wood) during the first life cycle. The remaining 10% is redistributed into recycling processes.

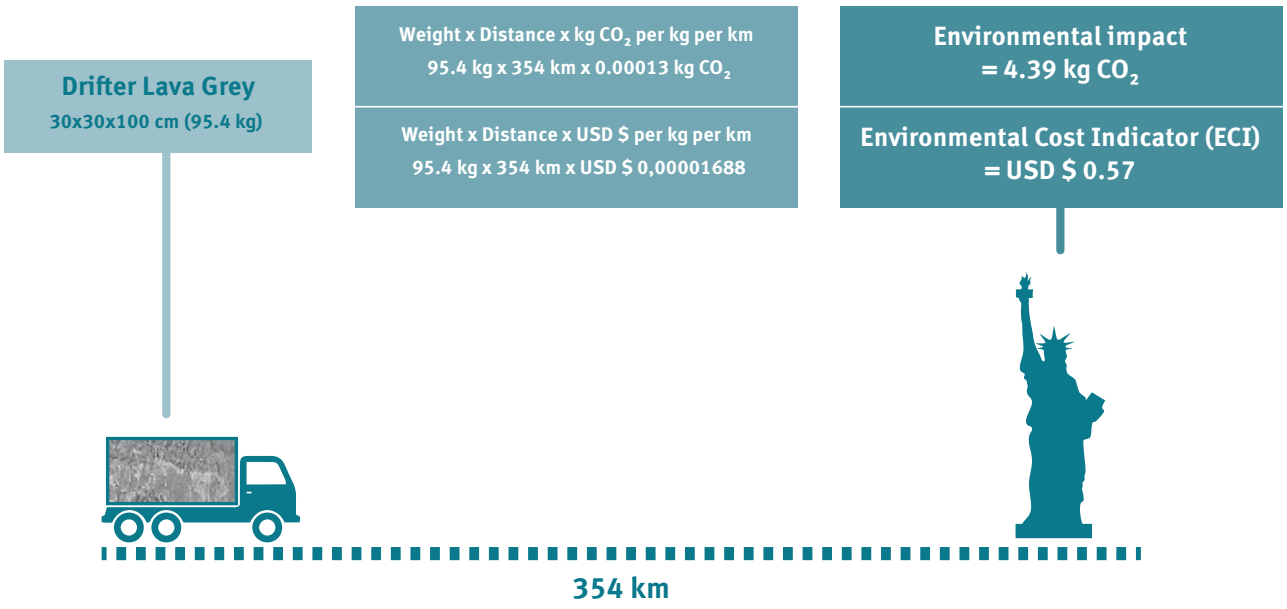
Unlike with reused wood, the sourcing of primary wood allows for a calculation of environmental benefits – it is assumed that these benefits have already been included in the first life cycle of the LCA when it concerned primary wood. Such benefits can only be calculated once during the entire lifespan (several life cycles) of wood.

When the wood's lifespan is extended (cradle-to-cradle), the impact of the A1 stage of the first life cycle moves up to the next life cycle as a loss and so on – it will only be calculated during the final life cycle, the cradle-to-grave, as seen on previous page image at bottom.

Transportation

Streetlife's LCAs only account for internal logistic movements. All external transport or transportations that can vary per delivery are not taken into consideration. To provide a sense of the environmental impact of the external transport to the client, the calculation is: 0.13 kg of CO_2 or EUR 0.0156 (ECI) per 1000 kg of material mass per kilometer (ecoinvent v3.5) for North America. That adds up to 0.00013 kg of CO_2 per kilogram of product weight per kilometer or EUR 0.0000156 per kilogram per kilometer. This euro amount converted with the EU/USD exchange rate: € 1.00 : $ 1.08235, (03-28-2024, OANDA) give USD $ 0.00001688 per kilogram per kilometer.

Example: a Lava Grey Drifter Beam (dimension 30x30 cm) of 100 cm, weighing 95.4 kg, is transported to New York – 354 km away. The environmental impact will be 95.4 kg x 354 km x 0.00013 kg of CO_2, equalling 4.39 kg CO_2. The ECI would be 95.4 kg x 354 km x USD $0.00001688, equalling USD $ 0.57 (EUR € 0.53).



Data disclaimer

Streetlife aims to provide accurate, clear and current information and has compiled its EISs and Explanation Sheets with the utmost care. However, we rely on third-party data and are aware that information and calculation methods are occasionally updated. When this occurs, we will update our documentation accordingly. The latest versions of the EISs and the Explanation Sheets can always be requested from Streetlife. We are more than happy to offer advice should you want to use our data in your own reports.