

WHITE PAPER FROM BUILDING TO PRODUCT CERTIFICATION

What is Cradle to Cradle® and which criteria does our Sarnafil® AT Silver-certified roofing membrane meet?



Sarnafil® AT

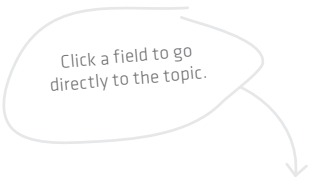
BUILDING TRUST



INTRO

Sarnafil® AT, our newest polymeric single ply roofing membrane, was the first in the World to be Cradle to Cradle® certified. We have taken this as an opportunity to highlight all the sustainability aspects, such as building certification, product certification and sustainability strategies. Above all, we clarify the question of what is behind Cradle to Cradle® and which criteria must be met, to achieve the level required to obtain accreditation.

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MORE VALUE – LESS IMPACT

SIKA, SARNAFIL AND SUSTAINABILITY

Sika is a speciality chemicals company, a leader in the development and manufacture of systems and products for bonding, sealing, damping, reinforcing and protecting for the construction and manufacturing industries. We are represented in 103 countries with more than 33,000 employees and we produce in over 400 factories. Sustainability has been one of the Group's most important strategic pillars for many years.

Our sustainability strategy is based on the motto “**More Value – Less Impact**”, meaning increased benefits and minimised impact. The aim is to maximise the benefits of our solutions and sustainable contributions for all stakeholders while reducing risks to people and the environment and reducing resource consumption.

An important part of our strategy is to

INTENSIVELY SUPPORT

**BUILDERS, ARCHITECTS,
PLANNERS AND CONTRACTORS**

in making the right choice of products.

In the following publication, we discuss building certification systems, the sustainability documentation for Sika products and in particular Cradle to Cradle Certified®¹ Product Certification.

In conclusion, we present Sarnafil and specifically our Sarnafil® AT roofing membrane made of flexible polyolefins – the first Single Ply roofing membrane to successfully achieve the rigorous Cradle to Cradle Certified® Product Certification.

¹ Cradle to Cradle Certified® is a registered trademark of the Cradle to Cradle Products Innovation Institute.

BREEAM AND LEED



BREEAM & LEED BUILDING CERTIFICATION SYSTEMS

Sustainability qualification in the construction industry fundamentally distinguishes between the certification of buildings and of products. In the following chapters, we discuss both forms of certification in detail.

Sustainable construction is increasingly becoming the standard, especially for new buildings. Almost every country has its own building certification system. All systems pursue the common goal of creating more sustainability in the building sector. However, they differ enormously in structure and content in some cases. In the UK, BREEAM and LEED, are commonly used standards.

BREEAM

BREEAM, the Building Research Establishment Environmental Assessment Method for buildings and large-scale developments, is the most widely used Green Building Program in the UK. It is used to declare environmental performance of buildings and communities and can be used for both new build and refurbishment projects.

For each project the assigned independent licensed assessor evaluates the procurement, design, construction, and operation of a development against a range of targets (energy and water use, the internal environment (health and well-being), pollution, transport, materials) based on various benchmarks, awarding credits in each area according to performance.

Two assessment/certification stages are carried out (a design stage assessment which results in an interim certificate, and a post-construction assessment resulting in a final certificate being issued and a rating awarded).

Depending on the degree of fulfillment of the requirements, developments are rated and certified as Unclassified, Pass, Good, Very Good, Excellent, and Outstanding.

To assist with all questions regarding BREEAM certification, Sika has employed a trained (but not licensed) assessor who will be glad to help you with questions concerning your specific project.

All Sarnafil roofing membranes contribute towards the following BREEAM UK New Construction 2018 and V6 Assessment Issues.



Mat 01 Environmental impacts from construction products - Building life cycle assessment (LCA)



Mat 02 Environmental impacts from construction products – Environmental Product Declarations (EPD)



Mat 03 Responsible sourcing of construction products

The product guarantees, maintenance guide, BIM objects and BBA certificates for the Sarnafil AT membrane can also be considered in relation to numerous sections such as MAN 04 (Commissioning and handover), MAT 05 (Designing for Durability & Resilience), WST 01 (Construction Waste Management) and WST 06 (Design for Disassembly & Adaptation).

Sika's rooflights can be considered in relation to HEA 01 (Visual Comfort) and HEA 02 (Indoor Air Quality).

Accredited Details which can be used with SBEM in **ENE 01** (Reduction of Energy Use and Carbon Emissions) in that the calculated heat loss (Psi value) figures for the accredited details can be entered into SBEM, when calculating the buildings performance, without incurring the penalties outlined in Part L for non-calculated designs.

Moreover, our Sika® SolarMount PV System can be considered in **ENE 04** (Low Carbon Design) and our Green Roof Systems can be considered for both **POL 03** (Flood & Surface Water Management) and the majority of the Land Use and Ecology issues (**LE**).

🌐 <https://bregroup.com/products/breeam/>

LEED SYSTEM

In contrast to BREEAM which originated in the UK, the LEED system was developed in the USA. Today it is used worldwide, and increasingly also in the UK market. "Leadership in **E**nergy and **E**nvironmental **D**esign" already indicates that the focus here is on the environmental aspects of a building. Depending on the degree of fulfilment of the requirements, certification in the LEED system is also awarded in several levels: Certified, Silver, Gold and Platinum.

Sika manufactures Sarnafil roofing membranes that meet the current LEED system:



Pre-consumer recycling share of 10 % on average



High reflectance of white membranes → requirements for SRI value (solar reflectance index) met



Compliant with requirements for constituents according to REACH

Life cycle assessment data for Sarnafil synthetic roofing membranes are available as a product-specific Environmental Product Declaration (EPD).

🌐 www.usgbc.org/leed

SIKA AT WORK



BREEAM CERTIFIED BUILDING SIKA SARNAFIL SPECIFICATION V&A MUSEUM, SCOTLAND



PROJECT REQUIREMENT

As part of Dundee's £1 billion waterfront regeneration scheme to reinvigorate the city, the first V&A Museum in Scotland was completed in 2017.

Spanning an impressive 8,500m² floor area, the three-storey building has curving concrete walls, reminiscent of Scottish cliff faces, making a striking centrepiece on the water's edge.

With its BREEAM requirements, waterfront position, and proximity to the coast, it was essential that the building's roof be designed and installed to meet sustainability criteria, whilst being absolutely watertight and robust enough to withstand the elements – both during and on completion of construction.

Also necessary was that the chosen roofing system could be installed in keeping with the building's complex design.

PROJECT PARTICIPANTS

Roofing contractor: Q9 Cladding Solutions

Location: Dundee, Scotland

Size: 5,500m²



LIFE CYCLE ASSESSMENT DATA

SUSTAINABILITY DOCUMENTATION FOR PRODUCTS

Environmental Product Declarations contain a wide range of data and provide valuable information in the context of building certifications.

For many Sarnafil synthetic roofing membranes, Sika has product-specific EPDs available for download on the Sika website.

 [EPDs](#)

What is an EPD?

An Environmental Product Declaration, or EPD for short, is a third-party verified and registered document used to transparently communicate the potential environmental performance or impact of a product or material over its lifetime. Creating an EPD is a voluntary activity, and the scope of the EPD can vary depending on the amount of information a manufacturer wishes to disclose. EPDs can be narrow in scope, covering the product stage only ("Cradle to Gate"), or can include the entire product life cycle ("Cradle to Grave"), or be in between ("Cradle to Gate with options").

For construction products, the European Standard, BS EN 15804 and the International Standard ISO 21930 provide the methodology for producing an EPD. These standards are designed to facilitate the comparison of the environmental impacts of construction products at the building level.

What does an EPD Contain?

An EPD contains information about the potential environmental performance, impacts, and benefits, associated with materials and construction processes throughout the life cycle of a building or structure, via a standardised life cycle assessment methodology and reporting format. In the construction industry, EPDs are a source of embodied carbon data - reported as the impact on Global Warming Potential (GWP) - as well as a data source for other impact categories such as Photochemical Ozone Creation Potential (POCP), Eutrophication Potential (EP), and Acidification Potential (AP).

An EPD will also include a description of the LCA process, the product category rules used, the reference service life and functional unit, all of which must be considered before a comparison can be made with data from another EPD. Information about the validity - an EPD is usually valid for five years - the LCA consultant, the EPD program operator and the external 3rd party EPD verifier will also be listed.



EPD Availability and Types

Globally over 12,000 EPDs (to EN 15804) are now available, but not all EPDs are equal. Some EPDs include more assumptions than others which impacts on the accuracy of the information which should be considered when comparing data.

Product Specific EPDs

Sometimes referred to as a Standard EPD, a Product Specific EPD is developed from data specific to one product and one manufacturer and is reviewed and verified by a third-party entity. In this situation the unique EPD that is generated is the most accurate and thorough type of EPD available and can only be used by that specific manufacturer in relation to that product.

Industry Wide EPDs

Industry-wide EPDs are generic declarations that express the impacts of an average product for a particular range of products across many manufacturers. These are suitable for specific product groups covering well-defined products with similar functions. For instance, the European Waterproofing Association have developed an EPD with information on the average environmental impact of bitumen waterproofing membranes (bitumen lightweight underlays and bitumen shingles for pitched-roof coverage). Only companies that were involved in the development phase and have provided their data can use an Industry Wide EPD. As these EPDs, which are sometimes called Average EPDs, contain more assumptions than a Product Specific one they are seen as less accurate and so earn less points in Green Building Programs such as BREEAM and LEED.

Model EPDs

In some segments of the construction industry Trade Associations have developed Model EPDs which represent the worst performing product in a product group. Sometimes referred to as Worst Case EPDs, Model EPDs are commonly used for products which are themselves high impact, but contribute only very little to building impacts because they are used in very small quantities, e.g. adhesives or coatings. Model EPDs can be used by the trade association members provided the association member has proven that their product can be represented by this particular EPD. To do this an assessment of the product formulation must be completed in accordance with the approved guideline and procedure for the relevant product category. The material supplier will then provide a self-declaration that a specific model EPD applies to their given product. Again, as these types of EPDs contain more assumptions than a Product Specific EPD they are seen as less accurate and earn less points in Green Building Programs such as BREEAM and LEED.



ON THE WAY TO A CIRCULAR ECONOMY

Cradle to Cradle Certified® PRODUCT CERTIFICATION

Cradle to Cradle®² was developed by the German chemist Prof. Dr Michael Braungart and the American architect William McDonough. The two pioneers introduced a concept for the synergetic combination of design and chemistry (material properties) for the thoughtful design of modern industrial products.

With different meanings, the term was originally seen as a counter-design to “cradle to grave”. Today, Cradle to Cradle® is considered a beneficial design approach that integrates five categories:

- Environmentally harmless, healthy materials (material health)
- Reutilisation of materials, e.g. by recycling or composting
- Use of renewable energy and carbon management
- Water management and water-quality improvement
- Social responsibility strategies

Cradle to Cradle® – The basic concept

Nature does not produce waste. Everything is a nutrient for another organism or system. Materials are reused in safe cycles. There are no substances that are difficult to degrade or that accumulate in other organisms and that can lead to irreversible changes. The earth produces biota (all living organisms in the environment) that have grown from the energy of the sun.

The design of goods (products) and the provision of services can be described by three principles:

PRINCIPLE 01

“EVERYTHING IS A RESOURCE FOR SOMETHING ELSE”

Behind the Cradle to Cradle® approach is the idea that nutrients become nutrients again. All materials are considered potential nutrients in one of two cycles: the technical and the biological cycle.

Founded by the two pioneers in 1995, the McDonough Braungart Design Chemistry (MBDC) Institute promotes the design of materials and products that are effectively “nutrients” for other systems.

² Cradle to Cradle® is the registered service trademark of McDonough Braungart Design Chemistry (MBDC).

This means: Materials and products are to be designed in such a way that they can be used again and again in both systems. New materials and products are to be developed in such a way that they are safe and their nutrients leave a beneficial legacy in economic, environmental and fairness terms. Because clean water is vital for humans and all organisms, water inflows and outflows are to be managed responsibly. The local impacts of water use must also be considered in order to preserve and promote healthy watersheds and ecosystems.

Carbon dioxide (CO₂) should be sequestered in the soil. Our current practice, in which carbon dioxide ends up damaging the oceans and atmosphere, is a mismanagement of this material.

PRINCIPLE 02

“USE CLEAN AND RENEWABLE ENERGY”

The quality of the energy matters. Energy from renewable sources is of utmost importance for effective product design. Renewable energy sources such as solar, wind, hydropower, biomass (as long as it does not compete with food supply), geothermal and hydrogen fuel cells are suitable.

PRINCIPLE 03

“CELEBRATE DIVERSITY”

Social fairness should be a guiding principle for a company's business activities and relationships with its partners. Employees should participate in creative design and research projects to actively promote their company's Cradle to Cradle® approach and initiate optimisations. Because technological diversity is the key to innovation, multiple options are always to be explored in the search for creative solutions. Supporting local biodiversity ensures that local ecosystems can thrive. A positive social, cultural and environmental footprint is to be pursued.

The history

Prof. Dr Michael Braungart founded the Environmental Protection and Encouragement Agency (EPEA) Internationale Umweltforschung GmbH in 1987. Soon thereafter, he launched the Intelligent Products System (IPS), which defines all materials as nutrients. The unique characterisation states that such materials can be continuously reused in biological and technical cycles.

1987

Prof. Dr. Michael
Braungart founds the
EPEA

1991

Braungart and
McDonough exchange
ideas that later form
the basis of the
Cradle to Cradle®
design framework.

The IPS is based on the European precautionary principle and shows a new perspective: Materials are to be seen as important components of technical and biological metabolic cycles.

As an architect in New York, William McDonough is a pioneer in building design and concept development. The motto “A building like a tree, a city like a forest” became the basis of the green building movement. McDonough was a founding member of the American Institute of Architects Committee on the Environment (COTE) as well as the United States Green Building Council (USGBC).

McDonough and Braungart met in 1991 and began exchanging ideas. Together they combined the view of materials as nutrients in biological and technical cycles with the concept of purpose-driven design. This gave rise to the Cradle to Cradle® design framework as a practical approach to product design in which all materials move within biological and technical cycles.

CERTIFICATION AND ASSESSMENT

The Cradle to Cradle Products Innovation Institute (C2CPPI) develops and administers the Cradle to Cradle Certified® Products Program. The Standards Steering Committee, using the Cradle to Cradle® design concept, is responsible for reviewing and approving revisions and/or amendments to the Cradle to Cradle Certified® Product Standards.

The following reflects the essential content of the Cradle to Cradle Certified® Product Standard Version 3.1 (controlled document/effective December 10, 2014/approved by C2CPPI Certification Standards).³

In this context, continuous improvement of the products is to be ensured on the basis of five categories:

1. Material health
2. Material reutilization
3. Renewable energy and carbon management
4. Water stewardship
5. Social fairness

Products that meet the criteria of this evaluation system receive the Cradle to Cradle Certified® Certificate for one of five levels (Version 3.1), namely: Basic, Bronze, Silver, Gold and Platinum.⁴

 c2ccertified.org

³ The version discussed in this white paper is Version 3.1 – Sarnafil® AT was certified according to that version.
More on this in the comments [on page 27](#)

⁴ The Basic level is omitted in V4.0.

Accredited assessment bodies for material health in the Cradle to Cradle Certified® Products Program include:

- [MBDC, LCC \(mbdc.com\)](https://mbdc.com), USA
- [EPEA GmbH \(epea.com\)](https://epea.com), Germany/Netherlands (a Drees & Sommer company since 2019)
- [Arche \(arche-consulting.be\)](https://arche-consulting.be), Belgium
- [ToxServices \(toxservices.com\)](https://toxservices.com), USA

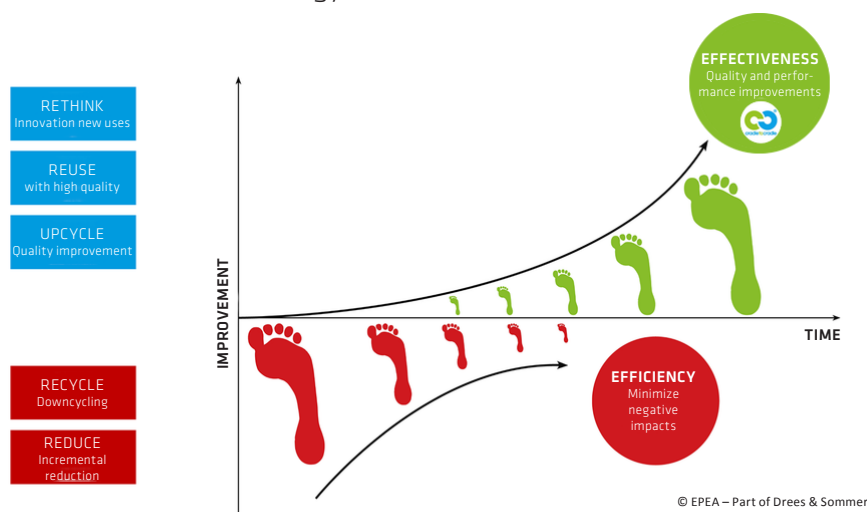
🌐 <https://c2ccertified.org/our-community/assessors>

Cradle to Cradle® in practice

The Cradle to Cradle® design principles are about continuous optimisation and innovation concerning the economic, environmental and social aspects of human design and the use of products and services. The product certification programme is intended to improve the way we make, use and reuse things. The aim of all the measures is to leave a good footprint for human society and the environment.

Cradle to Cradle® design reflects the healthy, regenerative productivity of nature and views materials as active rather than passive components. According to management theorist Peter Drucker, companies have mostly focused on becoming more efficient by reducing their inadequate ecological footprint by optimising existing, but potentially incorrectly designed, systems. The Cradle to Cradle® principle is about first doing the right thing and in the next step doing it the right way to achieve genuinely good results. In other words, becoming “better” instead of just “less bad”.

Cradle to Cradle® is a tool for designing a continuous improvement process that starts with the beneficial outcome as the target and works efficiently towards achieving it. An example: It is useful (but not sufficient as an end goal) to slow down the use of fossil fuels. The Cradle to Cradle® goal is to switch to renewable energy sources.





BUILDING MATERIALS AND RAW MATERIALS

WHAT DOES Cradle to Cradle® MEAN FOR THE CONSTRUCTION INDUSTRY?



In Europe, the
construction industry
accounts for nearly

50 %

of raw material
consumption.

In a recent study, it was found that the UK creates 202.8 million tonnes of waste annually. Of that figure, the UK construction industry is responsible for 59% of this waste.⁵ Historically, many of the products used in buildings contained hazardous components, which makes them difficult to recycle or repurpose.

The Construction Industry more than ever is looking towards materials and components that either have been recycled or repurposed and also have the potential to be reused at the end of their intended life. To achieve this, a circular economy model needs to be adopted for construction products. However, to consider true sustainability it is necessary to look beyond how recyclable a product is and also consider the components and water used in its creation, renewable energy, and social fairness.

The drive for sustainability in construction has created a situation where manufacturers are increasingly minded to innovate and improve their products to ensure their materials fit into this model to ensure they remain competitive in the marketplace. This has not been without its challenges. Recently, manufacturers have been subject to criticism for 'greenwashing' products, by presenting them as more environmentally friendly than they perhaps are by using simple tactics such as green coloured packaging or use of phrases or slogans such as 'Eco' or 'CO₂ Neutralising' with very little data to support such claims.⁶

At Sika, we call for an end to greenwashing practices and encourage that all claims of performance (be that life expectancy, recyclability etc.) are able to be demonstrated independently of the manufacturing or sales organisation to ensure that end users have confidence in the stated performance of the products or services they have procured and are in absolutely no way misled.

Code for Construction Products Information (CCPI)

In the UK, the Construction Product Association (CPA) has created the Code for Construction Product Information (CCPI)⁷ which was borne out of a need to improve the way that manufacturers manage and provide information on their products. The CCPI was initiated as a direct response to Dame Judith Hackitt's review of Building Regulations and Fire Safety set up in the wake of the Grenfell Tower tragedy.

Single-ply roof systems by Sika has become one of the first products on the UK market to carry the CCPI mark, helping to provide assurance to product users that the product information for these products is clear, accurate, accessible, up-to-date and unambiguous.



After signing up to the code, manufacturers are audited to ensure compliance – but moreover are expected to be able to be bound by the clauses of the code – which include requirements to not exaggerate or misrepresent the performance of construction products. The CCPI is built around the following five ‘acid tests’ – product information must be Clear, Accurate, Up-to-date, Accessible and Unambiguous.

This leaves manufacturers in the position where they either make no claims as to the sustainability performance of their products, which would likely put them at a commercial disadvantage or by ensuring that any claims that they do make are independently verified with appropriate evidence.

⁵ <https://www.thenbs.com/knowledge/construction-waste-and-materials-efficiency>

⁶ <https://www.ukconstructionmedia.co.uk/news/cutting-through-the-greenwashing-in-construction/>

⁷ <https://www.cpicode.org.uk/wp-content/uploads/2023/03/Code-for-Construction-Product-Information-v1-0.pdf>

Green Claims Code (GCC)

Many businesses use sustainability claims, in the form of statements, symbols, emblems, logos, graphics, colours and product brand names, to help market their products or services.

Developed by the Competition and Markets Authority (CMA) the Green Claims Code sets out 6 key points to check environmental claims are genuine.

For Sika, in terms of sustainability credentials, we feel the Cradle to Cradle® verification and certification scheme represents a real step forward in assuring our customers that our products do exactly what we say they will.

Green claims MUST:

1. Be truthful and accurate: Businesses must live up to the claims they make about their products, services, brands, and activities.
2. Be clear and unambiguous: The meaning that a consumer is likely to take from a product’s messaging and the credentials of that product should match.
3. Not omit or hide important information: Claims must not prevent someone from making an informed choice because of the information they leave out.
4. Only make fair and meaningful comparisons: Any products compared should meet the same needs or be intended for the same purpose.
5. Consider the full life cycle of the product: When making claims, businesses must consider the total impact of a product or service. Claims can be misleading where they don’t reflect the overall impact or where they focus on one aspect of it but not another.
6. Be substantiated: Businesses should be able to back up their claims with robust, credible, and up to date evidence.

WHAT DOES CRADLE TO CRADLE® MEAN FOR THE CONSTRUCTION INDUSTRY?

Added values of Cradle to Cradle®-inspired building products

The optimised products not only improve the indoor climate, but they are also produced in the best possible way with renewable energies and under fair social conditions. This protects the climate and the environment, creates added social value and makes each of us part of the solution when we buy these products.

TOGETHER WE ASPIRE TO ACHIEVE ...

HIGHEST ENVIRONMENTAL **QUALITY**

THE USE OF C2C AS AN
INNOVATION DRIVER

KNOWLEDGE ABOUT THE
CONSTITUENTS OF A PRODUCT

GAINING **NEW MARKET SEGMENTS**
AND BUSINESS MODELS

TRANSPARENT AND **FAIR**
SUPPLY CHAINS

THE MOST **POSITIVE** CO₂ FOOTPRINT
POSSIBLE

RECYCLABLE AND **SUSTAINABLE**
PRODUCTS

SECURING HIGH-QUALITY RAW
MATERIALS AT **PREDICTABLE PRICES**



OVERVIEW

CRITERIA FOR Cradle to Cradle Certified® PRODUCT CERTIFICATION

Sika is the first manufacturer in the world to receive a Cradle to Cradle Certified® certificate for its synthetic waterproofing membrane. Sarnafil® AT is a new, revolutionary technology for single ply roofing membranes and the first synthetic roofing membrane to successfully pass the rigorous certification. The project leading to Cradle to Cradle Certification of Sarnafil® AT started in Autumn 2019.

In this process, the entire use cycle of the product is considered and assessed in the five categories mentioned. Sika achieved an overall Silver certification with its first attempt. The certification must be reviewed and renewed every two years as part of a recertification process. As such the Sarnafil AT Cradle to Cradle certification has been reviewed and renewed in 2023 with Sika once again achieving Silver certification.

With this certification, we meet a globally recognised benchmark for safer, more sustainable products manufactured for the circular economy. In the following, we explain in detail the individual assessment criteria and the requirements that Sarnafil® AT has met.

As mentioned on [page 9](#), the Cradle to Cradle Certified® Product Program distinguishes five evaluation criteria. The following explanations follow the Cradle to Cradle Certified® Product Standard Version 3.1.⁸



The certification
must be reviewed and
renewed every

2 years.



⁸ Originally Sarnafil AT was certified according to Version 3.1. The most recent certification was to Version 3.1 with "Product Circularity" and "Renewable Energy and Carbon Management" assessed to Version 4. More on this in the comments [on page 27](#)

MATERIAL HEALTH

In this category, it is assessed whether and how products are manufactured using chemicals that are as safe as possible for people and the environment. This is tracked through a self-contained process of inventorying, evaluating and optimising the material chemistry. The ultimate goal is for all products to be made only from materials that have been optimised, with no poorly rated materials. Such products can achieve higher and higher levels of certification as the proportion of optimised materials in the finished product increases.

Sika meets the following criteria with Sarnafil® AT and thus achieved Silver:

MATERIAL HEALTH	BASIC	BRONZE	SILVER	GOLD	PLATINUM
Does not contain substances on the "Banned List" – List of prohibited chemicals	✓	✓	✓	✗	✗
Materials defined as biological or technical nutrients	✓	✓	✓	✗	✗
100 % of the generic materials are characterised	✓	✓	✓	✗	✗
More than 75 % of the product's constituents are accepted based on the C2C chemical assessment		✓	✓	✗	✗
Optimisation strategy for material health developed		✓	✓	✗	✗
More than 95 % of the product's constituents are accepted based on the C2C chemical assessment			✓	✗	✗
The product does not contain any substances known or suspected to be carcinogenic, mutagenic, toxic to fertility according to the C2C chemical assessment			✓	✗	✗
100 % of the product's constituents are accepted based on the C2C chemical assessment				✗	✗
Meets Cradle to Cradle VOC emission standards				✗	✗
The product does not contain any substances rated "X" according to the ABC-X assessment methodology					✗

 [More information](#)

MATERIAL REUTILIZATION

The Material Reutilization category targets product cycles from production to use to reuse that do not generate waste. This category provides a quantitative measure of a product's recyclability and/or compostability. The greater the percentage of a product and/or its components that remain in a technical and/or biological metabolism, the better the rating in this category. In addition, the origin (fossil or bio-based) of the materials used is also taken into account when calculating the circularity index.

Sika meets the following criteria with Sarnafil® AT and thus achieved Gold:

MATERIAL REUTILIZATION	BASIC	BRONZE	SILVER	GOLD	PLATINUM
Materials have been defined for biological or technical circulation	✓	✓	✓	✓	✗
Circularity index ≥ 35		✓	✓	✓	✗
Circularity index ≥ 50			✓	✓	✗
Circularity index ≥ 65				✓	✗
Nutrient management strategy completed				✓	✗
Circularity index 100					✗
The product is actively recovered and introduced into the cycle					✗

RENEWABLE ENERGY AND CARBON MANAGEMENT

Cradle to Cradle Certified® products are manufactured in such a way that they have a positive impact on our energy supply, ecosystem balance and community. Ultimately, it is about keeping carbon in the soil and earth's vegetation, where it belongs. The intention behind this category is to increase the percentage of renewable energy used in product manufacturing. Depending on the certification level, this takes into account purchased electricity and direct on-site emissions that occur in the final manufacturing phase of the product as well as the real energy associated with the product from raw material extraction to manufacturing.

Sika meets the following criteria with Sarnafil® AT and achieved Silver:

RENEWABLE ENERGIES AND CARBON MANAGEMENT	BASIC	BRONZE	SILVER	GOLD	PLATINUM
Quantification of purchased electricity and on-site emissions	✓	✓	✓	✗	✗
Strategy for renewable energies and carbon management		✓	✓	✗	✗
5 % of purchased electricity is renewable or offset			✓	✗	✗
5 % of direct on-site emissions are offset			✓	✗	✗
50 % of purchased electricity is renewable or offset				✗	✗
50 % of direct on-site emissions are offset				✗	✗
100 % of purchased electricity is renewable or offset					✗
100 % of direct on-site emissions are offset					✗
5 % of the grey energy from "cradle to gate" is covered by offsets or a targeted optimisation strategy					✗

WATER STEWARDSHIP

The “Water Stewardship” category helps to ensure that water is recognised as a valuable resource, watersheds are protected and clean water is available for people as well as all other life forms. Every product manufacturer is responsible for this and should effectively manage vital water resources.

The programme raises awareness and responsibility for water extraction, consumption and discharge within local ecosystems and evaluates innovations in conservation, quality and social fairness.

Sika meets the following criteria with Sarnafil® AT and achieved Silver:

WATER STEWARDSHIP	BASIC	BRONZE	SILVER	GOLD	PLATINUM
No violation of a wastewater discharge permit in the past two years	✓	✓	✓	✗	✗
Local and business-specific water problems are defined	✓	✓	✓	✗	✗
Declared intention to mitigate identified problems	✓	✓	✓	✗	✗
A plant-wide water audit is completed		✓	✓	✗	✗
Strategy for optimising > 20 % of water issues in the supply chain			✓	✗	✗
Product-related process chemicals in wastewater are optimised				✗	✗
Water discharged from the production plant is of drinking water quality					✗

SOCIAL FAIRNESS

The Social Fairness category aims for the design of sustainable business operations, respecting and protecting all people and natural systems affected by the production of a product.

Business ethics should go beyond company boundaries and permeate the supply chain. It should oblige responsible production, fair treatment of workers and reinvestment in natural capital.

Sika meets the following criteria with Sarnafil® AT and thus achieved Gold:

SOCIAL FAIRNESS	BASIC	BRONZE	SILVER	GOLD	PLATINUM
Implementation of a streamlined self-audit	✓	✓	✓	✓	✗
Strategy to rectify identified problems	✓	✓	✓	✓	✗
Full self-audit on social responsibility and strategy improvements established		✓	✓	✓	✗
Investigation of problems in the supply chain and development of an improvement strategy			✓	✓	✗
Implementation of the innovative social project "Sika Cares"				✓	✗
The plant is audited according to an independent and recognised social standard					✗



PATENTED HYBRID HIGH-PERFORMANCE TECHNOLOGY

Sarnafil® AT – SAFE, UNIVERSAL, COMPATIBLE AND SUSTAINABLE

Sarnafil® AT is a further development of the proven Sarnafil FPO roofing membranes into an even higher-performance product generation with an enhanced service life. Designed for forward-thinking architects, discerning building owners and innovative contractors, the patented hybrid high-performance technology is relevant for anyone who sets particularly high standards for building products.

During development, the primary focus was on safety and sustainability, among other things documented by the Cradle to Cradle Certified® Product Certification described above.

First-class product properties

Due to its higher flexibility, Sarnafil® AT is easy to work with, especially in cold conditions. Compared with other technologies, Sarnafil® AT shows a significantly larger welding window, and this makes seam joining much easier for the installing contractor. Construction site-specific relevant characteristics such as resistance to hail and physical impact have also been significantly improved.

Sarnafil® AT is particularly distinguished by its long service life: According to the results of the Rieche Study, Sarnafil® TS and Sarnafil® TG roofs have a service life of over 55 years. Sarnafil® AT builds on this formulation and optimises its properties.

Compatibility with the entire range of Sarnafil accessories is guaranteed. In addition, Sarnafil® AT can be used universally – whether mechanically fastened, with ballast or beneath photovoltaic systems.

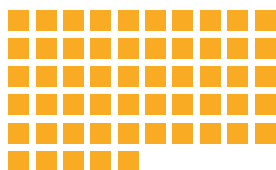
55 YEARS

SERVICE LIFE

for Sarnafil® TS/TG

type roof

 [Rieche Study](#)





MORE VALUE – LESS IMPACT

SIKA'S APPROACH TO SUSTAINABILITY

For Sika, a company with social responsibility, environmental awareness and a strong practical orientation, sustainability is one of the most important strategic pillars used for the benefit of all stakeholders.

We have placed our sustainability strategy under the motto **More Value – Less Impact**, meaning increased benefits and minimised drawbacks. The aim is to maximise the benefits of our solutions and sustainable contributions for all stakeholders while reducing risks to people and the environment and reducing resource consumption.

With economy, ecology and social issues, we keep all three pillars of sustainability in mind and focus on six strategic goals:

1. SUSTAINABLE SOLUTIONS**4. ENERGY****2. CLIMATE PERFORMANCE****5. WASTE/WATER****3. COMMUNITY ENGAGEMENT****6. OCCUPATIONAL SAFETY**

We have set concrete targets for each of these target areas, which we intend to achieve by 2023.

SUSTAINABLE SOLUTIONS

We are pioneering a comprehensive portfolio of customer-focused solutions, combining both higher performance and improved sustainability.

TARGET

- All new product developments with "Sustainable Solutions"

CLIMATE PERFORMANCE*

We run our business in a responsible way and mitigate climate change and its impacts.

TARGET

- 12 % reduction of CO₂ emissions per ton sold

COMMUNITY ENGAGEMENT

We build trust and create value – with customers, communities, and with society.

TARGETS

- 10,000 working days of volunteering work p.a.
- 50 % more projects
- 50 % more direct beneficiaries

MORE VALUE**LESS IMPACT****ENERGY**

We manage resources and costs carefully.

TARGETS

- 15 % less energy consumption per ton sold
- 50 % renewable electricity rate

WASTE/WATER

We increase material and water efficiency.

TARGETS

- 15 % less waste generation per ton sold
- 25 % higher recycling rate of total waste
- 15 % less water consumption per ton sold

OCCUPATIONAL SAFETY

Sika employees leave the workplace healthy.

TARGETS

- 50 % less accidents
- 0 fatalities

All targets are by end 2023

Baseline is 2019

*12% Target refers to Scope 1 and 2 only. For information on Sika's Net Zero targets

<https://www.sika.com/en/about-us/sustainability/sika-sustainability-strategy/way-to-net-zero.html>

Detailed explanations of the individual target fields are available here:

 [Sustainability Strategy](#)

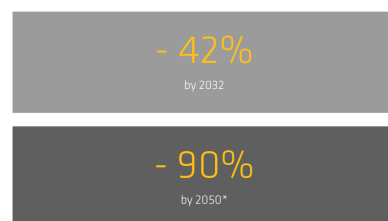
Sika's Way to Net Zero.

What is net zero & why is it important?

Net zero refers to the balance between the amount of greenhouse gas (GHG) emissions produced and the amount that's removed from the atmosphere. The aim is to reduce the GHG emissions that cause global warming to zero or as close to zero as possible, with any remaining emissions re-absorbed from the atmosphere, by oceans and forests etc. The UK Government, in line with the Paris Agreement, have committed to ensure the UK reduces its greenhouse gas emissions by 100% from 1990 levels by 2050. If met, this would mean the amount of GHG emissions produced by the UK would be equal to or less than the emissions removed by the UK from the environment – Net Zero.

Scope 1 and 2 Goals

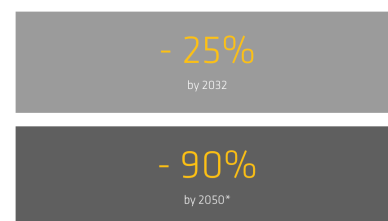
Commitment to Net Zero by 2050 Scope 1 & 2
1.5° aligned



Sika monitors its greenhouse gas (GHG) emissions  as part of the environmental responsibility the company has for climate. Since 2019, Sika has defined a strategic target for reducing scope 1 & 2 CO₂eq emissions per ton sold by 12% until 2023.

Scope 3 Goals

Scope 3 well below 2° aligned by 2032 and 1.5° aligned
by 2050



The Sika scope 3 emissions assessment project took place between January 2021 and September 2022.

A carbon emissions target is defined as science-based if it is in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement – limiting global warming to well-below 2°C above pre-industrial levels and pursuing efforts to limit warming to 1.5°C. Science-based targets provide a clearly defined pathway for GHG emissions reduction, helping prevent the worst impacts of climate change and future-proof business growth.

Sika's Net Zero Commitment

Sika is addressing climate change comprehensively and is working hard to become a net zero company. In October 2022 Sika pledged to be Net Zero by 2050 at the latest and confirmed our commitment to Science Based Targets (SBTi). Sika aims to be a driver of the transformation of the Construction and Manufacturing industry towards Net Zero. That's why the company supports the SBTi and has joined the growing group of leading corporations that are setting emissions reduction targets in line with what climate science says is necessary. By doing so, Sika recognizes the crucial role companies can play in minimizing the risk climate change poses to the future of our planet.

As a signatory of the UN Global Compact, Sika commits itself to genuinely added sustainable value along the entire value chain. We report our impacts on an annual basis, according to the Global Reporting Initiative, (GRI) and have aligned to the United Nations Sustainable Development Goals (UN SDGs). We are now working to fully integrate these 17 goals, by using them to help define our strategy, and incorporating them into our product creation process. Furthermore, Sika is a member of the World Business Council of Sustainable Development (WBCSD), the UK Green Building Council (UKGBC), Together for Sustainability (TfS) and the Construction Products Association (CPA), with regular attendance of the CPA Sustainability Policy Group.

As a member of the TfS initiative, which aims to improve sustainability practice within the supply chain of the chemicals industry, Sika sets clear targets for compliance with sustainability and quality standards in procurement and within the supply chain. The TfS program is based on the UN Global Compact and Responsible Care® principles, and allows Sika to assess and evaluate the performance of its suppliers in various aspects. In addition to this Sika has been awarded a Silver medal as a recognition of their EcoVadis CSR (Corporate Social Responsibility) Rating, is a Silver Member of the Supply Chain Sustainability School, and is working with several trade associations to develop sustainable working groups in various areas of the construction industry.

Sika is committed to building trust, and creating value with its suppliers, customers, communities, and society as a whole. We see value in education, which is a primary focus of our social involvement, through sponsorship of, or participation in, various initiatives across the UK. Recent examples include, sponsorship of RIBA Roadshows, which provide free CPD for architects and other construction industry professionals; the Lancashire Science Festival, which aims to showcase the wonders of science, technology, engineering, and mathematics to its 12,000 visitors (mainly Key Stage 2 school children); and sponsorship of various trade association awards ceremonies, which champion best practice and training within the industry. All of these align to the National TOM's - Themes, Outcomes and Measures - framework and to UN SDG 4: Quality Education. Other areas of focus include UN SDG 6: Clean Water and Sanitation, and UN SDG 11: Sustainable Cities and Communities, through the donation of various Sika materials for local projects.

 [National TOM's](#)



From the basement to the roof, Sika provides an entire range of products for the repair, protection, construction, and sealing of the building. With over 100 years' experience in supplying products for construction and industry, we are confident that we have the perfect solution, no matter what your requirement. Sika - your local provider of global solutions for construction and industry.

GLOBAL REPORTING INITIATIVE

With a sustainability report in conformance with the requirements of the Global Reporting Initiative (GRI), we report annually on our progress towards greater sustainability. Taking into account economic, environmental and social aspects, we conduct a comprehensive review of sustainable development. But as multifaceted as Sika's commitment to more sustainability is, the focus is always on people and the environment.

 [Sustainability and GRI Reports](#)



Our planet is in crisis, with global temperatures on track to rise by between 4-6°C by 2100. The built environment has a critical role to play in addressing the climate crisis, limiting global warming to 1.5°C and enabling the UK to transition to net zero by 2050. (Source: UKGBC): <https://ukgbc.org/>

Sustainable construction is the challenge of the next decades for all of us, whether building owners, architects, planners, contractors or building-product manufacturers. Let's take this journey together.



MORE VALUE – LESS IMPACT

SOURCES AND REFERENCES

The BRE Group

<https://bregroup.com/products/breem/>

LEED Rating System

<https://www.usgbc.org/leed>

Sika Limited EPDs

<https://gbr.sika.com/en/downloads/environmental-product-declarations/epd-downloads.html>

European Waterproofing Association

<https://www.ewa-europe.com/>

Cradle2Cradle Certified®

<https://c2ccertified.org/>

Accredited assessment bodies for material health in the Cradle to Cradle Certified®**Products Program include:**

- MBDC, LCC (mbdc.com), USA
- EPEA GmbH (epea.com), Germany/Netherlands (a Drees & Sommer company since 2019)
- Arche (arche-consulting.be), Belgium
- ToxServices (toxservices.com), USA

<https://c2ccertified.org/our-community/assessors>

The National Building Specification

<https://www.thenbs.com/knowledge/construction-waste-and-materials-efficiency>

UK Construction Online

<https://www.ukconstructionmedia.co.uk/news/cutting-through-the-greenwashing-in-construction/>

Code for Construction Product Information

<https://www.cpicode.org.uk/>

<https://www.cpicode.org.uk/wp-content/uploads/2023/03/Code-for-Construction-Product-Information-v1-0.pdf>

Green Claims Code

<https://www.gov.uk/government/publications/green-claims-code-making-environmental-claims>

Sika's sustainability Strategy

<https://www.sika.com/en/about-us/sustainability/sika-sustainability-strategy.html>

National TOMs

<https://socialvalueportal.com/solutions/national-toms/>

Sika's GRI Report

<https://www.sika.com/content/dam/dms/corporate/media/glo-ar-2022-sustainability-report.pdf>

UK Green Building Council

<https://ukgbc.org/>



COMMENTS

In 2021 the C2CPII published the latest version of the Cradle to Cradle standard: V4.0. This latest iteration of the standard brought new changes to the 5 categories (some of the category names have also been changed). The transition period to the new standard is 3 years – all product certifications must be changed from V3.1 to V4.0 by July 2024. The current Sarnafil AT certificate is valid until 23rd June 2024, with three categories assessed to V3.1 and two to V4.0.

This white paper is based on the Cradle to Cradle Certified® Product Standard Version 3.1 (controlled document/effective December 10, 2014/approved by C2CPII Certification Standards).

THE Cradle to Cradle®-PRINCIPLE:

“DO THE RIGHT THING
AND IN THE NEXT
STEP DO IT IN THE
RIGHT WAY.”

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