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 roofing membrane, was the first roofing membrane 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.

CONTENTS

Click a field to go directly to the topic.

MORE PERFORMANCE – MORE SUSTAINABLE

SIKA, Sarnafil AND SUSTAINABILITY

Sika is a specialty 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 on all five continents in 103 countries with nearly 34,000 employees and we produce in over 400 plants. Sustainability has been one of the Group's most important strategic pillars since early on.

Sustainability is a cornerstone of Sika's 2028 Strategy. Our 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, we discuss building certification systems, the sustainability documentation for Sika products and especially Cradle to Cradle Certified®[1] Product Certification.

In conclusion, we present Sarnafil and specifically our Sarnafil® AT waterproofing membrane made of flexible polyolefins – the first synthetic waterproofing 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.

DGNB, BNB, 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 rental properties. Almost every country has its own building certification system. All systems pursue the common goal of creating more sustainability in the building sector. Nevertheless, they differ enormously in structure and content in some cases. In Germany, the DGNB, BNB and LEED systems are the most widespread.

DGNB SYSTEM*

The building certification system of the German Sustainable Building Council (DGNB) is the most widely used in this country. It is characterised by its comprehensive sustainable approach: Environmental, economic and social aspects are considered in the planning, construction and use of the building. Depending on the degree of fulfilment of the requirements, a newly completed building receives a DGNB certificate in Silver, Gold or Platinum. As a competent consultant for all questions regarding DGNB certification, Sika has trained ten DGNB consultants who will be glad to help you with questions concerning your specific project.

All Sarnafil roofing membranes meet the requirements of the DGNB System version 2018, as attested by the manufacturer's declaration:

- New products: Lead, tin and SVHC content < 0.1%[2] (SVHC = substances of very high concern).
- For products made from recycled plastics, proof of freedom from lead, cadmium and organotin compounds is required in the form of a manufacturer's declaration.

* Local contry specific requirments to be considered

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

www.dgnb-system.de

[2] As of the 8th edition of the DGNB System 2018, evidence regarding lead, tin and SVHC is no longer required for synthetic roofing membranes.

LEED SYSTEM

In contrast to the DGNB and BNB building certification systems, both of which originated in Germany, the LEED system was developed in the USA. Today it is used worldwide, and increasingly also in the German market. "**L**eadership 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.

All Sarnafil roofing membranes meet the requirements of the current LEED system, as attested by the manufacturer's declaration:

- ✓ Pre-consumer recycling share of 10% on average
- ✓ High reflectance of white membranes → requirements for SRI value (solar reflectance index) met due to high reflectance of white membranes
- ✓ Compliant with requirements for constituents according to REACH
- ✓ An additional exclusive LEED credit point in the category 'Material Ingredients' option 1 – can be obtained with our Sika Sarnafil® AT roofing membrane Cradle to Cradle Certified® (see page 14/24 and following).

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

www.usgbc.org/leed

References
You can experience a successful practical example of a DGNB-certified building live at the Stuttgart site: the Sika Training Center. Sika products have also contributed to DGNB and LEED certification of numerous other buildings over the years.

You can find more practical examples with building certification on our website.

Search term: **DGNB** or **LEED**

References

LIFE CYCLE ASSESSMENT DATA

SUSTAINABILITY DOCUMENTATION FOR SIKA PRODUCTS

The Sika Sustainability Data Sheets and Environmental Product Declarations contain a wide range of data and provide valuable information in the context of building certifications.

You can find the Sika Sustainability Data Sheets here:

Sustainability Data Sheets

Sustainability Data Sheets

Our product-specific Sustainability Data Sheets serve as an important source of information for sustainable construction and provide a quick overview of the relevant properties of the product under consideration. Planners, builders and auditors can find detailed information here on products that are suitable for use in the construction and refurbishment of sustainable buildings.

The Sustainability Data Sheets list, for example, which tests and approvals a product has met and what contributions it makes in building certification systems such as DGNB and LEED. All relevant product information on sustainable building is summarised on a few pages and visible at a glance.

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

EPDs

Environmental Product Declarations

Environmental **P**roduct **D**eclarations, typically abbreviated as **EPD**, are prepared by manufacturers for individual products or defined product groups according to the specifications of the EN 15804 and ISO 14025 standards. In addition to a product description and technical data, they contain extensive life-cycle assessment data on the environmental impacts throughout the entire product life cycle.

An EPD is more than a manufacturer's declaration: To ensure the quality of the declarations, independent third parties check the declaration for completeness, plausibility and consistency. After successful verification, the programme holder – in Germany the Institut Bauen und Umwelt e.V. (IBU) – publishes the Environmental Product Declaration and makes it available to all interested parties.

ON THE WAY TO A CIRCULAR ECONOMY

Cradle to Cradle Certified®
PRODUCT CERTIFICATION

Cradle to Cradle®[3] 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:

- Material Health (V4.1)
- Product Circularity (V4.1)
- Clean Air & Climate Protection (V4.0)
- Water & Soil Stewardship (V4.1)
- Social Fairness (V3.1)

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.

[3] 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 (CO_2) 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 (C2CPII) 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 4.1 (controlled document/effective May, 2024/approved by C2CPII Certification Standards).[4]

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

- Material Health
- Product Circularity
- Clean Air & Climate Protection
- Water & Soil Stewardship
- Social Fairness

Products that meet the criteria of this evaluation system receive the Cradle to Cradle Certified® Certificate for one of five levels (Version 4.1), namely: Basic, Bronze, Silver, Gold and Platinum.[5]

c2ccertified.org

[4] The previous version of the standard was Version 3.1 – Sarnafil® AT was certified according to that version. More on this in the comments on page 24

[5] The Basic level is omitted in V4.0.

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

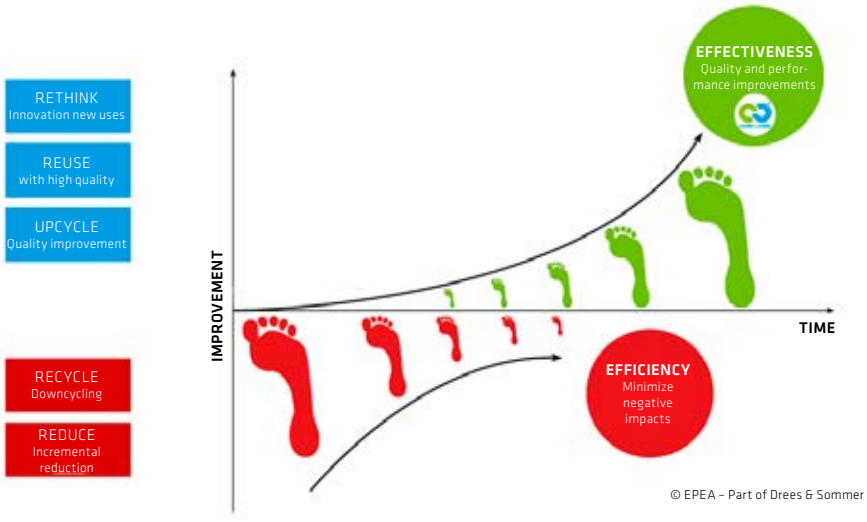
- MBDC, LCC (mbdc.com), USA
- EPEA GmbH (epea.com), Germany/Netherlands (a Drees & Sommer company since 2019)
- Arche (arche-consulting.be), Belgium
- ToxServices (toxservices.com), USA

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?

Concerning the construction industry, EPEA describes the following situation: Construction in Europe accounts for almost 50% of raw material consumption. Many of the products used in buildings today contain substances that are hazardous to health and prevent the materials from being recycled. Moreover, these substances can significantly deteriorate the air quality in buildings, where we spend almost 90% of our time.

In Europe, the construction industry accounts for nearly

50%

of raw material consumption.

The development and use of healthy and recyclable materials is therefore increasingly becoming the focus of industry and the construction sector. Interdisciplinary research teams are increasingly concerned with material cycles, and manufacturers and producers are working on the development of fully recyclable and compostable building materials. Cradle to Cradle® forms the scientific basis for the implementation of a circular economy in the construction and real estate industry.

In contrast to conventional building products, Cradle to Cradle® quality stands for the quasi-infinite circulation of healthy materials within closed cycles: Buildings and real estate can thus function as raw-material repositories. This makes it possible to decouple gross value creation from resource consumption. On this basis, a substantial improvement in climate and environmental protection can be achieved.

Cradle to Cradle Certified® building products are broken down into single-variety raw materials after use and fed into a technical cycle. The material quality is thus preserved and downcycling with loss of quality is avoided. In this way, waste is no longer produced.

For manufacturers, it is an issue of their market positioning and future business orientation to design their own products in such a way that they also function in a circular-economy system. Not an easy task – but one that is associated with huge opportunities with the emergence of a value-added circular economy.

Cradle to Cradle® quality stands for quasi-infinite circulation of healthy materials within closed cycles

Added values of Cradle to Cradle®-inspired building products
The optimised products not only improve the indoor climate and are recyclable 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 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 LOWEST CO_2 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 (brand name in Switzerland: SikaRoof® AT) is a new, revolutionary technology based on elastomer modified flexible polyolefin (FPO) for thermoplastic roofing membranes and the first synthetic roofing membrane to successfully pass the rigorous certification. The Cradle to Cradle Certified® project for 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.

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 8, the Cradle to Cradle Certified® Product Program distinguishes five evaluation criteria. The following explanations follow the latest published Cradle to Cradle Certified® Product Standard Version 4.1.[4]

The certification must be reviewed and renewed with version 4.1 every

3 years.

[4] The previous version of the standard was Version 3.1 – Sarnafil® AT was certified according to that version. More on this in the comments on page 24

MATERIAL HEALTH (V4.1)

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:

Requirement	Bronze	Silver	Gold	Platinum
4.1: Product is in compliance with leading chemical regulations.	✓	✓	✗	✗
4.2: Product does not contain organohalogen substances of special concern, or functionally related, non-halogenated classes of equivalent concern, above relevant thresholds.	✓	✓	✗	✗
4.3: Product is 100% characterized by generic material.	✓	✓	✗	✗
4.3 and 4.4: Product is ≥ 75% assessed (complete formulation information collected for 100% of materials released directly into the biosphere).	✓	✓	✗	✗
4.5: Strategy developed to phase-out or optimize all x-assessed or grey-rated chemicals.	✓	✓	✗	✗
4.3 and 4.4: Product is ≥ 95% assessed (complete formulation information collected for 100% of materials released directly into the biosphere).		✓	✗	✗
4.2: Product does not contain materials with > 1% carbon-bonded halogens by weight, or recognized PBTs or vPvBs. Product does not contain EU CLP Cat.1 and 2 CMRs or substances causing an equivalent level of concern, or exposure is unlikely or expected to be negligible.		✓	✗	✗
4.7: Product has low VOC emissions (required for products permanently installed in buildings).		✓	✗	✗
4.8: Product complies with VOC content limits (required for liquid and aerosol consumer and construction products).		✓	✗	✗
4.3 and 4.4: 100% of homogeneous materials subject to review are assessed (i.e., none have a grey rating due to insufficient data).			✗	✗
4.6: Product is optimized for Material Health (i.e., all x-assessed chemicals replaced or phased out).			✗	✗
4.5: Strategy developed to either increase the percentage of preferred (A/a and/or B/b assessed) materials and chemicals in the product or optimize the chemistry in the supply chain.			✗	✗
4.7: Product has very low VOC emissions or is inherently non-emitting (required for products permanently installed in buildings).			✗	✗
4.4 and 4.6: All product-relevant process chemicals are assessed (i.e., none have a grey rating due to insufficient data) and no x-assessed chemicals are used.				✗
4.6: > 50% of the product is assessed as A/a or B/b.				✗
4.9: ≥ 75% of the product's input materials or chemicals have a C2C Certified Material Health Certificate at the Gold or Platinum level or ≥ 50% of the product's input materials or chemicals are Cradle to Cradle Certified at the Gold or Platinum level or equivalent. A strategy is developed to increase percentages over time. or Environmental health impact hotspot analysis based on life cycle assessment completed, emissions and resource use hotspots that impact human and environmental health are identified, and Material Health optimization strategy is developed based on the results.				✗

More information

PRODUCT CIRCULARITY REQUIREMENTS (V4.1)

Category Intent
Products are intentionally designed for their next use and are actively cycled in their intended cycling pathway(s).

Requirements Summary
To achieve a desired level within the category, the requirements at all lower levels must also be met.

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

Requirement	Bronze	Silver	Gold	Platinum
5.1: Intended cycling pathway(s) for the product and its materials are defined.	✓	✓	✗	✗
5.2: A plan has been created to address challenges with the cycling infrastructure at the end of the product's first use; potential cycling partners have been identified.	✓	✓	✗	✗
5.3: Select product and material types contain cycled and/or renewable content. Alternative: Limitations that prevent achievement of this requirement are publicly reported.	✓	✓	✗	✗
5.4: ≥ 50% of materials by weight are compatible with the intended cycling pathway(s) (i.e., recyclable, compostable, or biodegradable).	✓	✓	✗	✗
5.5: Circularity data and cycling instructions are publicly available.	✓	✓	✗	✗
5.2: Partnerships for cycling (recovery and processing) of the product have been initiated. If the product is intended for cycling via municipal systems, materials are compatible with those systems.		✓	✗	✗
5.3: Percentage of cycled and/or renewable content, by weight, is equal to or higher than industry averages and/or is consistent with common practice. Alternative: Limitations that prevent achievement of this requirement are publicly reported.		✓	✗	✗
5.4: ≥ 70% of materials by weight are compatible with the intended cycling pathway(s) (i.e., recyclable, compostable, or biodegradable). A strategy for improving product circularity is developed including plans for: 5.3: Increasing the amount of post-consumer recycled content and/or responsibly sourced renewable material, as relevant to the product type, 5.6: Implementing a circular opportunity or innovation, and 5.7: Improving the product's design for disassembly (if relevant).		✓	✗	✗
5.2: Partnerships for cycling (recovery and processing) of the product according to all intended cycling pathways have been initiated.			✗	✗
5.3: Percentage of cycled and/or renewable content, by weight, is consistent with values achieved by industry leaders for the product type. Alternative: Limitations that prevent achievement of this requirement are publicly reported.			✗	✗
5.4: ≥ 90% of materials by weight are compatible with the intended cycling pathway(s) (i.e., recyclable, compostable, or biodegradable) and support high-value cycling. This means that the materials are of high quality and are likely to retain their value for subsequent use. 5.7: If relevant, parts containing these materials are designed for easy disassembly.			✗	✗
The strategy has been implemented including: 5.3: Increased use of post-consumer and/or responsibly sourced renewable material as relevant to the product type. Alternative: Limitations that prevent increased use are publicly reported. 5.7: A circular opportunity or innovation that increases product circularity.			✗	✗
5.8: The product is actively cycled (recovered and processed) and/or a program is implemented to increase the cycling rate or quality of the product's materials after use. (Both are required for short-use phase products and for products required to be cycled per leading regulations; one is required for long-use phase products.) For select single-use plastic products, a minimum cycling rate of 50% is achieved.			✗	✗
5.1: At least two intended cycling pathways are defined for the product and its materials.			✗	✗
5.3: Percentage of cycled and/or renewable content, by weight, has reached the technically feasible maximum.				✗
5.4: ≥ 99% of materials by weight are compatible with the intended cycling pathway(s) (i.e., recyclable, compostable, or biodegradable).				✗
5.7: If relevant, parts containing these materials are designed for easy disassembly.				✗
5.8: The product is actively cycled in an amount consistent with the product's use phase (the shorter the use phase, the higher the minimum percentage required) and a program is implemented to increase the cycling rate or quality of the product's materials after use.				✗
Cycling rates and quality are monitored over time, and an increase in cumulative cycling rate or quality is demonstrated.				✗

CLEAN AIR & CLIMATE PROTECTION REQUIREMENTS (V4.0)

Category Intent Product manufacturing results in a positive impact on air quality, the renewable energy supply, and the balance of climate changing greenhouse gases. Requirements Summary to achieve a desired level within the category, the requirements at all lower levels must also be met.

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

Requirement	Bronze	Silver	Gold	Platinum
6.1: Final manufacturing facilities comply with air emissions regulations or guidelines – i.e., permits, international guidelines, or industry best practice.	✓	✓	✗	✗
6.2: Annual electricity use and greenhouse gas emissions associated with the final manufacturing stage of the product have been quantified.	✓	✓	✗	✗
6.3: A strategy for increasing use and/or procurement of renewable electricity and addressing greenhouse gas emissions has been developed. The strategy includes near- and mid-term targets.	✓	✓	✗	✗
6.4: 5% target(s)* for procuring or producing renewable electricity and/or addressing greenhouse gas emissions have been achieved. Applicable to final manufacturing stage electricity and emissions only.	✓	✓	✗	✗
6.5: Products that use energy during the use phase (e.g., appliances) or that greatly impact the energy efficiency of buildings (e.g., windows, insulation), are certified using a C2CPII-recognized energy efficiency standard or similar, if available.	✓	✓	✗	✗
6.6: Greenhouse gas emissions data for the applicant company, for all final manufacturing stage facilities, or for the final manufacturing stage of the product are made available to stakeholders.	✓	✓	✗	✗
6.2: For construction products and building materials used to construct primary building elements, the embodied emissions associated with the product from cradle to gate or through end of use have been quantified, a third-party critical review is conducted, and an Environmental Product Declaration (EPD) produced.		✓	✗	✗
6.3: The renewable electricity and greenhouse gas reduction strategy includes long-term target(s) in addition to the near- and mid-term targets.		✓	✗	✗
6.4: 20% target(s)* for procuring or producing renewable electricity and/or addressing greenhouse gas emissions have been achieved. Applicable to final manufacturing stage electricity and emissions only. Alternative: 25% of the embodied emissions associated with the product from cradle to gate or through end of use are offset or otherwise addressed (e.g., through projects with suppliers, product redesign, savings during the use phase). Note: This is required at the Gold level in all cases.		✓	✗	✗
6.2: For all other product types, the embodied emissions associated with the product from cradle to gate or through end of use have been quantified and third-party verification or an internal review is conducted.		✓	✗	
6.4: 50% target(s)* for procuring or producing renewable electricity and/or addressing greenhouse gas emissions have been achieved. Applicable to final manufacturing stage electricity and emissions only.		✓	✗	
50% of the renewable electricity (25% of total electricity used) is either produced on site or procured through long-term power purchase agreements (PPAs) or PPAs signed pre-financing supporting new renewable electricity installations. Alternative: Renewable electricity procurement matches 100% of electricity used at final manufacturing facilities.			✗	✗
6.6: Embodied greenhouse gas emissions data are made available to stakeholders.			✗	✗
6.7: Blowing agents used in the manufacture of the product's foam materials (any foam > 1% of product by weight) have low to no global warming potential and no ozone depletion potential.			✗	✗
6.8: 25% of the embodied emissions associated with the product from cradle to gate or through end of use are offset or otherwise addressed (e.g., through projects with suppliers, product redesign, savings during the use phase).			✗	✗
6.2: For all other product types, a third-party critical review of the quantification of embodied greenhouse gas emissions associated with the product from resource extraction through end of use is conducted, and an Environmental Product Declaration (EPD) produced.				✗
6.4: Fully electrify, use renewable electricity for total energy demand, and eliminate on-site greenhouse gas emissions: > 100% of electricity is renewably sourced. The electricity is produced on site or procured through long-term power purchase agreements (PPAs) or PPAs signed pre-financing that support new renewable electricity installations. Eligible sources of bioenergy receiving full credit (e.g., wastewater methane) may be used. Applicable to final manufacturing stage electricity and emissions only.				✗
6.8: 100% of the embodied emissions associated with the product from cradle to gate or through end of use are offset or otherwise addressed (e.g., through projects with suppliers, product redesign, savings during the use phase).				✗

* Depending on the achievement level, the "targets" may apply to renewable electricity procurement or onsite production and use, performance improvements (emissions intensity reductions), absolute emissions reductions, use of eligible bioenergy sources, purchase of carbon offsets, and/or financial donations or investments.

WATER & SOIL STEWARDSHIP REQUIREMENTS

Category Intent
Water and soil are treated as precious and shared resources. Watersheds and soil ecosystems are protected, and clean water and healthy soils are available to people and all other organisms.

Requirements Summary
To achieve a desired level within the category, the requirements at all lower levels must also be met.

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

Requirement	Bronze	Silver	Gold	Platinum
7.1: Local and product-relevant water and soil issues are characterized. (Required for final manufacturing stage facilities.)	✓	✓	✗	✗
7.2: Final manufacturing facilities comply with water quality regulations or guidelines (i.e., permits, international guidelines, or industry best practice). Data to demonstrate the compliance status of off-site, independently operated, effluent treatment facilities (if any) are requested.	✓	✓	✗	✗
7.7: Product-relevant chemicals entering effluent or sludge are in compliance with leading chemical regulations. (Required for final manufacturing stage.)	✓	✓	✗	✗
7.3: Water use at final manufacturing stage facilities is quantified.	✓	✓	✗	✗
7.4: Adequate drinking water, sanitation, and hygiene are provided (final manufacturing stage facilities only).	✓	✓	✗	✗
7.5: A strategy for achieving the Silver level water and soil conservation requirements has been developed. For facilities using high volumes of water in stressed locations, the strategy includes water use reduction targets. Progress is reported at recertification.	✓	✓	✗	✗
7.1: Water and soil related risks are characterized. (Required for select tier 1 suppliers of key materials.)		✓	✗	✗
7.2: Privately owned, off-site, independently operated effluent treatment facilities (if any), comply with effluent quality guidelines or regulations. Alternatively, a strategy to address the issue has been developed.		✓	✗	✗
7.6: The Bronze level water and soil conservation strategy has been implemented including: - At least one conservation technology or best practice at facilities expected to have the greatest water- or soil-related impacts. (Required for final manufacturing facilities with high-volume processes in stressed locations and facilities with pollutant-intense processes.) - One additional action to conserve water and/or soil either at final manufacturing facilities or in the supply chain. (Required when there are any facilities with high-volume or pollutant-intense processes and/or in stressed locations.)		✓	✗	✗
7.7: Product-relevant process chemicals entering effluent and sludge are defined and assessed.		✓	✗	
7.7: Product-relevant effluent and sludge does not contain recognized PBTs, vPvBs, or EU CLP Cat.1 and 2 CMRs, or substances causing an equivalent level of concern, or exposure via effluent and sludge is unlikely or expected to be negligible. (Required for final manufacturing stage.)		✓	✗	
7.7: Water use data are made available to stakeholders.		✓	✗	✗
7.5: A strategy for achieving the Gold level water and soil conservation requirements has been developed. Progress is reported at recertification.		✓	✗	✗
7.2: Government owned, off-site, independently operated effluent treatment facilities (if any), comply with effluent quality guidelines or regulations. Alternatively, a strategy to address the issue has been developed. For recertification at the Gold level, all off-site, independently operated effluent treatment facilities (if any), comply with effluent quality guidelines or regulations. Alternatively, manufacturing facilities comply with effluent quality guidelines for direct discharge or otherwise address the issue.			✗	✗
7.6: The Silver level water and soil conservation strategy has been implemented including: - Conservation technologies and best practices at facilities expected to have the greatest water- and/or soil-related impacts. (Required for all final manufacturing facilities with high-volume or pollutant-intense processes and/or in stressed locations.) - Actions to conserve water and/or soil in the supply chain, including the use of certified materials, working as part of multi-stakeholder group(s), and/or working directly with suppliers to implement water and soil stewardship requirements and address the processes of concern. (Required for key materials in scope.)			✗	✗
7.7: Product-relevant chemicals in effluent and sludge are assessed and optimized (i.e., none are x-assessed or grey-rated). (Required for the final manufacturing stage.)			✗	✗
7.9: A positive impact project that addresses local and/or product-relevant water and/or soil issues has been implemented.			✗	✗
7.8: Water quality data are made available to stakeholders.				✗
7.7: Product-relevant chemicals in effluent and sludge are assessed and optimized (i.e., none are x-assessed or grey-rated). (Required for key materials where pollutant-intense processes occur at tier 1, or at any tier for leather, metal finishing, pulp/paper and textiles.)				✗
7.9: Impact of positive impact project demonstrated.				✗
For final manufacturing stage facilities: - A comprehensive effluent and sludge quality management system has been established, and - Effluent and sludge produced as a result of all manufacturing processes used at the facility are optimized.				✗

SOCIAL RESPONSIBILITY (V3.1)

The Social Responsibility 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.

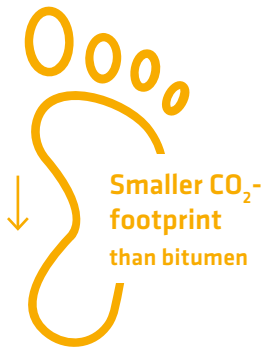
Sika meets the following criteria with Sarnafil® AT and thus achieved Gold:

Social Responsibility	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

The new product Sarnafil® AT by Sika is a further development of the proven Sarnafil FPO roofing membranes into an even higher-performance product generation with a convincing service life. Designed for forward-thinking architects, discerning builders 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.

In addition, Sarnafil® AT has a smaller CO_2 footprint than bitumen: When comparing the FPO roofing membrane with a two-layer bitumen waterproofing of 3 and 5 millimetres thickness on a roof surface of one square metre, the CO_2 saving is 8 kg CO_2 equivalents.

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 safer. 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.

55 YEARS
SERVICE LIFE
for Sarnafil® TS/TG type roofs

Rieche-Study

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. This simplifies planning.

[7] Source: KBOB

MORE PERFORMANCE – MORE SUSTAINABLE

SUSTAINABILITY AT SIKA

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.

Sustainability is a cornerstone of Sika's 2028 Strategy. 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, environment and social issues, we keep all three pillars of sustainability in mind and focus on the following strategic goals:

TARGET AREA	TARGET 2028	PERFORMANCE 2024 vs. BASELINE
INNOVATION & SUSTAINABILITY		
CLIMATE Sika aims to support the transformation of the construction and manufacturing industries toward net zero.	**–20%** **of scope 1 and 2 absolute GHG emissions.** 2022 baseline	**–19.5%** **of scope 1 and 2 GHG emissions.**
	Scope 3 absolute GHG emission reduction in line with net zero pledge. 2022 baseline	**–0.1%** **of scope 3 GHG emissions.**
NATURAL RESOURCES Sika takes responsibility for minimizing its impact on natural resources and preventing pollution.	**–15%** **of waste disposed per ton sold.** 2023 baseline	**–4.0%** **of waste disposed per ton sold.**
	–15% **of water discharge per ton sold.** 2023 baseline	**–7.0%** **of water discharge per ton sold.**
PEOPLE & CULTURE		
EMPLOYEE ENGAGEMENT Sika aspires to create an attractive, inclusive, and safe work environment where people can grow and unlock their full potential.	**>80** **employee engagement score,** measured through a Global Employee Survey every two years.[1]	**86/100** **employee engagement score.**

1 First survey conducted in 2024, the next one will take place in 2026.

Sika is committed to developing products featuring improved sustainability and performance properties. Sika, as an enabler for its customers to reduce their CO_2 footprint, offers products and services that make an important contribution to the decarbonization of the construction and transportation industries. The company has set a goal to reduce absolute Scope 1 and 2 GHG emissions by 20% compared to 2022 and to align Scope 3 emissions with its net zero pledge by 2050. In addition, Sika aims to reduce waste disposal and water discharge per ton sold by 15% by 2028.[1]

Sika's purpose is to anticipate and meet future challenges by providing reliable, innovative, sustainable, and long-lasting solutions in the construction, building, and manufacturing industries. The company provides a seal of quality on which its employees, customers, and stakeholders can rely – building trust every day.[2]

[1] https://www.sika.com/en/about-us/strategy.html
[2] For more information: https://www.sika.com/dam/dms/corporate/media/glo-ar-24-annual-report.pdf.

Detailed explanations of the individual target fields are available here:
Strategy 2028

As a manufacturer of building products and systems as well as solutions for industrial production, we have long been committed to greater sustainability. With the formulated **goal of "Sustainable Solutions"**, we promote targeted new and further development as well as the reduction of adverse environmental effects of our products. This also applies, for example, in the area of industrial manufacturing, where Sika makes important contributions to the avoidance of emissions with, among other things, lightweight construction solutions for the automotive industry or with products for systems for generating renewable energy.

Our trained DGNB consultants support customers and partners with all questions regarding DGNB certifications.

At the same time, sustainable construction is a high priority for us. A large part of the Sika product portfolio meets the strict requirements of recognised building certification systems. As mentioned on page 6, we mastered the practical test in 2014 with our own building, which was planned, built and successfully certified according to the specifications of the German Sustainable Building Council (DGNB). Since then, Sika products have been used in many certified buildings. Our trained DGNB consultants support customers and partners with all questions regarding DGNB certifications. With their detailed knowledge and experience of the DGNB system, they are competent contacts for sustainable construction.

On page 7 we described that Sika began providing sustainability documentation for its products at a relatively early stage. This is because when buildings are constructed according to sustainability criteria, extensive information about the products used must be confirmed. The product-specific Sustainability Data Sheets present these details clearly and concisely. Many Sika products have a product-specific EPD or are covered under a product-group EPD. Social life is also part of sustainable action. That is why Sika specifically supports sports clubs and their events as well as cultural events at company locations. Instead of Christmas gifts for customers and suppliers, food banks receive an annual donation.

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.

GRI Report

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.

COMMENTS

In May 2024 the C2CPII published the latest version of the standard: V4.1. This latest iteration of the standard brought new changes to the 5 categories (some of the category names have also been changed). The Sarnafil® AT certificate is valid until June 2026.

THE Cradle to Cradle®-PRINCIPLE:

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

©Cradle to Cradle Products Innovation Institute

SIKA SERVICES AG
Tueffenwies 16
CH-8048 Zurich
Switzerland

Contact
Phone +41 58 436 40 40
www.sika.com
www.sika.com/en/sustainability

BUILDING TRUST