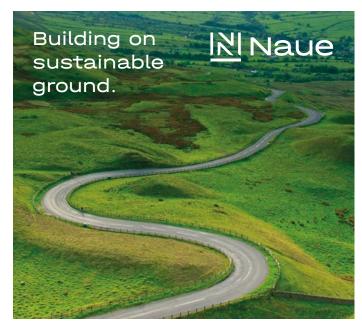


# Sustainability is not a platitude. It is a promise.

A promise we will keep. How? With innovative ideas that make a difference. For you as a customer, for our environment and for future generations. Those are exactly the ideas we have adhered to at Naue – for more than 60 years. As one of the world's leading producers of geosynthetics, we stand for technologies and solutions that make long-lasting, eco- and climate-friendly construction possible.

This is why "Building on sustainable ground" is not just a slogan. It is not another claim or marketing phrase that can easily be substituted for another, but a promise. Our promise to unite modern technologies with economic efficiency, public acceptance and sustainable action. As a family business, we take responsibility for our customers, our employees and for our environment – we would gladly have you by our side.

How exactly will we achieve this? In the following, we will introduce you to the technologies, services and products we use and demonstrate how we will make your project more sustainable. Let's talk about this!





# Current challenges.

## The Earth has a fever...

...and we all feel it. Droughts, soil erosion and flooded coasts are the visible symptoms of a planet on the verge of burnout. Compared to the pre-industrial age, the average temperature will have risen up to 1.5 degrees Celsius by 2030 – a decade earlier than scientists had predicted in 2019. The problem is that climate change is, in the truest sense of the word, unfathomable.



Humanity has caused a 50% increase of  $CO_2$  concentration in the air since the 1960s.

Sea levels could rise by up to 90 centimetres by 2100.

Approximately 40% of our plant and animal species are threatened with *extinction* because of climate change.

Since 1945, we have lost 1.2 *billion hectares* of agricultural land to soil erosion – the combined size of China and India.



# Current challenges.

Climate change is so complex and diverse that even renowned scientists are often inconclusive in their statements. And yet: we must act determinedly and consistently, for example, by lowering greenhouse emissions during the production and construction phase. Flooding, whether along rivers or coasts, can be prevented to protect nature and habitats, and soil erosion can be stopped or limited. To do this, we need solutions and concepts that we aspire to implement with you.



According to the latest estimates, up to 20 million tons of plastic are released into the sea every year.

The main sources are, e.g. improper waste disposal (especially from one-off, short-term use, e.g. plastic bags), tyre wear from truck and car traffic, fibre residues from industrial textile washing or microparticles from cosmetic products.

It takes 450 years for a PET bottle to be decomposed by seawater.

1.229 grams of microplastic tyre wear

is released into the environment per person every year.

Construction methods that reduce the amount of microplastic released are an absolute must! We can only overcome these challenges when we recognize the problem, evaluate it with expertise and then use our innovative strength to solve it.



# We assume responsibility.

## ...and here's how we do it.

Environmental protection concerns everyone. For Naue, sustainability means that we question ourselves and do not stop with what we have achieved so far. That is why we at Naue continuously invest in **the research and development of innovative solutions.** The results are technologies and products that lower transport emissions, reduce the use of microplastics, protect groundwater and stop soil erosion.

What you can always expect from us: **certified environmental and energy management** as well as responsible handling of raw materials and resources. We are convinced that economic success and sustainability are not mutually exclusive. This is what we have been practising for years by enabling our growing customer base to work more economically and sustainably with our solutions and products – in Germany and worldwide.

"As a **third-generation family business**, long-term thinking and action are part of our DNA. At Naue, we apply our experience and expertise to the protection of natural habitats and groundwater. Our infrastructure also benefits sustainably through an extended service life. Together with you, we will lay the foundations to build a more sustainable future. Together and for each other."

Alexander Naue, Managing Director



## Our dedication.

Naue complies with the United Nations **Sustainable Development Goals (SDGs).** We regard these 17 SDGs as the basis for sustainable action. In addition to economic and environmental aspects, sustainability has, above all, societal and social effects. With our solutions and products, we support the transformation to a better, more climate-friendly and more sustainable society.

- Protection against floods, desertification and soil erosion must be the main short-term objective to safeguard agricultural production areas, the living and economic area. With flood protection concepts, the reduction of microplastics, greening and erosion control systems, our solutions enable life on land (SDG 15) and under water (SGD 14). In this way, we help to prevent the impoverishment of entire regions.
- Naue is represented in and contributes to the economic growth of many countries. Naue employs people of many nationalities. We attach great importance to diversity and respect for one another as well as occupational safety and health. Through the Naue Academy, we refine the training and further education opportunities of our highly qualified team and share knowledge.

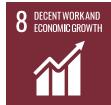
**9** An industry that is built sustainably with a strong infrastructure and constant innovation paves the way to social prosperity and economic efficiency. We also invest in software to optimise planning processes and embrace digitalisation so that our activities are resilient.



















We prioritise product development that serve climate protection. The construction methods implemented with our products reduce greenhouse gas emissions. By expanding our production facilities, we also minimise transport routes. This way, we save energy, improve production processes and optimise material waste.

# Today we find solutions to the challenges of tomorrow.

How can we effectively prevent coastal flooding and repair flood damage? What concepts can be used to protect groundwater from contamination and stop soil erosion? Important questions to which we need to find answers to every day. This is why at Naue, our highly qualified engineers, technicians and developers together work on solutions that enable us to overcome even the most difficult challenges. Here are just a few examples of how our products and services are used in practice.

4 We share our knowledge and experience through personalised trainings courses, lectures and our online academy - and address this to our social responsibility to support respectful and environmentally friendly design of civil engineering projects.



















With the development of our "clay liner from a roll" and with highly complex sealing systems for landfill construction, we have been helping to prevent the emission of pollutants for decades. Our sealing systems collect drinking and rainwater, direct water for irrigation and buffer pollutants. They also stop operating materials originating in transport and infrastructure facilities from reaching groundwater.

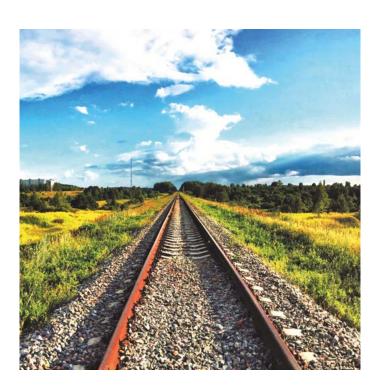
Our task is the sustainable use of resources. We ensure efficient product standards, focus on optimising long-lasting products and invest in the renewal and modernisation of our processes and facilities.

Naue is part of numerous important associations, committees and organizations of the industry and often leads the way in promoting sustainability, quality and product safety.

# Examples from our daily life.

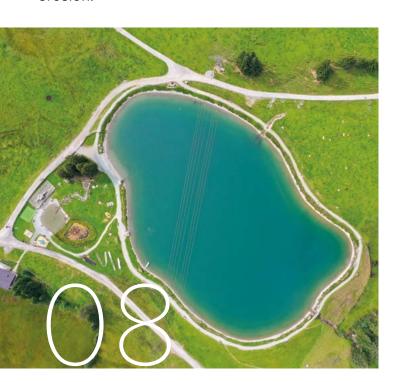
## Stable traffic routes.

Products such as our high-strength geogrids and composite materials increase the safety and longevity of buildings. Moreover, they enable efficient and resource-saving infrastructure projects. For example, transport and infrastructure facilities, such as those for renewable energies, can be built on soils with a low bearing capacity, on which any construction vehicle would otherwise fail – without having to interfere with the groundwater balance and the subsoil structure. And: the effort required for the use, transport and storage of bulk materials required for construction can thus be effectively reduced.



# Protection against natural hazards.

Erosion control, coastal protection, levee resilience, protection against mudslides and against falling rocks – all these solutions help to preserve natural, living and economic areas. Products such as our Secutex® SoftRock have proven to be effective in many ways. While this construction is installed to be invisible under everyday circumstances, it forms the last bastion when extraordinary storm surge events cause enormous coastal erosion.





# Protecting groundwater and soils.

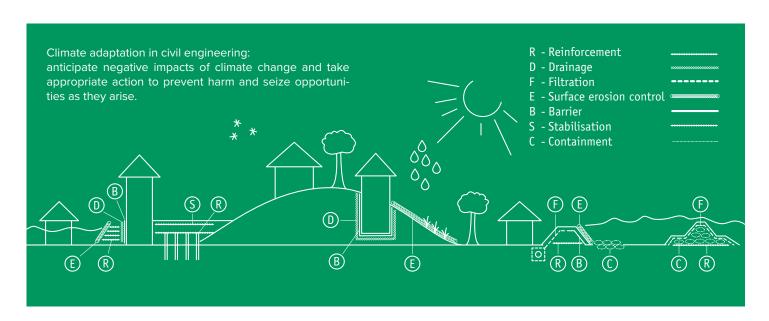
Railway lines, roads and infrastructure are never emission-free. It is important to seal structures so that produced pollutants can be captured and separated, and do not reach the drainage systems or groundwater. Clay liners from a roll or geomembranes, or a combination of both, protect the groundwater in the long term and withstand even the toughest chemical stresses. In this way, the soil and groundwater are preserved and emissions from transport routes are limited to small areas.

## Support of adaptation strategies.

Climatic changes can and must be delayed and limited. We are working on this together with you as our customers and partners.

Unfortunately, we cannot stop the effects of global warming completely. However, to minimise the social, societal and economic impacts, we must act. Under the key word of Natural Hazard Mitigation, we are therefore working to counter the effects of heavy rainfall, erosion and other impacts of climate change.

To this end, we develop structural systems such as raised dykes or protective walls in the mountains. As a contribution to the climate impact strategy (climate adaptation), we design, for example, piled embankments, flood plains and polders or transport routes that are robustly designed.



Every project is unique. Our solutions, which we are constantly developing, are correspondingly tailored. This is how we accompany companies, authorities and organisations on their way to a safe, economically successful and ecologically sustainable future.



## Geosynthetics.

## We create values.

We rely on geosynthetics. For that reason, we work with a large number of different materials. The largest group is geosynthetics. A word about plastics: modern medicine, water supply and especially wastewater disposal rely on these materials. The reason: plastics allow construction methods and designs that would simply not be possible without their high flexibility and versatility. Synthetics have some unique advantage: they are resistant to chemical impacts; they are robust and extremely stable. And they adapt themselves: not only in the very flexible shaping and manufacturing, but they have also become

more eco-friendly, more sustainable and recyclable. We, too, develop, process and use them in the interest of sustainability.

The majority of our geosynthetics are made from single-variety material. Hence, they are ideal for use in several usage cycles and have a particularly long service life. This means that our products can fulfil their function for many decades whether in landfills or in groundwater protection. It is no wonder that testing, verifications and certifications are designed to last for 25, 50 or even more than 100 years.



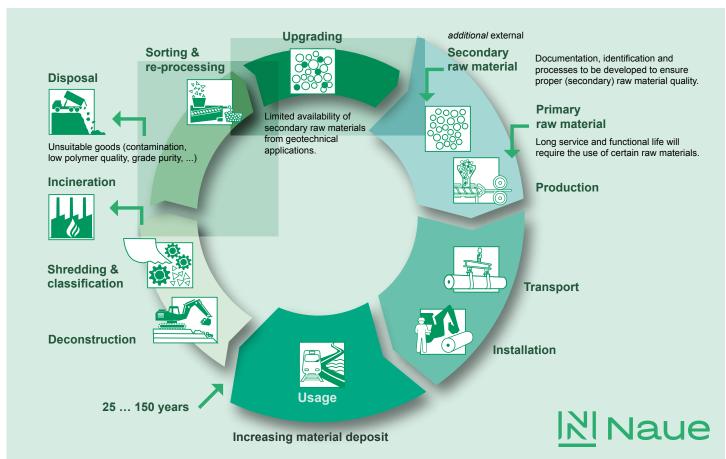
Creating values, maintaining values – with durable geosynthetics.

10

# Circular economy.

The current transition to a circular economy can also be found in the construction industry. Renaturation, the processing and re-use of raw materials from recycling, are not utopian ideals, but feasible objectives. The raw materials to do this are literally at our feet – for example as sealing elements, drainage mats, geogrids or separation and filtration layers.





The circular economy of geosynthetics. In focus: the exceptionally long service life.

# Digitisation - a door opener for a closed circuit.

We provide all relevant data so that planners can consider and evaluate the low emissions of construction methods with our products. These are summarised in the Environmental Product Declaration (EPD). This data is your entry point to a detailed evaluation process of the entire service life of a building.

Digital services such as planning tools, design software, apps for construction site logistics along with a well-established internal network help to optimise processes. This way, no information is lost. The database of tomorrow is increasing so that we always know exactly where our products are, what condition they are in and how we can reuse them.





# Prepared for all applications.

Geosynthetics cover an enormous range of sustainable applications. For this purpose, they were developed, tested and validated by many years of use. And yet, there are some applications that concern us. For example, applications in which a change in the geometric dimensions of the building takes place for example on embankments, on highly erosive coasts, in high mountains or in temporary constructions such as construction roads. Durability is not required in these applications.

Dismantling is not always technically possible. Or it is not wanted, as it would mean a new interference in the equilibrium that has just been created. Here, it would be ideal if a product could decompose after use and serve as a nutrient. With the development of our GreenLine product family, we offer exactly that type of solution and are thus prepared for all applications.



The development of a new product family is exciting – it is nice when an idea becomes reality.



Biodegradable nonwovens for construction and agricultural roads.

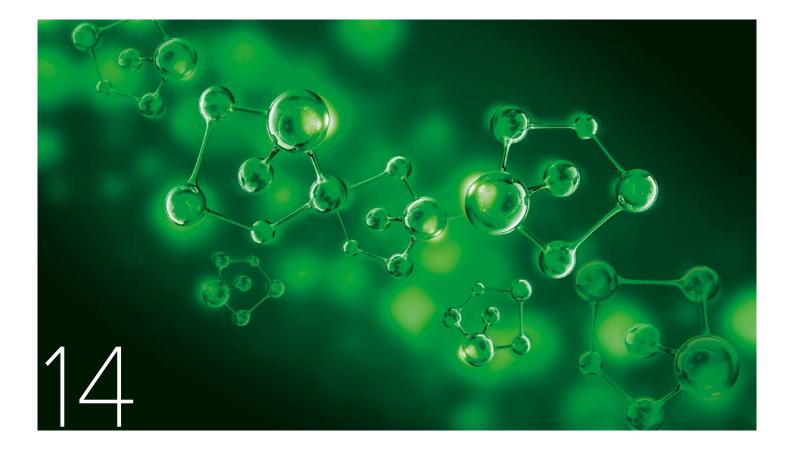


If natural processes are allowed, shore areas are subject to constant geometric changes. Built-in construction products such as Naue GreenLine adapt to this.

## Sustainable management.

Sustainability serves above all to protect the environment and future generations. Aside from this, for companies in particular, there are also very strong arguments in favour of our solutions: with us at your side, you save important raw materials and resources, which you can then invest in your core business. When you use the potential of innovative technologies, you gain an important competitive edge.

Customers appreciate commitment to sustainability just as much as investors or government agencies. When selecting their future employer, even the most sought-after specialists pay attention to an authentic stance towards the environment. Collaboration with Naue can be the first chapter of your sustainable success story. Let's write this success story together!



### Think, Act. Green.



#### We are already thinking about tomorrow, today

#### Think.

The world is facing significant challenges: Climate change and the necessary reduction of our carbon footprint, to the transformation of urban infrastructure and the preservation of biodiversity.

#### Act.

Naue has recognised the signs of the times. That is why we make essential daily contributions to actively reduce harmful environmental impacts and protect natural resources with the help of sustainable solutions.

#### Green.

Naue leads by example and cultivates a holistic approach. The potential combination of different products can create a synergy improving the application of individual components.

## thinkactgreen.eu





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Building on sustainable ground.

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