SHIBATAFENDERTEAM

on the safe side

Sustainability Report.

For a Better Tomorrow

Contents.

SUSTAINABILITY IN THE FENDER INDUSTRY

Sustainability Report

60 + YEARS
of experience

STRIVING FOR SUSTAINABILITY

With over 60 years of experience, the SFT Group has established itself as the globally trusted company in the maritime industry.

At ShibataFenderTeam, our aim is to deliver the best fender systems for a safety critical environment that protect people, vessels, and port infrastructure.

This fundamental idea guides our actions and decisions across all levels of our business. It serves as the compass that steers our strategic direction, ensuring that we continue to strive for our commitment to safety and protection in the maritime world.

Sustainability is a paramount concern in the maritime industry. As a true partner, we have always been dedicated to making a profound impact on the industry while supporting a better and greener tomorrow. For us, this commitment means aligning our company goals with a responsibility to our people, the environment and responsible business behavior.

The ShibataFenderTeam Group, as the global market leader of fender solutions, is proud to protect.

A sustainable approach

Our Japanese parent company, Shibata Industrial, holds the ISO 14001 certificate, revealing our dedication to maintaining an effective environmental management system. This certification ensures that we adhere to stringent environmental standards throughout our operations, including the responsible sourcing of raw materials.

The world currently faces critical challenges that have far-reaching implications for the planet and society. In the maritime industry, we particularly recognize the impact of a growing population and the increasing consumption of natural resources.

The surge in cargo and maritime passenger traffic is a tangible manifestation of these global challenges in our industry. With more ports, vessels, and operations, the need for safety solutions to protect this traffic becomes even more crucial, posing significant challenges for the maritime industry.

Addressing these challenges requires collective effort from the community and its stakeholders. At ShibataFenderTeam, we believe that it is our role and responsibility to contribute to the creation of a sustainable society through our business and activities.

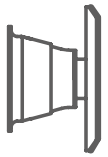
To that end, we have focused on three strategic priorities: carbon reduction initiatives, corporate responsibility and people. By tackling carbon emissions, prioritizing the well-being of our people, and upholding responsible business practices, we actively work towards addressing the pressing challenges facing the maritime industry.

Additionally, the SFT Group is the first in the industry to be in the position to provide product specific figures on CO_2 emissions for each order of engineered fender systems upon request – with our new Carbon Footprint Assessment.

In conclusion, ShibataFenderTeam is committed to protect people, vessels, and infrastructure for a sustainable future. With a strong emphasis on safety and sustainability, we strive to make a positive impact on the maritime industry and contribute to a better, greener planet for generations to come.

CARBON REDUCTION INITIATIVES.

CARBON REDUCTION INITIATIVES



DESIGN

By using the “holistic approach to fender system design”, the SFT Group and our experienced team of engineers design fender systems with an extended life cycle and a lower rate of early refurbishments. This is what we call a ‚green design‘ approach, showing the durability and reliability of our solutions, leading to a more sustainable maritime industry.

COMPONENTS

The highest impact of our carbon reduction initiatives is with the components of a fender system and their manufacturing method.

The SFT Group offers various alternatives to regular components which offer the same high quality but ensure a lower carbon footprint.

DISTRIBUTION

Shipment and transport of our fender systems and components – from place of manufacturing to place of installation – goes a sustainable and resource-efficient way. The SFT Group works with carriers and shipping companies which operate on green fuels to decarbonize ocean logistics and to support our clients to reduce their carbon footprint.

MAINTENANCE

Maintenance is an underestimated but valuable sustainable factor. Well maintained fenders will increase operational lifetime, reduce potential accidents and result in a lower CO_2 value attributable per year – all adding to the SFT Group‘s goal to avoid wasting resources. In addition, refurbishment of fenders is part of our sustainable services.

DESIGN

ShibataFenderTeam leads the industry with its Holistic Approach to fender system design. We understand the costly consequences to port operators when fender systems fail or perform inadequately due to design flaws.

Our Holistic Approach ensures the durability of fender systems throughout their entire service life, even in the harshest conditions and remote locations, making it a green design approach.

This approach starts from the early stages of engineering work. We consider client needs, project requirements, and draw upon years of experience from our in-house team of engineers.

Our focus is on delivering a design that not only prevents accidents but also protects the fender system itself. This approach yields several significant benefits:

- Extend the life cycle of fender systems: Our designs prioritize durability, allowing fender systems to remain operational for longer periods without premature replacements or refurbishments.
- Eliminate the need for early repairs: Through meticulous design, we reduce the likelihood of damages to the fender system, avoiding costly and resource-intensive refurbishments.
- Reduce wasting of natural resources: By enhancing the longevity of fender systems, we minimize the consumption of raw materials and decrease overall waste and reducing our environmental impact.

By adopting this green design approach, we advocate for a more sustainable maritime industry. We strive to maximize the longevity and durability of our fender systems, reducing the need for frequent replacements. By engineering fender systems that withstand harsh marine conditions and incorporating high-quality materials, we contribute to the overall sustainability of our products. ShibataFenderTeam embraces a greener design for a better tomorrow.

#greendesign by SFT

COMPONENTS

Ensuring the quality of our products is of paramount importance to us, which is why we strive to produce as many components in-house as possible. This dedication allows us to maintain strict control over the manufacturing process and guarantee the highest standards for our fender systems.

By prioritizing responsible manufacturing practices, we work towards creating durable fender systems that can withstand the rigorous operational conditions, effectively safeguarding people, vessels, and port infrastructures.

The SFT Group offers various sustainable alternatives for most of the system components, which offer the same high quality but ensure a lower carbon footprint.

Natural Rubber

Main component for the manufacturing of rubber fenders. As a natural product, with Southeast Asia being the main producer worldwide, responsible and ethical sourcing is of major importance.

Typically, rubber fenders are made from a blend of polymers, e.g. natural rubber (NR) and synthetic rubber (SR). As a leading provider of high-quality fender systems and marine accessories, we understand the importance of responsible sourcing of natural products and its impact on the environment.

Rubber is a vital raw material used in the production of numerous everyday products and about 40 % of worldwide rubber consumption is based on natural rubber. However, the significance of rubber often goes unnoticed.

At ShibataFenderTeam, we recognize the importance of rubber and its impact on both our industry and the environment.

Natural rubber (NR) is sourced in form of latex from the Pará rubber tree (Hevea brasiliensis) in an area approximately 15° north and south of the Equator, with Southeast Asia being the main producer worldwide. To ensure responsible sourcing, we have established strong partnerships with rubber suppliers in Southeast Asia, particularly in Malaysia, making it an ideal location for our main factory.

Aligned with our sustainability goals, we actively seek suppliers who adhere to sustainable and ethical rubber sourcing methods.We hereby ensure that our raw materials are harvested in an environmentally conscious and socially responsible manner. This includes monitoring deforestation risks, preserving biodiversity, and promoting fair labor practices on rubber plantations.

By situating our facility near the source of the primary fender component – rubber, we reduce transportation distances, carbon emissions, and overall environmental impact.

Steel

Main component for the manufacturing of fender panels as well as fixings and accessories.

In recent times, one of the major milestones is represented by an improved production process for steel that provides real carbon reduction during its production: a decrease in CO_2 footprint of up to 70 % compared to conventional steel.

Steel is an iron-carbon alloy to which additional elements are added to obtain specific characteristics: tensile strength, stability, hardness, and resistance to metal fatigue. It is a vital high-tech product, that can be found in many areas of our daily life, a fact that solidifies the steel position as the foremost industrial material.

Remarkable to mention is that the steel recycling rate is globally already over 60 %, however, it also ranks among the most energy-intense and greenhouse gas-emitting industries. It is responsible for between 7 % and 9 % of global emissions, therefore the steel industry faces a major challenge. The concept of a reduced CO_2 intense production is of great interest to many processing industries, and ours, the maritime industry.

A carbon-neutral society remains inconceivable without the pivotal role of steel. The industry has

diligently pursued this objective through advancements in material science and production methods. One of the major milestones is represented by an improved production process that provides real CO_2 savings during its production: a decrease in CO_2 footprint of up to 70 % compared to conventional steel. While steel remains inevitable for fender systems, there a welcoming opportunity to contribute and participate in striving towards a carbon-neutral future by making a conscious decision when opting for the use of advanced materials like the #bluemint® steel which comes with DNV / TÜV Süd certification.

The future growth in this field is certain and comes with bright opportunities, so the time has come to build bridges towards carbon neutrality.

Strengthening our manufacturing facility presence in Rechlin, Germany, the SFT Group has access to what represents one of the first certified CO_2 reduced flat steels, made by Thyssenkrupp in Duisburg, Germany: the #bluemint® steel.

As a company headquartered in Germany, a country with a long steel history in the industrial infrastructure, we strive to utilize the finest materials for manufacturing our fender systems.

Carbon black

Carbon black is the predominant reinforcing filler used in rubber compounds and serves to improve durability and strength.

Besides natural rubber, synthetic rubber, process oil and chemical additives, it is one of the important fillers in a rubber compound.

The capabilities of carbon black are dependent not only on its amount in the rubber compound but also on its grade and particle size.

The ratio between natural rubber and synthetic rubber in the rubber blend determines the amount of carbon black that needs to be used to achieve a proper reinforcement. The industry usually uses blends of natural rubber and synthetic rubber to harness the advantageous properties of both. As natural rubber is already well-reinforced by nature, a rubber blend where natural rubber dominates synthetic rubber needs less reinforcement, and therefore less carbon black. The behavior of tensile strength is an important parameter to get an answer to the question, if the more carbon black is used in a rubber compound, if it gets better and better. When increasing the amount of carbon black, the tensile strength increases – this is what should be achieved. It however has a breaking point, and after this is reached, tensile strength decreases, as there is not enough rubber left to disperse the carbon black particles – meaning, the compound is overloaded with carbon black.

The amount of carbon black is indeed important, but in moderation and depending on the rubber used, as natural rubber needs less reinforcement than synthetic rubber. In other words, when it comes to the amount of carbon black, more is not always better. Thus, to ensure the desired compound quality, the carbon black concentration has to be chosen carefully at an early stage of the production process, keeping in mind all relevant factors. Proven by extensive testing, recycled carbon black is an alternative for the fender industry, providing the rubber compound with the same durability and strength, while leaving a smaller carbon footprint.

As mentioned, particle size of carbon black plays an important role in a high-quality rubber compound. The characteristic that is used to test that is ‘modulus’: A low modulus means that there is little force required to stretch (elongate) a specimen, which is indicative of a low-quality compound. Low modulus = low quality fender. It was proven in a great number of studies and tests that the larger the particle sizes get, the more the modulus decreased (a change in particle size from 22nm to 78nm led to a decrease of the modulus of 30 %).

UHMW-PE

Main component for the manufacturing of sliding plates. Strengthening the circular economy emerges as a paramount task for the plastic sector and steps have been done with post-industrial recycling (PIR) being a key element of a sustainable economy.

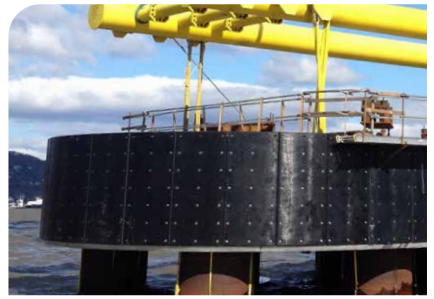
UHMW-PE, an abbreviation for Ultra High Molecular Weight Polyethylene, stands for an extremely tough thermoplastic polymer with high abrasion, impact and wear resistance. It is widely used across industrial applications demanding durability, low friction, and chemical resistance; in the fender industry, UHMW-PE serves as facing pads for steel panels and can also be found as a stand-alone product, e.g. as bridge protection.

Nevertheless, the use of plastics has surged dramatically in the past 50 years. And, despite the many advantageous benefits of plastic, the adverse consequences are now evident. How can we reconfigure plastics to prevent it from becoming waste or pollution? A circular economy.

Strengthening the circular economy emerges as a paramount task for the plastic sector and steps have been taken for post-industrial recycling (PIR) becoming a key element of a sustainable economy. PIR harnesses excess material generated throughout production – like machining, drilling and trimmings – and converts it into raw material for high-quality recycled products. The use of high-quality recycled materials decreases the demand for fossil resources, reducing the environmental footprint of end products.

This path has been championed by key plastic industry players, with high quality recycled materials, now accessible to all sectors facilitating end user companies to achieve sustainability goals.

We, at the ShibataFenderTeam Group, take pride in offering these high-quality recycled UHMW-PE to our clients, aligning our commitment to utilize the finest materials for manufacturing our fender systems with curving down the environmental impact of our products.



WHAT CONSTITUTES A CIRCULAR ECONOMY FOR PLASTIC?

One in which materials are designed to be used, not used up. A system designed to ensure no materials are lost, where circulation aims to keep them in the economy at its highest value.

One where the maximum utilization is achieved from every process, material, and component.

One that, correctly applied, benefits society, the environment, and the economy.

DISTRIBUTION

Being needed around the world, our fender systems are sometimes long-haul travelers. Between the manufacturing facility and their final destination in global ports, fender systems are usually transported by truck, vessel or train.

As a company focused on sustainability, we make an impact by favoring carriers who are committed to a zero carbon shipping goal. Along the supply chain, we evaluate where we can make an impact, and how.

One of our partners, the shipping company Maersk which aims to be climate-neutral by 2040, operates their fleet on green fuels. They support their clients, in this case us, to reach our ambitious carbon reduction goals. Maersk ECO Delivery is a sustainable choice to transport our fender systems responsibly and to move closer to net-zero emissions from supply chain related activities.

With regards to hinterland transportation, we also place special attention to truck and train carriers who operate on LNG or eco-power. Besides huge efforts of transforming their vehicle fleet, many freight forwarding companies engage in a variety of initiatives of e.g. protection of species or resource protection. Altogether important initiatives, well appreciated by the ShibataFenderTeam Group, and being a decisive factor for starting a cooperation.

Although being spread around the world and partly in remote locations, we have our supply chain in close sight, being aware of how our decision for a carrier makes an impact to greener distribution, and our overall goal, a better tomorrow.

MAINTENANCE

Commitment to Quality, Durability and Service Excellence

In addition to our responsible manufacturing system, we value to establish a strong and trustful relationship with our clients throughout the entire process, from initial consultation to installation and beyond. Our commitment to service excellence includes comprehensive maintenance services for fender systems. Maintenance is another sustainability factor in the fender industry, and along with our goals, one that we put our emphasize on. Well maintained fenders will increase operational lifetime and reduce potential accidents and in turn, avoid wasting resources.

Maintenance holds significant importance for both the end-user and operator of a port or terminal. This significance becomes particularly visible in harsh and corrosive environments, where the upkeep of fender systems is of paramount importance. Consistently maintaining all components of the fender system can aid in identifying potential damages in their initial phases and enables prompt intervention.

Planned inspections and a maintenance program serve to reduce and avoid the risk of failure and to extend a fender's lifecycle.

We advise our clients to conduct periodic assessments to reduce wear and tear, thus enhancing the service life of the fenders. Several factors come into play, such as the raw material of the fender system (e.g., rubber, foam) and the environmental conditions. The checklist for preventive maintenance, and a table with recommended levels of maintenance can be found in our Installation, Operation and Maintenance Brochure.

Through these assessments, clients can identify areas of improvement and consult with the local SFT offices to discuss further actions to ensure optimal performance.

We highly value to be at our client's side, and therefore offer to conduct the site assessment including a customized maintenance plan to assess the condition of the marine furniture as one of the many services to our customers.

Implementing a suitable maintenance scheme and providing proper training to port personnel guarantees a long service life of fender systems.

ShibataFenderTeam is your partner, offering after sales service and maintenance support to ensure a sustainable handling of your fender system. Contact us for more information.

MAINTENANCE CHECKLIST

It is advisable to prepare a checklist for routine preventative maintenance. The table below is a suggested template for collecting this information. In the event that fender damage is identified during a maintenance inspection, please contact ShibataFenderTeam for advice.

Port:	Berth Name:
Date:	Time:
Name:	Signature:

General	
Fender location:	Last inspection date:

Rubber			Fender Panel		
Ozone cracks	yes/no	(photos, size)	Paint condition, damage	yes/no	(photos)
Fixings tight, secure	yes/no	(photos)	Dents, bends	yes/no	(photos)
Cuts or abrasions	yes/no	(photos, size)	Brackets		
Spillages (paint, oil)	none/minor/major		Corrosion, scratches	yes/no	(photos)
Marine growth	yes/no	(vents blocked?)	Welds, cracks	yes/no	(photos)
Tidal operations	yes/no	(hydraulic locking?)	Accident damage	yes/no	(photos)

Refurbishment

Refurbishment of fenders is part of our sustainable services.

A prime example is our foam fender reskinning process. After years of continuous service, the outer skin of thick nylon-reinforced polyurethane that provides wear protection may become worn. Reskinning the foam fender can extend its lifetime even further.

In 2021, we performed this service for the Port of Kiel in Germany. The fenders, in service for approximately ten years, exhibited typical signs of wear and abrasion on the outer polyurethane (PU) skin. Despite this, the fenders still delivered the required performance. However, to prolong their lifespan, we recommended overhauling them. Our service involved transporting the fenders to our production plant in Rechlin, Germany, where our experts thoroughly inspected them for necessary repairs.

At our plant, which is equipped not only for manufacturing high-quality and sustainable fenders but also for foam fender overhauls, we embarked on renewing the PU skin. This process entailed removing the existing PU layers and applying a new skin (actual thickness depends on the fender's dimensions) to the prepared fender surfaces.

As part of the overhaul, we typically replace the internal chain, swivel, swivel plate, and bolts, as corrosion inevitably occurs on steel elements exposed to seawater for a decade. The refurbishment of foam fenders through reskinning offers a sustainable and cost-effective alternative to purchasing new ones, further underscoring our commitment to sustainability.

As a reliable partner dedicated to sustainability, the SFT Group extends this service to our clients, providing them with an opportunity to extend the lifespan of their foam fenders while minimizing environmental impact.

CORPORATE RESPONSIBILITY.

Sustainability Report

CORPORATE RESPONSIBILITY AND COMMITMENT TO THE MARITIME INDUSTRY

At the ShibataFenderTeam Group, we prioritize corporate responsibility to ensure the financial stability of our company, which in turn protects our employees, stakeholders, and shareholders. We have implemented robust internal policies that govern the contracts we enter into with third parties, requiring them to comply with social policies aimed at safeguarding both people and the environment.

As a key player in the maritime industry, the ShibataFenderTeam Group holds deep respect for our competitors and all parties involved. We recognize the importance to drive positive change and advancements in the industry; we always do our best to foster potential progress. In line with this, we proudly support the World Association for Waterborne Transport Infrastructure (PIANC), an organization dedicated to the better future of the marine industry. We acknowledge the responsibility that comes with our role as a PIANC Platinum Partner in terms of improving industry standards and recommendations. Through our involvement with PIANC, we contribute to global activities aimed at educating the industry on best practices in fender system design and production – read more about our industry commitment. The ShibataFenderTeam Group has not only an unconditional commitment to their company values such as engineering excellence, value engineering and passionate dedication to first class fender solutions. Integrity is of utmost importance to us, which is why we maintain a stringent policy against accepting bribes or monetary influence from third parties. By upholding these principles, we establish a foundation of trust and maintain ethical business practices throughout our operations.

PEOPLE.

IT IS THE TEAM THAT MATTERS

At the ShibataFenderTeam Group, we take pride in being a social responsible company, committed to providing equal opportunities. As a multinational and multicultural organization, we have established offices and partner agents worldwide. While we strive to be close to our clients, what truly sets us apart is our unwavering dedication to stand side by side with all our stakeholders.

Equal opportunities lie at the heart of our company's ethos. We believe in nurturing a work environment that promotes inclusivity and ensures that every individual has a fair chance to succeed.

To accomplish this, we provide continuous training and support to our employees, enabling them to enhance their skills and stay updated in the use of programs and tools necessary for their tasks. By investing in our people, we foster a culture of growth and enable them to thrive professionally.

Embracing Social Responsibility for Global Success. Our team is comprised of individuals with diverse backgrounds, each bringing their own unique expertise and strengths. The blend of this expert know-how forms an international team of fender specialists.

Drawing on their collective knowledge, we are able to deliver innovative products and exceptional solutions and services to our clients worldwide. This diversity enables us to tackle complex challenges from a broad perspective, driving our continuous growth and success.

Beyond our offices, we foster an open culture characterized by respect, enthusiasm, and cooperation. Our commitment to collaboration extends not only within each office but also across the entire ShibataFenderTeam Group. We believe that by working together seamlessly, we can leverage our collective strengths and knowledge to strengthen our position as the key player in the industry.

In conclusion, ShibataFenderTeam stands as a social responsible company that embraces equal opportunities. With our commitment and our strong values, we strive for excellence and aim to make a lasting impact on the maritime industry as a whole.

CARBON FOOTPRINT ASSESSMENT.

"Transparency and accountability are vital."

– Jan-Christoph Schoeler, Board Member at SFT

INDEPENDENT CARBON FOOTPRINT ASSESSMENT

While most fender manufacturers make broad sustainability claims – if any, product specific CO_2 emission details per order have remained elusive.

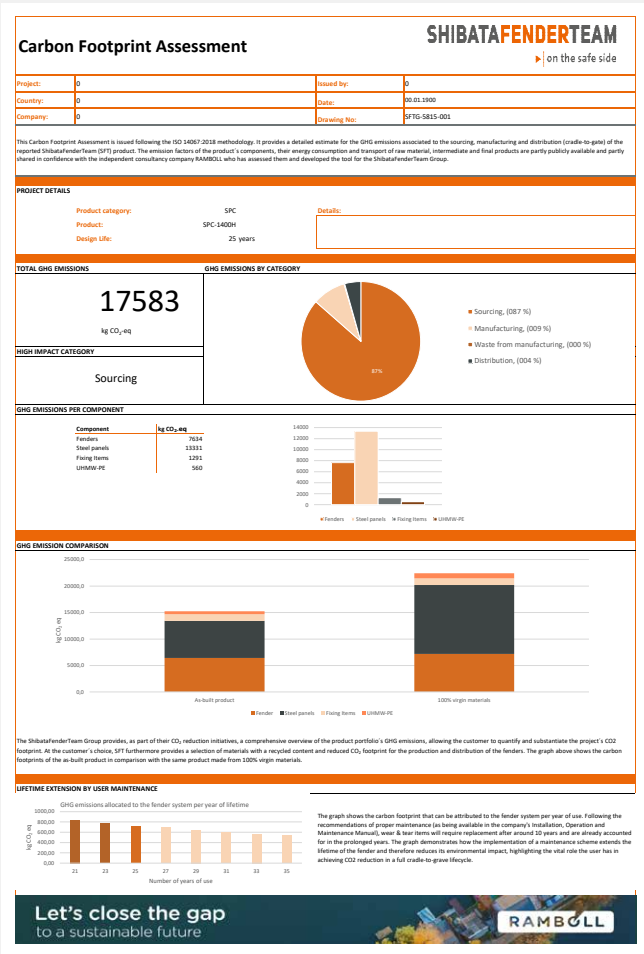
Many initiatives like solar panels on facilities contribute to reduce emissions; while this is certainly a step in the right direction, it leaves customers uninformed about the specific figures of CO_2 emissions related to these initiatives.

The ShibataFenderTeam Group is breaking the mold. We are the first in the industry to be in the position to provide product specific figures on CO_2 emissions for each order of engineered fender systems upon request – with our new Carbon Footprint Assessment.

How can SFT do that? The reason is simple yet important. While others rely on pre-mixed rubber compounds and have no control over the consistency, ingredients and quality, ShibataFenderTeam operates a fully owned compounding and mixing process, maintaining complete control over each component from cradle to gate. This assessment tool is based on ISO 14067:2018 and has been developed by the independent consultancy company Ramboll, exclusively for SFT. The assessment provides GHG emissions per individual order. The tool is based on sourcing, manufacturing and distribution (cradle-to-gate) of the ordered SFT product. Resulting emission factors are based on the product's components, their energy consumption and transport of raw material, intermediate and final product.

From now on, SFT clients are fully aware of their carbon footprint – and more important: how to reduce it. SFT offers a "green solution" to their established products, with various alternative components (such as bluemint® steel by Thyssenkrupp, post-industry plastics and recycled carbon black) which offer the same high quality but ensure less GHG emissions; and our clients can immediately see their CO_2 savings.

"Transparency and accountability are vital" states Jan-Christoph Schoeler, Board Member at SFT. "When a customer places an order with us, we believe they have a right to know the environmental cost associated with that order, and how they might reduce it."



Lifetime analysis and maintenance

The assessment tool even takes a lifetime analysis into account and the corresponding impact of GHG emissions per year of lifetime.

By implementing a proper maintenance scheme, the lifetime of a fender system could be extended by 100 % (if e. g. an expected lifetime of 10 years can become 20 years with an adequate maintenance in place). This reduces the environmental impact and highlights the vital role the user has in achieving CO_2 reduction in a full cradle-to-grave lifecycle.

10 YEARS
20 YEARS

Our clients aren't just hearing about sustainability or reading it in mandatory reportings – with SFT, they are seeing it quantified. We believe in empowering our customers with knowledge, enabling them to make greener choices.

Join us in ushering in a new era of transparency and sustainable decision-making.
Request your Carbon Footprint Assessment with your next order and get in touch with our fender experts in receiving a quotation for your individual “green” solution.

Contact us.