PARTNERSHIP FOR COMPLIANCE

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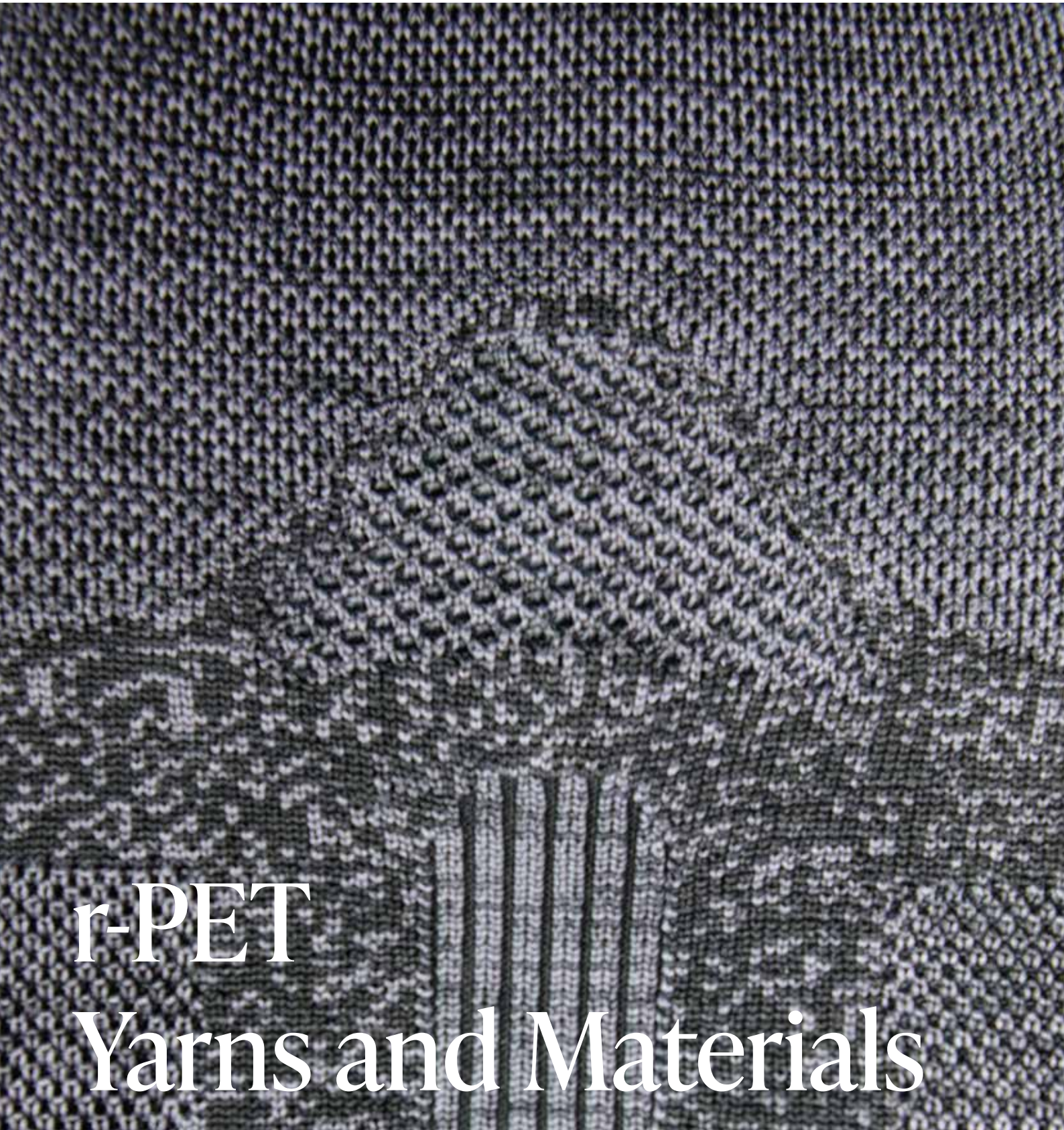
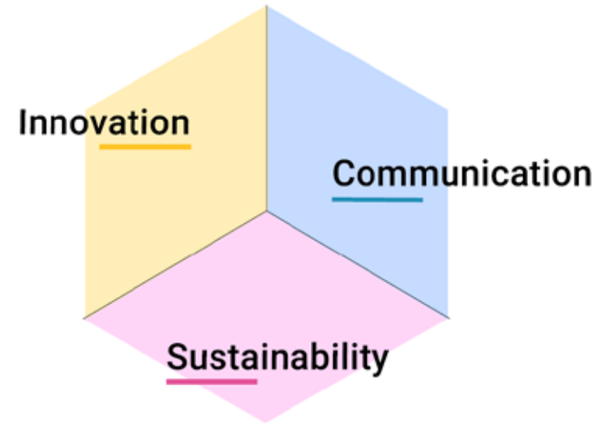


r-PET Yarns and Materials

Applied CSR with the Partnership for Compliance

The 21st century is rapidly changing the way we produce, consume and live. Stricter regulations and stakeholder expectations pose challenges for businesses with complex global supply chains. Innovation in digitisation, materials, efficient production, industry 4.0 and more have incredible potential to optimise products, minimise environmental impact, improve working conditions and create new business models. In times of information overload and short attention spans, communication and fact-based marketing are more important than ever. The ability to communicate complex information quickly and concisely, especially regarding sustainability, has become indispensable.

To help businesses keep up with these changes, Partnership for Compliance develops practical solutions that can be implemented right away. Based on three focus areas – sustainability, innovation and communication – we develop products that are sustainable and compliant, integrate innovation and come with all the necessary data and content to tell their unique story.



Sustainability + Innovation + Communication

As the challenges we are facing globally are immense and complex, we need to rethink not just what and how we produce, but also the processes and collaborations behind them. In order to find the solutions for the future we want, we will need new partnerships and business models. Partnership for Compliance brings together diverse people and organisations to trigger knowledge exchange and advance the sustainability debate. We identified three core areas to take actions in to realise our vision. One the one hand, we have to operate in the area of sustainability to make processes, production and products less harmful on environment and society. On the other hand, we need to continually improve and find better solutions by integrating innovation in all our activities. Lastly, we have to work out a way to effectively communicate what we do to the world.

I Sustainability

The economic outlook of the world is one that favours sustainable solutions. With altered consumer behaviour, new regulations and pressure from science, businesses have no way around genuine commitment to sustainability. With our activities, we empower them to obtain this license to operate with the tools and network they need.

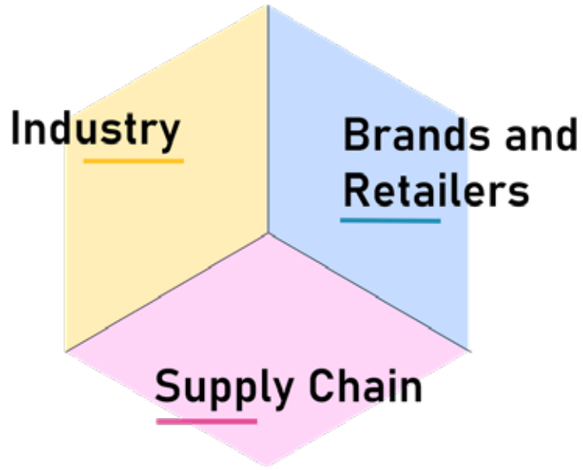
II Innovation

Innovation is using creativity to find new ways of solving existing or new problems. It is the key to problem solving in an increasingly complex world. Innovation finds its way into all our activities, not only of processes and materials, but also in finding new perspectives, new ways to work and to cooperate.

III Communication

It is challenging to communicate complex matters in a way that is both digestible and substantial. To communicate a message amidst constant media overkill, it needs to be condensed to a minimum in order to attract attention, all without sacrificing its well-founded essence. Sustainable and innovative products can be successfully marketed, but they need to communicate their story precisely, or else they will drown in the flood of information.

The Partnership for Compliance works on these three core areas with a network of forward-thinking partners. Together, we create sustainable products, implement innovative products and build new global partnerships with the aim to shape the future of fashion.



Connecting industry, supply chain, brands and retailers

Thanks to decades of experience and a wide network in the industry, we are able to connect players from industry, research, manufacturers, and brands and retailers in new partnerships. The industry develops new processes and materials, but often fails to successfully bring them onto the mainstream market. Research institutes and certification bodies develop great concepts and ideas, but struggle to apply them in the real world. Future-oriented, compliant manufacturers who have 'done their homework' often lose out to non-compliant, price-aggressive competitors. Brands and retailers, especially small and medium ones, might lack the resources to realise and develop innovative and sustainable products.

All of these actors benefit from working together. Innovations and new developments in research are practically applied, compliant and motivated manufacturers gain access to innovations, network and strength in numbers. Brands and retailers on the other hand benefit from accessing selected, compliant manufacturers as well as ready-made innovative products with sustainable story. The product comes with access to a range of services, such as KPI and Sustainability Performance Indicators, marketing materials with stories from the production and workers, and digital platform for efficient communication to manufacturers for sample development.

The Partnership for Compliance strikes a balance as practical tool that realises ambitious goals with impressive stories behind them. It is sustainable, integrates innovation, and places effective and transparent communication at its core. We connect diverse players of industry, supply chain, manufacturers, brands and retailers to Discover what the Partnership for Compliance can do in this magazine.

Our Services...

The Partnership for Compliance System

The Partnership for Compliance System creates Transparency and compliance in global supply chains - A tool for modern sustainability management and future-ready supply chains

The Partnership for Compliance (PFC) is a comprehensive system to enhance compliance and sustainability along global supply chains. With the help of training and certification, digital solutions and on-site support, both the brand/retailer and their suppliers are able to pro-actively enhance compliance and build a ongoing partnership for sustainability and compliance.

Compliant Supply Chains

With the Partnership for Compliance, CSI is offering a pool of certified suppliers with compliant supply chains. After establishing a network of proactive factories, which goes deep into the textile/apparel supply chain, this network has now been integrated in the Partnership for Compliance system. The partnership with the suppliers is based on a common understanding of the importance of sustainability and resource efficiency.

Tools for future-ready supply chain management

In order to be able to meet current and future requirements regarding compliance and sustainability, it is important to build good partnerships with suppliers and an effective communication infrastructure. Expectations by business partners regarding CSR and sustainable products and innovation can only be reached in partnership with suppliers.

In particular, suppliers need to be able to understand the expectations of the brand and possess qualified personnel to implement them. Furthermore, brands/retailers and their suppliers need to be able to effectively communicate different types of information, such as compliance-relevant documents, Sustainable Performance Indicators, etc. A good communication infrastructure and lasting partnerships are key to the future of sourcing.

Sustainable products plus services

The Partnership for Compliance offers this with the six modules that help built a bridge for ongoing partnership between brands/retailers and their suppliers:

01 Transparency and communication module
02 Documentation module
03 Audit and CAP module
04 PfC Academy: Certified staff
05 SPI monitoring and analytics module
06 Marketing module

Changed framework conditions and stakeholder expectations

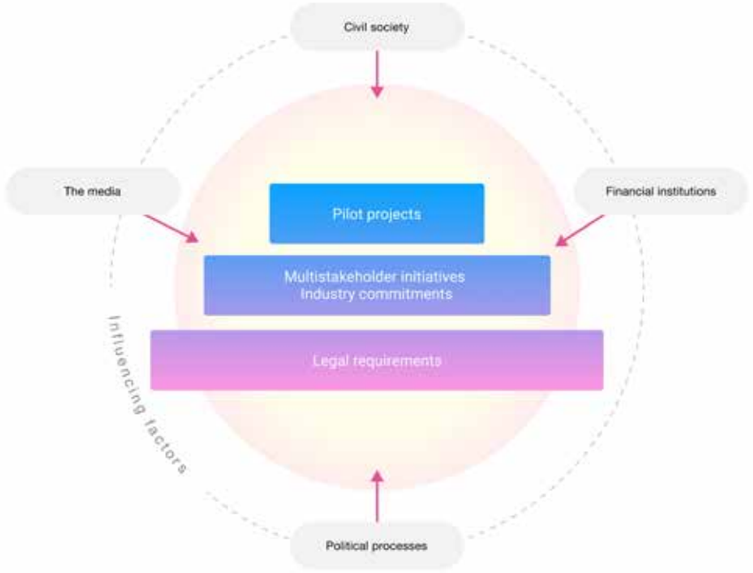
Brands and retailers face major challenges from new legal requirements and rising stakeholder expectations. There are more and more sustainability-related laws passed worldwide by national legislators, the EU, OECD or the United Nations. These laws do not just require reporting about sustainability and CSR in global supply chains, but also increasingly demand proof of compliance. Examples include the newly passed supply chain law (Lieferkettengesetz) in Germany, OECD guidelines for multinational enterprises, ILO core labour standards, UN resolutions on human right and the sustainable development goals.

It is important to remember that national and international regulations are an historical achievement that often remain underappreciated. While new laws rarely please everyone, they are only possible thanks to democratic institution and processes that allow consensus-finding and the establishment of binding rules in incredibly diverse and complex societies. Even though there are many improvements to be made and gaps to fill in international legislations, it is still impressive how much global society has achieved so far democratically. Take the German supply chain law (Lieferkettengesetz) for example: After years of multi-stakeholder involvement and debate, neither businesses nor civil society are content with it. One side claims it goes too far, the other that it does not go far enough. Nevertheless, it is incredible that we now have a binding document that will improve social and environmental compliance across the globe.

In the financial markets, sustainability ratings are becoming more and more important for insurance premiums and lending (with influence on interest rate). Environmental, Social and Governance (ESG) ratings and ratings of listed companies reward businesses with solid sustainability management. Besides that, evidence of risk management systems and regular reporting in the areas of CSR and sustainability is required.
Similarly, business partners may demand evidence of systematic sustainability management, e.g., through CSR reporting, audits, product reviews etc. For this purpose, sustainability certifications or product labels have been established that facilitate and standardise sustainability management. Moreover, socially and environmentally (more) compatible products have an edge over ‘conventional’ products as they help brands and retailers achieve compliance requirements, sustainability goals and appeal to consumers.

Consumers, NGOs and civil society demand transparency and traceability of origin, decent conditions of production and product safety. Negative headlines and media coverage can tremendously impact purchasing decisions, which is why compliance with sustainability standards and evidence of systematic sustainability management is incredibly important. There is also increased demand for socially and environmentally friendly products.

Civil society, political processes, financial markets and the media might have direct influences on brands or influence legal requirements. The baseline for any project is meeting national and international legal requirements. On top of that, there are common established voluntary commitments, such as OECD guidelines, ZDHD and other social and environmental standards. Anything beyond that are spearheading projects and initiatives that implement new concepts and ideas and lead by example. These projects may be realised with other stakeholders.



Aspects of Sustainability

Sustainability poses incredibly complex challenges. In order to realise sustainable production and consumption patterns, all parts of the product’s lifecycle will be impacted. That means stakeholders from the supply chain, brands and retailers as well as recyclers are affected in their own operations. Not only that, but they will unavoidably have to communicate and cooperate to reach overarching goals. New partnerships and ways to work together are needed.

In a world of information overload, concise messages are key. Without them, even the best project or product will not find any attention. The goal of any project should be to reduce complexity as far as possible in order to be able to communicate it effectively.

In order to reduce complexity, one must first understand it. Complexity stems from two main sources: First, the involvement of various different actors with differing perspectives and requirements. Secondly, conflicting approaches to sustainability. When we take a look at what is commonly discussed under the umbrella term “sustainability”, we find that this includes diverse aspects that in many cases have conflicting implications. Some of these aspects are:

- Longevity
- Biodegradability
- Nature/”natural materials”
- Recyclability
- Use of traditional/artisanal skills
- Digitisation
- Reduced water consumption
- Lower carbon footprint
- Living wage
- Regional/local production
- Animal rights/vegan
- Certification
- Uniqueness
- Quality/price

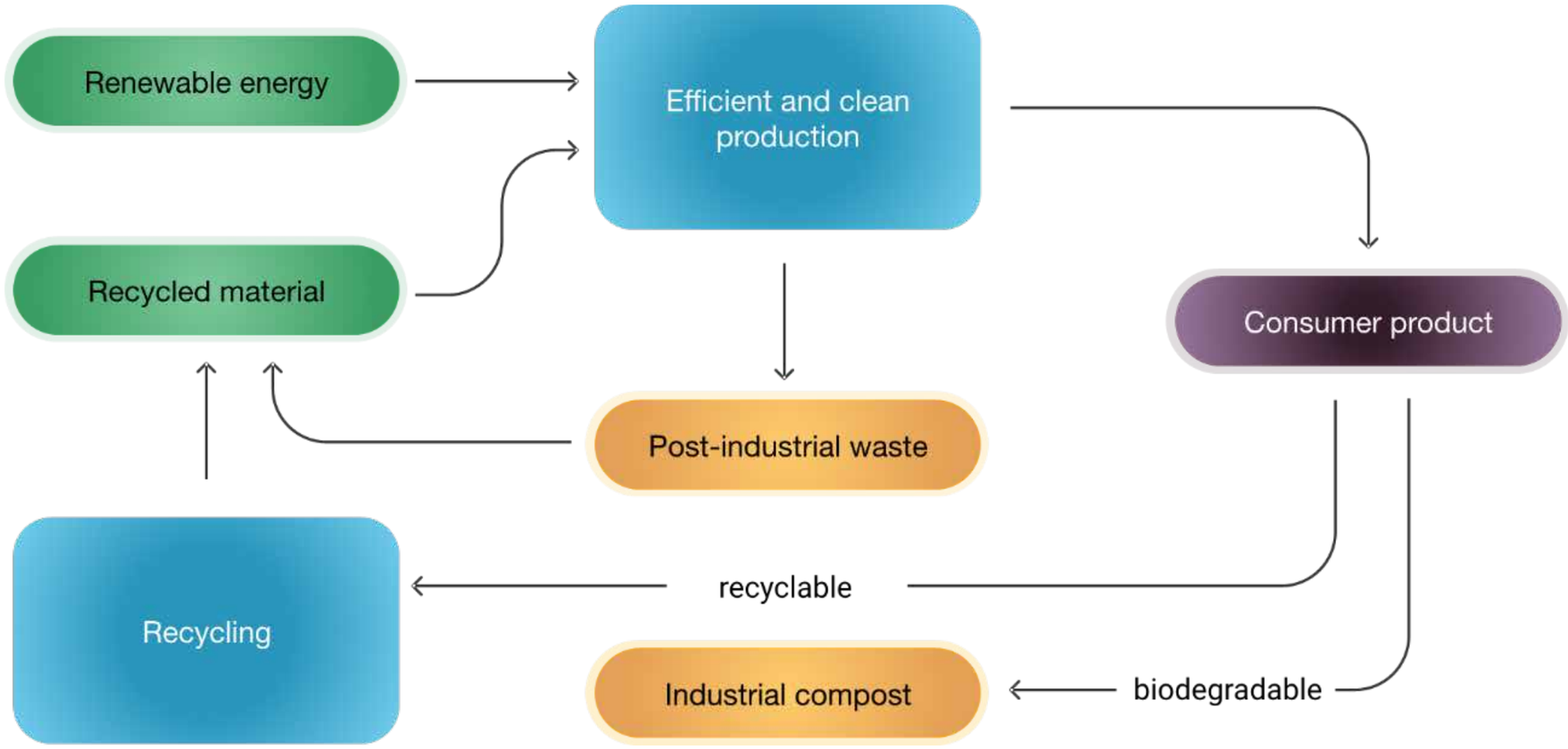
Brands and retailers may value different aspects, including several conflicting ones. It is important to first determine which aspects are important for the brand. Then, it can be assessed in how far these aspects can be realised and where they conflict.

Circularity

The circular economy is an ideal system from which as little waste as possible 'leaks', and the majority of material and energy that are put into the system are renewable or recycled, and recyclable or biodegradable. The direct way to create a circular system is product-to-product: Recycling a used product into an identical or similar product. For example, fibre from an old t-shirt is spun into a new t-shirt (or other garment). Product-to-product recycling is difficult as quality loss cannot be circumvented. Another approach to circularity is to keep it natural and produce products that are biodegradable and can be composted at the end of their life, which comes with its own challenges. Ideally, the entire system would be carbon neutral and reuse/recycle material indefinitely. However, recycling anything without quality loss and without the need for additional energy input is impossible.

Considered as optimal arrangement to preserve natural resources and minimise, if not eliminate, waste, circularity has become an important topic in public and private initiatives for sustainability in recent years. For the EU and many member states, circularity has become a key objective of economic and environmental policy. The EU has committed itself to the cause with the Circular Economy Action Plan, that supports local initiatives and leads global efforts on circular economy .

Among the industries, the fashion and textile sector is especially active in circularity. The global fashion industry produces significant amounts of waste every year that for the large part end up in landfills. With a growing world population, this problem is only going to exacerbate. Circularity is an important objective for the industry to lessen its burden on the planet. On the one hand, consumers put pressure on brands. On the other hand, industry actors pro-actively work on circularity initiatives from within.

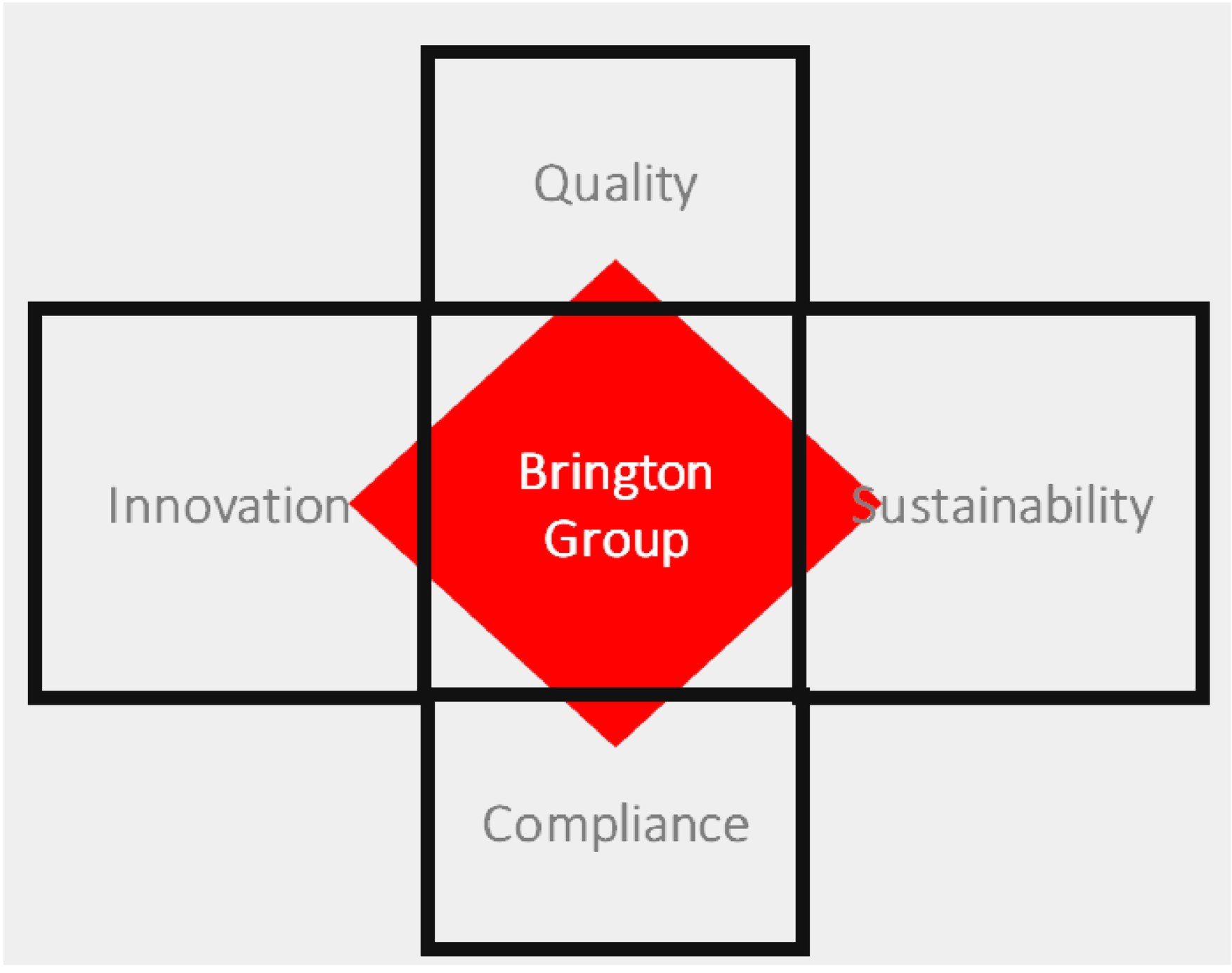


How can we make it happen?

The complexity of circularity, the partially unrelentless scrutiny by the media and unrealistic expectations by consumers have been a deterrent factor for companies. While highly innovative and comprehensive projects exist, they are niche and hardly scalable due to high standards and costs. This leaves circularity as a topic in the mouths of many but hands of the few. In order to reach the goal of a wide-scale circular economy, mainstream companies must be involved in the effort. However, there is a large gap between what and where these mainstream companies are, and what circularity proposes. As there is no perfect solution yet, companies are afraid to try and potentially not live up to the high standards of consumers, or simply do not know where to start. To ensure the future participation of companies, it is important to meet the industry where it is at and proceed from there.

Circularity needs a systematic approach

With Partnership for Compliance, CSI offers solutions to bridge that gap step-by-step that meet companies where they are at and are realisable in the short term. Creating practical solutions that can be implemented immediately is the basis for further development towards a circular economy. This foundation will create momentum for direct impact and solutions. Practical solutions create ongoing business that will again generate momentum for further development. This way, circularity can be approached step-by-step, while remaining economically reasonable at every step of the way.



Brington Group

The Brington Group Ltd. was established in 1975 in Taiwan. They moved their production facilities to China in 1988 and opened up other offices in various other countries. The Brington Group has experience of four decades in product design, development, manufacturing and distribution. The Brington Group's customer base is primarily in the USA and Europe.

The Group's core principles are quality, compliance, sustainability and innovation. They focus on the development of products made from recycled or environmentally friendly materials. Their main categories are shoes, bags and textiles.

Brington follows a strict quality control process. Each product type has a different quality control standard to ensure they meet strict requirements. The QA/QC Team is composed of educated professional that have years of experience in the their field. Their quality control goal is: No defect produced, no defect shipped.

The company is committed towards taking the necessary steps towards becoming greener and even more environmentally friendly. Brington's recycling plant uses 5.1 megawatts of solar energy and meets a 95% wastewater treatment and re-usage quota. In 2020/21, Brington Group recycled a total on 964.84 million PET bottles and saved 24,121 tons of CO_2

In Conversation With

Clement Wu & Willy Wu

Clement is the Founder & CEO of the Brington-Group, which has been in business for over 50 years, since the year 1988 in HK and China. Clement comes from the shoe business side (design & production) with strong technical and economic background.

Willy K. Wu graduated from National Central University Taiwan with a degree in Computer Science & Information Engineering in 2012. He passed ISO 27001 certification in 2014 ad has worked at Deloitte & Touche and Specien Industry Co. Ltd along with various other projects.

Brington has been a successful business for nearly five decades. What is the secret behind your success?
We have a motto in our company, saying 'Simple isn't always best, but the best is always simple. That's why we want to keep our working relationship with our customers as straightforward as possible.' This 'customer-first' concept was always part of our company's philosophy. As there is no 100% perfect in life, at least we can try hard every day to reach full customer satisfaction.

We have always focused on high expertise in product, production compliance and an intelligent supply chain management. We thoroughly understand product requirements of the destination countries and the quality expectations of our customers. To ensure high quality, we have an extraordinarily strong quality assurance team to support and check every step in the production.

Innovation is the second leg of success, and we are not only following the product ideas of our customers but also coming up with new product ideas. Usage of sustainable materials and new developments of products with low carbon footprint is a central focus of the new generation of products. Brington is committed to be one of the leaders of environmental and climate friendly products in our core areas of business – shoes, bags, textiles in our own production facilities.

You founded Brington in Taiwan but are now mostly present in Hong Kong and Mainland China. What made you move production away from Taiwan and expand in China?
Due to the increasing production costs in Taiwan, we decided to move our production facilities from Taiwan to China and set up our head office in Hong Kong to manage finances and production operation in China. We established a shoe factory in 1992, a handbag factory in 1995, a garment factory in 1998 and a toy factory in 2005 and invested in a recycling plant in 2008.

Nowadays, we are holding additional investment shares in various plants for recycling of Polyester, EVA, TPA and PU.

What is your philosophy behind Brington? Has it changed over the time, and if yes, how?
Our corporate culture and philosophy are to treat employees with care and respect like our family members. We are part of a team, and we all work together in the same boat because we face the same challenges together and we know we have to work together to achieve our shared goal. As a result, most of the employees have been working together for an exceptionally long time. We always keep our communication between departments, management and our production sites short and efficient.

How has it been working together as father & son and how do your approaches to the business differ between the two generations?
Haha – that's an interesting topic! Family businesses, like ours, are complex relational environments. The next generation is finding its feet in their own careers while older family members carry a wealth of experience. The next generation have dreams and aspirations while the incum-

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We believe the combination of technology and sustainability is the most important trend in the future.

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bent generation are concerned to protect what they have built. Family businesses must navigate these complex relationships and expectations in order to achieve long-term business success. There are other very important factors that determine whether the family business will remain sustainable. Understanding the past, present and future of the family business can help bridge the gap between generations in working together in a family business. We, fortunately, do have a very good and close relationship which does not mean that we never fight with each other – but always in a friendly and constructive way! At the end of the day, it is an interesting melange of the old values and personalized business contacts and the new world of digitalisation and e-commerce. One thing is clear in our company – business must be focused on sustainability and protection of our planet in order to have the change for coming generations to live in a healthy and prosperous world.

How do your approaches to the business differ between the two generations?
It can be summarized very short and easy: tradition vs. digital.

Both approaches have their own merits and demerits. The older generation of course follow the traditional way they have built in past decades with tremendous experience. They guide the new generation to not head in the wrong direction.

While it’s also interesting to see the new generation come up with new approaches/ tool to achieve the same goal but more efficiently.

No matter what the approach is, we believe the same thing – do the right things and do things right.

Where do you want to see Brington in 10 years?
We always keep our eyes in market trends and concepts for the last five decades and always keep on investing in new technologies, we believe the combination of technology and sustainability is the most important trend in the future.

We strive to be one of the leaders in supplying sustainable, environmentally friendly materials and products, our expectations are creating the trends, not just follow them.

We are also open to all kinds of possibilities to expand our business social network globally, we will never be satisfied with that we have achieved and will keep moving forward.

What recent projects/achievements are you proud of?
We definitely could contribute with our sustainable brands, like for example REYBOTEX and AQUALINE, to help reaching global climate goals by reducing carbon footprint and committing to climate-neutral products in near future.

We are proud to dedicate ourselves in a role to change the world and hopefully, human beings will find a balance between industries and the environment.

In Conversation With

Manfred G. Hirning

Dr Manfred G Hirning is General Manager of the Brington Group. With an experience of over 3 decades he has a strong background in chemistry, product testing, quality assurance, management systems, compliance and sustainability. He holds a Ph.D in Chemistry from Ulm University.

How does Brington manage risks in complex supply chains such as recycled PET and PU leather? What challenges have you faced/are still facing when it comes to risk management in your supply chains?
There are many different kinds of risks involved in our supply chains. We control all our facilities and subcontractors by implementing management systems for quality, environment and social aspects. To prove our compliance, all our factories have certifications. We have ISO9001, ISO14001 and we have SA8000 or BSCI for facilities with a high environmental impact combined with Occupational Health and Safety requirements according to IS045001 standard. We expect the same level of risk management from our partner factories in the supply chain. Regarding ‚product risks' we strictly follow all regulatory requirements of our markets in the EU and USA and the in-house requirements of all the big players in the consumer goods business. We're also preparing for the new Supply Chain Law (Lieferkettengesetz) of Germany and currently evaluating the gaps we still have to close for 100% compliance. Regarding chemical risks, we follow a holistic approach of input chemical management, process controls and output controls at supplier facilities to ensure that chemical risks are reduced and finally eliminated from all levels of the supply chain. For that, we're starting to do chemical risk assessments. Last but not the least, we follow strict quality assurance processes from production monitoring to the final inspection stage in order to minimize the risk of shipping goods which are not complying with customer requirements. For some of our recycled materials, like for example recycled TPR soles, we face a big challange in controlling the material to avoid contamination from the used soles we get from the collection centres. The same applies to our recycled PU and EVA products. For recycled PET, it is a different story because we get the incoming ‚raw material' from used PET bottles which can be sorted and cleaned thoroughly in our modern plant and combined with our special designed gentle melting process we can achive highest quality Polyester filaments and staple fibre. We also ensure that a minimum of 25% of the input of used bottles are from our collection system which includes six collection centres from coastal areas. This is what we can guarentee for our r-PET brand REYBOTEX™.

How did Brington become one of the first companies to be certified by PFI rmc and PFI rmc Blue?
Around two years back we worked closely with PFI for the development and implementation of a certification scheme for products made from recycled r-PET material with a defined percentage from coastal origin and the traceability documentation to have written proof of the input and output of this material throughout the entire supply chain. We conducted our first project together in 2019/2020 with sneakers for a big German discounter.

How do certifications, such as PFI RMC and GRS help your business? What challenges have you faced regarding certifications?
In today's business world you need to prove what you are doing. Third party testing, auditing & certification is crucial to build the buyers' trust and confidence in your company, your production facilities, and your products. Where GRS is more a scheme for general recycling of materials and compliance with basic environmental and social standards, PFI goes further with their traceability assessment of the entire material flow. Not to forget our Oeko-Tex100 Certificate for our r-PET filaments which shows compliance with all relevant products standards in the textile industry. It was the most challenging to build up and implement management systems in all factories of the supply chain to reach compliance with given certification requirements and standards. This process does not stop with certification, but is an ongoing process of evaluation and continuous improvement.

What opportunities do you see regarding sustainable and recycled material?
Most of our existing customers as well as new customers are asking for the use of sustainable and recycled materials instead of virgin material, particularly for plastic products. We work with laboratories and research institutions on development of further sustainable materials that can either be recycled or contribute to the reduction of the ecological footprint with biodegradability or better production processes (example 'water-based PU'). Our goal remains a product made from 100% sustainable materials, which after use can ideally be further processed or is also partly biodegradable - a long way, but it is worth going for it!

What are the top three things you want to achieve in the coming 5 years as General Manager of Brington?
We have achieved quite a lot in the last few years in terms of new recycling technologies for our r-PET filaments and yarns. Sustainability has become an integral part of our company and our facilities.
Three things we want to go for the coming years is to reach full product circularity, climate neutral products and production, and biodegradability of materials which cannot be recycled anymore. I see a clear connection between these achievements and business success.

Recycling PET bottles to polyester fibre

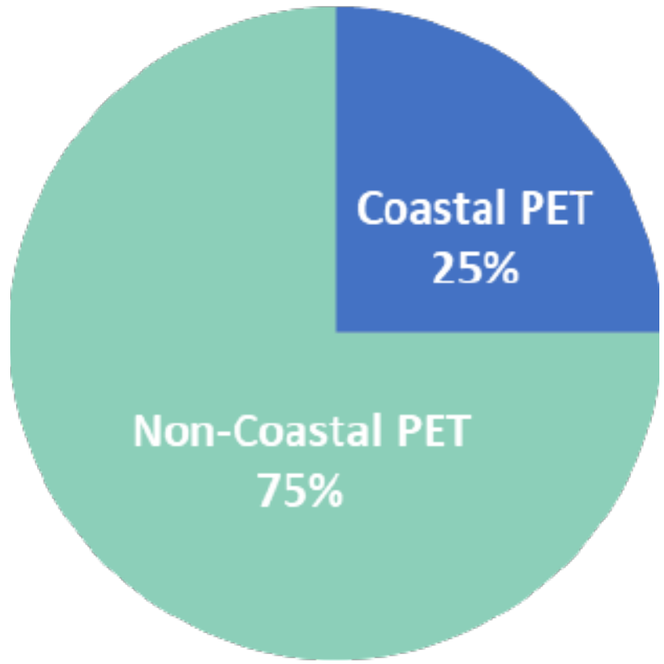
8 million tons of plastic waste ends in the ocean from coastal nations annually . In 2020, 13.1 million tons of PET bottles were produced worldwide. With global production of plastic to double by 2050, plastic pollution is a pressing issue to safeguard the health of marine life, the ecosystem, and ultimately, human livelihoods. To prevent plastic entering natural waters in the first place, we have team up with Brington Group to recycle plastic waste from coastal regions into polyester filament, which then can be used in countless types of products.

Traceability

With increasing stakeholder expectations to businesses with global supply chains, traceability of materials is now more important than ever. In order to tell a sustainable and circular story, it is also important to know the background of the material used. Besides that, it is important in order to ensure quality and compliance.

Brington recycled polyester filament and staple fibre is traceable all the way to the collection centre and information can be provided over the precise sourcing region of the PET material. Brington collection centres are compliant and qualified to ensure the quality and safety of the material. During the recycling process, records of the PET bottle batches are kept. From collection to final product, the entire supply chain is transparent and traceable, which is achieved with digital tools for monitoring and documentation.

REYBOTEX



REYBOTEX™ is 100% r-PET with 25% of used bottles collected in coastal areas (ocean bounded bottles)

Benefits

Circular story

Circularity currently enjoys a momentum in popularity, both by consumers and public actors. Circularity is one of the most promising weapons to battle environmental pollution, resource scarcity and high energy consumption. Circular products generally require fewer virgin materials, less energy and water to produce and help minimise waste. It is not just good for the environment, but also often an economical choice. On top of that, it creates a compelling story about the products. Telling the products' circular story is made simple by the verified marketing content created by the Partnership for Compliance, which will impress diverse stakeholders.

Reducing marine plastic waste

By collecting PET bottles from coastal areas, it is prevented from entering natural waters and effectively reducing the pressure of plastic pollution in oceans. Not only that, but the recycling process offers an economically sustainable and commercially attractive opportunity, which further incentivises stakeholders. As the recycled PET bottles result in a polyester filament/staple fibre that only minimally differs from virgin polyester fibre and filament, it can be used in high value end products.

Process

Collection
Brington Group provides the local network and expertise to make collection of significant amounts of usable plastic waste possible. Under the brand name REYBOTEX™, Brington has been active in the collection and recycling of plastic waste. PET bottles are collected from 6 Chinese regions close to the coast, namely Shandong, Jiangsu, Anhui, Zhejiang, Jiangxi and Fujian. Lorries packed with bags of plastic bottles arrive at the seven different REYBOTEX™ collection centres, including in Shanghai.

At the collection centres, the materials are manually inspected. Non-plastic material, such as cans, are removed, as are non-recyclable material. Then, the remaining recyclable items are sorted by colour, mainly transparent and non-transparent. The sorted material in pressed into bundles and send to the recycling factory.

Washing
After the material has arrived at the recycling facility, it is manually screened for any potential impurities or non-recyclable material. The workers are well trained in accurately screening the material. After it has been made sure the material is 100% recyclable plastic, sorted by colour, the bottles are washed and purified in large washing machines.

Shredding
The PET bottles are shredded into flakes, which is a multistep process. After the washing, the lables are separated automatically. Then, the bottles are crushed smaller and smaller, rinsed and dried, resulting in clean shredded PET flakes. This way, r-PET plant recycles 10 billion post-consumer PET bottles every year.

Spinning & Dyeing
Finally, the PET flakes are melted through several steps and spun into filament. During this process, dyeing can already take place. ‘Spin dyeing’ created homogenously coloured yarns without using any water. The colours are strong and more durable than dyeing at a later stage. Colour pigments are added to the melted PET mass before extrusion of the filament. After winding and quality inspection, the filament is ready to use.

Staple fibre production
For some products such as garments, yarn and especially yarn with recycled PET staple fibre is more suitable. We have significant quantities of recycled PET staple fibre available for your needs.

RMC REYBOTEX™
Collection Center
locations

Step 1:
Lorry arriving at Collection Center

Step 2:
Pre-sorting at Collection Center

Raw materials

Step 3:
Pressing of bundles at Collection Center

Step 4:
Bundles arrive at Recycling Factory

Storage of bundles

Training Room

Step 5:
Manual screening

Step 6:
Bottle washing

Step 7:
Shredding

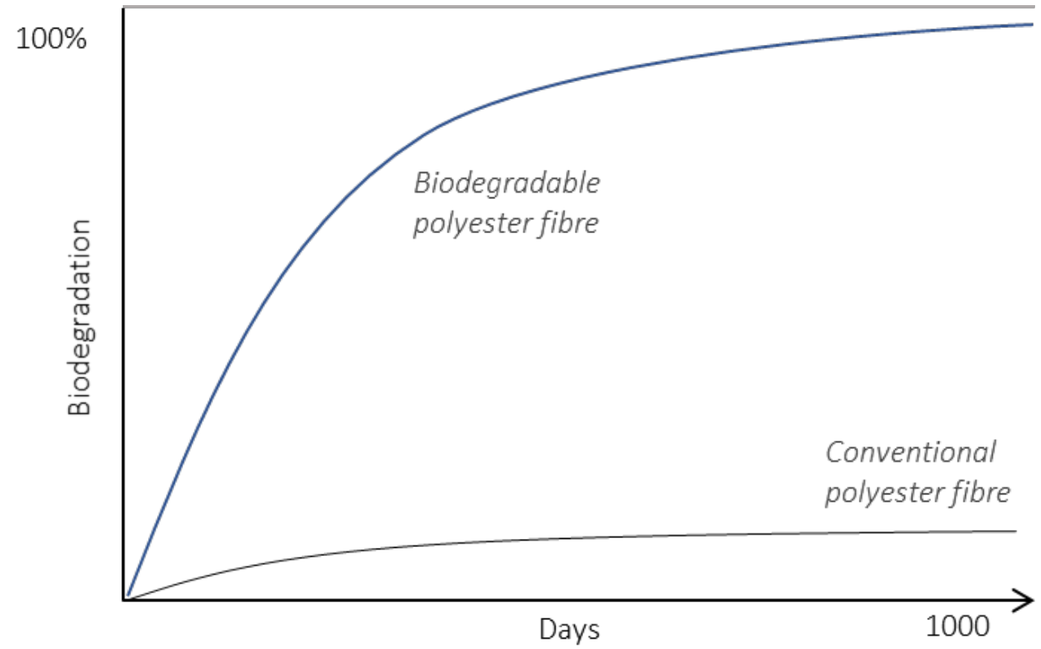
Flake silo

Shredded PET flakes

Step 8:

Filament spinning

Biodegradable polyester



Polyester has a negative impact on the environment. From its production to its disposal, this fabric has unfortunate environmental impacts at every stage of its use cycle, even recycled one. Microfibers are released into wastewater during every wash and are difficult to filter out. Even with good wastewater management, microfibers may end up in the environment. Either way, as the life cycle is not under control of the brand, biodegradable synthetic fibres are the most efficient way to prevent microfiber pollution right at the product design and development stage.

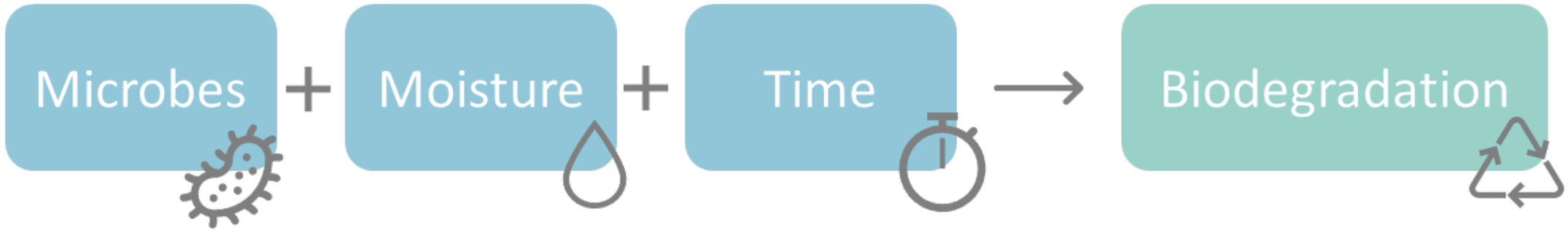
According to a 2014 study, washing polyester fabrics by hand or in washing machines releases tiny synthetic microfibers into the water supply. Biodegradable yarn/fibres are also used for disposable items such as wipes. The environmentally harmful impacts of polyester continue as this fabric makes its way into the consumer market.

Biodegradability is the ability of a material or substance to break down physically or chemically by naturally occurring microorganisms, resulting in the production of basic natural elements including carbon dioxide, methane, water, minerals and new microbial cellular constituents (biomass). These polymers are found both naturally and synthetically made, and largely consist of ester, amide, and ether functional groups. Their properties and breakdown mechanism are determined by their exact structure.

Biodegradable polymers are a special class of polymers that break down after their intended purpose by bacterial decomposition process to result in natural by-products such as gases, (CO_2, N_2), water, biomass and inorganic salts . Natural polyesters and a few synthetic ones are biodegradable, but most synthetic polyesters are not. Biodegradable polyester fibres and yarns reduce the persistence of synthetic microfiber pollution in the ocean and reduce pressure on landfills. Reduces microfiber pollution and landfill waste.

Biodegradable polyester fibres break down by 86% in ca. 600 days in sea water compared to 3% in the same time period for untreated fibres. In soil, the biodegradation rate is even higher, breaking down 85% in ca. 450 days, whereas untreated fibres break down 0%.

The companies using bio-degradable polyesters demonstrate their sense of responsibility for people and the environment as well as their commitment in the field of circular economy.



All our filament yarns and staple fibers will be available as biodegradeble PET recycling this year

Process:

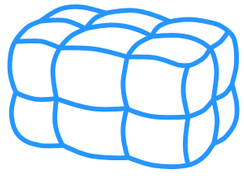
- organic macromolecules are added to the (recycled) polyester during polymerization process
- Biophilic polymer formulation
- Mainly organic macromolecules, similar structure & properties to the base synthetic fibre
- Added to PET, rPET, PA, or PP during melt extrusion
- Permanently and uniformly embedded in matrix of the plastic
- countless biodegradable spots are created attracting microorganism later on
- Biodegradation is not activated during garment use
- Biodegrades at similar rates as wool

Benefits:

- Minimise microfiber pollution in soil and sea water
- Mechanical and durability characteristics maintained
- Suitable for existing dyeing & finishing processes
- Works with virgin and recycled materials
- Compatible with mechanical & chemical recycling
- Fits into existing supply chain
- Certifications available

Your partner for large scale, compliant PET recycling

up to **800t/day**
Production capacity
for filament yarn



up to **300t/day**
Production capacity
for staple fibre

Compliant.
Brington Group's recycling facilities are fully compliant and certified with internationally recognised standards. Social compliance is adhered to at all collection centres and factories. All processes are environmentally compliant and use clean and efficient production methods.

Traceable.
From PET bottle collection to final filament and staple fibre, all relevant stages are transparent and all material input is fully traceable. Information about the supply chain, production and KPIs can be provided

Certified.
The recyled PET filament and fibre is certified by multiple recycling standards, including the Global Recycling Standards (GRS) and PFI Recycled Material Certification (rmc) which verify the amount of recycled material as well as socially and environmentally compliant processes and traceability.Optionally, Recycled Material Certification Blue verifies the content of recycled PET bottles from coastal regions in Brington's staple fibre and filament.

Capable.
Brington's compliant, sustainable and traceable recycled PET filament and yarn is available in significant quantities and suitable for use in large-scale production. Production capacity for staple fibres is currently 300 tons per day. Production capacities are expected to be able to reach 530 tons per day by 2022. The daily production capacity for filament yarn is 800 tons per day.

BSCI An initiative of the Foreign Trade Association (FTA)
Business Social Compliance Initiative
*for all yarn processing manufacturing facilities

OEKO-TEX®
CONFIDENCE IN TEXTILES
STANDARD 100
SH005 129685 TESTEX

Global Recycled Standard

rmc PFI

MATERIAL PFI CERTIFIED RECYCLED

ocean cycle

Certifications

PFI's project with Lidl started in 2019 and a first RMC certified shoe collection was successfully certified and launched in July 2020 creating a lasting impact. Near to 12,000,000 PET bottles were used for the Ocean Bound Plastic shoes – 3,960,000 of which came from ocean-bound areas.

Recycled Material Certification by PFI

New certification aims to bring transparency into plastic recycling

"Each year, at least 8 million tonnes of plastics leak into the ocean – which is equivalent to dumping the contents of one garbage truck into the ocean every minute"

The above quote from global multi-stakeholder platform the New Plastics Economy initiated by the Ellen Macarthur Foundation calls attention to the pressing need for change in the way we utilise plastic in the current economy.

How can the fashion industry contribute towards a solution?
Introducing PFI's independent third-party certification for recycled content: The PFI Recycled Material Certification

With the newly developed Recycled Material Certification (RMC) and Recycled Material Certification Blue (RMC Blue), third-party quality assurance body PFI (www.pfi.hk) raises awareness for the urgent need for more recycling, and simultaneously presents viable alternative materials for products.

The main objectives of the RMC and RMC Blue are to:

- Trace recycled material from source to finished product and ensure accuracy of material content in a final product
- Foster social and environmentally friendly production conditions
- Provide customers with information about the products they buy.

Track and trace recycled content with the PFI Recycled Material Certification

The RMC is a voluntary standard, aimed at brands and manufacturers of recycled products and ensure accuracy of material content in a final product.
The standard sets requirements for verifying traceability from the source of recycled material to the end product through a chain of custody process and supports socially and environmentally friendly production.
The RMC Blue is a unique certification seeking to prevent plastic from entering the ocean and to increase the amount of recycled material in global manufacturing processes.

A finished product labelled with the RMC or RMC Blue logo, carries the following assurances:

- It ensures that a majority of the product, in volume or area, is made from recycled material
- It provides end-to-end traceability from post-consumer plastic waste, such as PET bottles, up to the finished product
- It verifies that facilities involved in the manufacturing of certified products comply with social and environmental standards
- Additionally, RMC blue guarantees that the recycled material contains 25% of plastic waste from coastal areas

Materials

Water based PU leather

Water-borne polyurethane was first developed in 1943 by P.Schlack in Germany, and it continued to be developed and refined for decades. In 2016 the Brington Group came up with their first waterborne PU production of leather (Aqualine). Instead of using DMF, which is a toxic solvent for chemical reactions, the latest waterborne PU technology was used to make Aqualine. A waterborne PU are environment-friendly polymers which are non-toxic and non-flammable. They do not pollute the air or produce wastewater. In general, the polyurethane is hydrophobic in nature and insoluble in water.

Production Process

The production process of water-based PU leather is non-toxic, environment friendly and pollution free. No harmful chemicals like DMF or VOC are used. This type of leather is composed of polyurethane resin, which uses water to replace organic solvents. On the other hand, traditional solvent-based PU leather contains organic solvents like DOP and DMF amongst other harmful chemicals. The drainage and sewage of the production of such leather further causes serious pollution issues.

DMF free water-based PU leather fabrics also can be named DMF free waterborne PU (polyurethane) synthetic (faux) leather or just DMF free PU leather and this material is an improved eco-friendly & healthy PU leather with top properties.

Advantages of water-based PU leather

There are various advantages of water-based PU leather. It does not have any peculiar smells. It is non-toxic and is environmentally friendly. All the environmental standard of the industry like REACH and ZDHC are met during the production process. Moreover, it can sustain high temperature resistance. It is also water and scratch resistant along with possessing excellent physical properties like hydrolysis resistance, solvent resistance, abrasion resistance etc. It has no VOC and does not contain any harmful chemicals like DMFu, DMFa, PAHs, APEO, o-benzenes, azo or PBA. Moreover, a diverse range of fashion designs can be achieved. It is quite soft and there are new designs every season. There is less energy consumption and no wastewater or exhaust fumes during the production process.

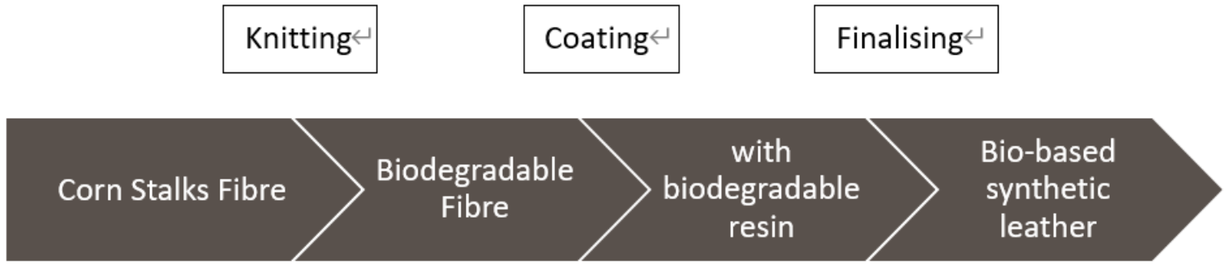
Water-based PU Leather – sustainable & safe

- Meets all common industry standards, such as REACH and ZDHC
- No DMF in PU synthetic products and production process
- Less water consumption and wastewater.
- No harm to factoryworkers.
- bluesign® approved
- Allergy UK approved
- Accepted for OEKO-TEX Standard100
- Excellent physical properties compared to solvent-based synthetic leather
- Versatility in design

Bio-based PU Leather

Bio-based synthetic leather is made from corn stalks, which are normally a by-product that typically gets burned after reaping. As it is made from waste, its production does not require any additional agricultural input. Furthermore, it provides an additional income stream for the communities involved in corn farming. Additionally, it is coated with a bio-based resin, which makes it biodegradable.

Bio-based synthetic leather is eco-friendly and sustainable. It can be made into garments, handbags, footwear, etc. After the fashion goods are disposed off, they can be biodegraded and contribute to the growth of new corn seed.



Advantages of bio-based synthetic leather for fashion goods:

- Made from renewable and sustainable source
- Biodegradable
- It is scratch resistant, durable and tougher than animal hide.
- It is smooth, versatile and has a nice feel just like traditional leather.
- It is also similar to leather in terms of touch and elasticity, which can be used for items in any way traditional leather can.
- Able to produce almost all surface pattern like PU, and leather higher cutting value compares with genuine leather.
- Saves cost
- Fashionable and sustainable
- Caters to the vegan market as no animals are killed or harmed for its production.

Locally produced EVA sole

An EVA sole is a plastic sole that can be lighter and more flexible than rubber. EVA stands for Ethylene-Vinyl Acetate. That is an elastomeric polymer that produces materials which are “rubber-like” in softness and flexibility. It is a plastic made by combining ethylene and vinyl acetate to create rubber like properties which can be used for shoe soles.

Benefits of Brington Eva Sole:

1. Local, integrated production
2. Traceable material input and compliant production
3. Easily recyclable
4. EVA tends to be softer than rubber, which makes it more flexible.
5. In comparison to rubber it is much lighter.
6. It keeps one warm. EVA does not conduct as much heat, which means that feet stay warmer for longer.
7. Shock Absorption. EVA soles absorb more of the step impact which makes the shoe comfortable for running and/or walking.
8. EVA soles are durable, which means they can last longer than other soles.

Brington produces EVA sole in their won shoe factory in Fujian, China where they have state-of-the-art technology with 9 sets of Injection Eva machines. Moreover, the facility houses 11 sets of footbed foaming machines with a monthly capacity of 1 million units of footbeds. The factory in certified according to ISO9001, SA8000, BSCI and Sedex. All material input is traceable.

rPET filament yarn

REYBOTEX

Recycled Polyester
made from PET bottles

Optonal:
Biodegradable
Adjustments to the production process make polyester biodegradable, reducing microfibre pollution

Product details and background stories from supply chain and workers

Fully traceable and transparent material input

Production in **socially compliant factory**

Environmentally compliant
product and production

Sustainability Performance Indicators Monitoring

Water and carbon footprint available.
Exact value determined per individual project/product

Sustainability. Innovation. Communication.

PARTNERSHIP FOR COMPLIANCE

Sustainable PU Leather

Water-based PU leather -
DMF free, consumes less water and environmentally friendly

or

Water-based recycled PU leather -
DMF free, consumes less water and environmentally friendly

or

Bio-based PU leather
made from corn stalks for a biodegradable and sustainable product

Product details and background stories from supply chain and workers

Fully traceable and transparent material input

Sustainability Performance Indicators Monitoring

Water and carbon footprint available.
Exact value determined per individual project/product

Production in **socially compliant factory**

Environmentally compliant
product and production

Sustainability. Innovation. Communication.

PARTNERSHIP FOR COMPLIANCE

100% recycled polyester upper

Product details and background stories from supply chain and workers

Environmentally compliant product and production

Production in **socially compliant factory**

Integrated, transparent supply chain

Fully traceable and transparent material input

REYBOTEX

Recycled Polyester made from PET bottles

Sustainability Performance Indicators Monitoring

Water and carbon footprint available. Exact value determined per individual project/product

Designed for **circularity**

Sustainability. Innovation. Communication.

PARTNERSHIP FOR COMPLIANCE

100% biodegradable recycled polyester upper

Sustainability Performance Indicators Monitoring

Water and carbon footprint available. Exact value determined per individual project/product

REYBOTEX

Recycled Polyester
made from PET bottles

Biodegradable
Adjustments to the production process make polyester biodegradable, reducing microfibre pollution

Designed for **circularity**

Product details and background stories from supply chain and workers

Integrated, transparent supply chain

Fully traceable and transparent material input

Environmentally compliant product and production

Production in **socially compliant factory**

Sustainability. Innovation. Communication.

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PU Leather + rPES upper

Water-based PU leather processing -
DMF free, consumes less water and environmentally friendly

or

Bio-based PU leather
made from corn stalks for a biodegradable and sustainable product

Integrated, transparent supply chain

Fully traceable and transparent material input

REYBOTEX

Recycled Polyester
made from PET bottles

Sustainability Performance Indicators Monitoring

Water and carbon footprint available.
Exact value determined per individual project/product

Product details and background stories from supply chain and workers

Production in **socially compliant factory**

Environmentally compliant
product and production

Sustainability. Innovation. Communication.

PARTNERSHIP FOR COMPLIANCE

EVA sole

EVA Sole – light, flexible, shock absorbing, durable and recyclable

Environmentally compliant product and production

Fully traceable and transparent material input

Integrated, transparent supply chain

Product details and background stories from supply chain and workers

Designed for **circularity**

Production in **socially compliant factory**

Sustainability Performance Indicators Monitoring

Water and carbon footprint available. Exact value determined per individual project/product

Sustainability. Innovation. Communication.

PARTNERSHIP FOR COMPLIANCE

PARTNERSHIP
FOR COMPLIANCE