



**CORE
MATERIALS**

*Towards a Sustainable,
Lighter and Greener Future.*

SUSTAINABILITY REPORT 2021



[#PlantYourBalsaTree]



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“Sustainability mindset in everything we do.”

Eric Gauthier



Eric Gauthier
CEO 3A Composites Core Materials

TOWARDS A SUSTAINABLE, LIGHTER AND GREENER FUTURE

3A Composites Core Materials (3ACM) is a leading global manufacturer with the sustainability concept being at the heart of our business. Our aspiration is to make the future greener thanks to our lightweight products and leadership.

3ACM is the first company in the world producing the fully carbon neutral core material out of balsa wood, **BALTEK® SBC**, and the **AIREX®** rigid foams with the lowest possible resin uptake.

Financial year 2021 confirmed **3ACM’s** position as the partner of choice in regards to sustainability and reliable work relationships during any financial cycle, especially during the turbulent pandemic time. In FY22 we will remain focused on implementation of our strategy and delivering for our customers and for the environment.

We are confident that **3ACM** R&D, forestry management practices, the unique approach towards global collaboration and best-practice sharing will deliver the necessary innovations and improvements and continue to reflect values of our customers in their end products.

Colleagues from all sites and business units around the globe work hard to make the difference faster and further. I am grateful to everyone at **3ACM** who contributed to the success that we are sharing with you in this report.

Thank you for your interest in our sustainability strategy as this represents a key part of our business. I am confident that our future ahead is even brighter and greener.

Eric Gauthier

Chief Executive Officer
3A Composites Core Materials

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COMPANY PORTRAIT

3ACM is a global organizational unit within the 3A Composites Group, part of Schweiter Technologies (SIX Swiss Exchange: SWTQ).

We are pioneers and a global leader in sandwich composite technology with more than 80 years of experience. Our portfolio consists of high-performing, robust, reliable, yet lightweight and sustainable core materials with our main focus on PET foam and balsa wood.

Our operations located in Europe (Switzerland, Poland), the USA (NC and KY), China (Shanghai and Changzhou), Ecuador and Papua New Guinea that make our **AIREX®** foams, **BALTEK®** balsa wood composite materials as well as **FOREX® / SMART-X®** display solutions which are globally manufactured and locally available.

Since its foundation over 65 years ago, our Swiss site has been the divisional head office and produced **AIREX®** special closed-

cell foams for sandwich technology and gymnastics, as well as **FOREX® / SMART-X®** lightweight sheets for visual communication.

We have two manufacturing locations in the US: in High Point, NC, home to our North America head office and core materials conversion, and in Glasgow, KY, where our **AIREX®** PET foam products are manufactured.

We also have two sites in China: one in Shanghai that serves as the regional head office in the Asia-Pacific region & core materials conversion, and one in Changzhou that focuses on the production of **AIREX®** PET foams. Changzhou is the latest group investment in China that helps in the implementation of companies' strategies in the APAC region.

In 2022, we will strengthen further our PET position by starting a new plant in Nowogard (Poland). This new **AIREX®** production ▶

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location will allow us to create synergies with JMB Wind Energy (a leading company in core materials kit design and production) and further improve our European supply chain footprint.

Our **BALTEK**® balsa wood cores are manufactured in Ecuador and Papua New Guinea, facilities with a fully integrated model from FSC®-certified owned plantations with world-class manufacturing standards, being the only balsa wood supplier that can deliver core kits directly from source.



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WHAT WE DO MATTERS: SANDWICH CONSTRUCTION AND MARKETS AT A GLANCE

A sandwich construction consists of two skins of high stiffness separated by a core material and together these multiple layers bring greatly improved properties, significantly reduce weight and thus energy consumption and considerably facilitate handling.

Nature uses this concept extensively and an example is shown in the structure of a bird's wing bone (right).

3ACM develops strong and solid, yet light-weight core materials, because the right balance between the two results in more durable, sustainable, and energy-efficient end-product sandwich solutions for our customers.



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Core Materials Markets
The number of applications of sandwich technology and our core materials is endless. Here are some key markets that we have served for decades with major developed application and success cases:



Aerospace
Modern applications for all sorts of composites for commercial and general aviation, aerospace and defense industries. Wings, flaps, radomes, fuselage, transport containers, floor covers and interior parts.



Automotive

Applications for passenger cars, trucks, buses, recreational and special purpose vehicles. Roofs, A&B and door cladding, front ends, parcel shelves, seat back covers, trunk floors and cladding, floor parts and panels, various interior parts and superstructures.



Building & Construction

Applications for residential buildings, industrial and commercial buildings, pedestrian and road bridges, interior design and architecture, bridge construction. Roofs, doors and gates, window frames, applications for interior architecture.



Marine

Solutions for all marine components. Hulls, sides and decks, superstructures, bulkheads and stringers, transoms, covers, hatches, floors and interiors.



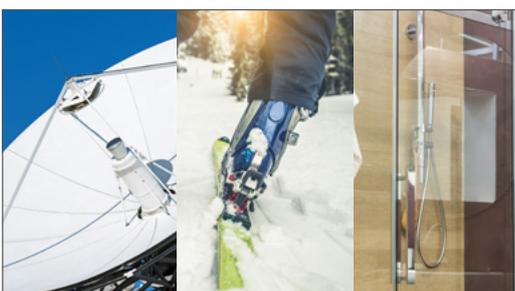
Rail

Lightweight constructions for all types of rail vehicles. Roofs, decks, toilet modules, compartment walls, doors, covers, floors, front ends and supporting cabins.



Renewable energy

Solutions for wind industry turbine blades and nacelles. Edge close-outs, shells, spinners, covers, rotor blades, shear webs and nacelles.



Industry

Numerous solutions for other industries, such as sports and leisure, science and medicine, radomes, and industrial components. Radar covers, ski cores, shower tubs and many others.

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CORE MATERIALS PRODUCTS

3ACM portfolio consists of **AIREX®** specialty foams and **BALTEK®** balsa wood products.

AIREX® foams based on PET are extruded in industrialized continuous processes, either in direct extrusion (**AIREX® T10** premium surface foam with high specific properties) or welded (structural and sustainable foam **AIREX® T92**, as well as economic fire retardant **AIREX® T90**) sheet configurations. Radar transparent and high temperature performance **AIREX® R82** foam is produced in a press-batch process.

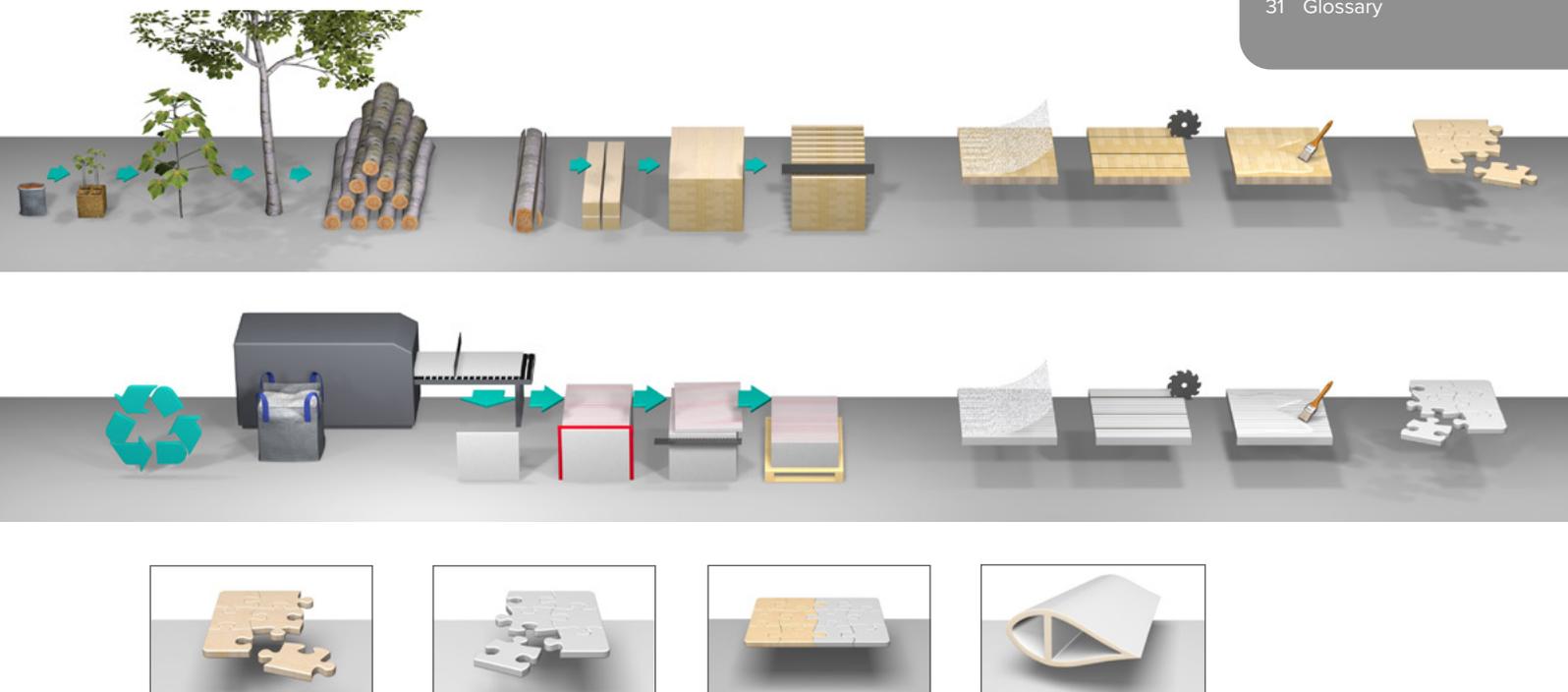
BALTEK® SBC are balsa wood core materials that are produced in a fully integrated manner, starting with our own seeds in nurseries, carefully selected through a genetic

improvement program, growing on our FSC®-certified plantations and harvested after 4 - 5 years. The trees are cut down as green lumber and kiln-dried in a carefully monitored process to ensure prime quality wood for infusion processes without the occurrence of microorganism attacks. Density sorting allows the creation of a homogeneous product from an inhomogeneous material.

AIREX® and **BALTEK®** cores provide a best-in-class weight to mechanical properties ratios and are marketed to sandwich producers for aerospace, automotive, marine, rail, renewable energy, building and construction and other industrial applications.

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Innovative approach from raw material towards kit@source for PET and balsa



SUSTAINABILITY APPROACH AT 3A COMPOSITES CORE MATERIALS

Sustainability is at the heart of everything we do. Our commitment to sustainability has contributed to our strong performance across the business and is fundamental to our success. We differentiate four sustainability pillars (Social, Industrial, Environmental, Corporate Governance & Financial) that are represented through our corporate social responsibility concept, environment, health & safety standards, sustainable forestry management, strong corporate governance, operational excellence practices, continuous R&D and

innovations. All these are recognized contributions towards a greener, lighter and more sustainable future.

Our sustainability management approach is aligned with several of the United Nations Sustainable Development Goals (SDGs) and their associated targets. These goals came into effect on January 1st, 2016 as part of the United Nations 2030 Agenda for Sustainable Development. Our contributions to the goals that are most important to our sustainability agenda are described below.

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Sustainability Goal and Objective		Our Commitment
SDG 2 Zero Hunger END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTAINABLE AGRICULTURE		3ACM recognizes its responsibility as one of the major employers in PNG and Ecuador and maintains a vital focus on supporting local communities and ensuring access to transport, uniform and health facilities.
SDG 3 Good Health and Well-Being ENSURE HEALTHY LIVES AND PROMOTE WELL-BEING FOR ALL AT ALL AGES		Health and Safety standards are one of our core values. The company constantly monitors and improves co-workers' awareness of the importance to stay safe and responsible, both at work and at home. In a year marked by the COVID-19 pandemic, we take a great pride in knowing that our efforts contribute directly to the reduction of global health risks and to the elimination of the pandemic situation worldwide.
SDG 5 Gender Equity ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS		The inclusion of women in all areas of processing, administration, and management levels, giving equal opportunities to all genders within the organization.
SDG 8 Decent Work and Economic Growth PROMOTE SUSTAINED, INCLUSIVE AND SUSTAINABLE ECONOMIC GROWTH, FULL AND PRODUCTIVE EMPLOYMENT AND DECENT WORK FOR ALL		3ACM is one of the leading companies in providing quality employment, training, and development to our employees and their families through our people development and social programs.
SDG 9 Industry, Innovation and Infrastructure BUILD RESILIENT INFRASTRUCTURE, PROMOTE INCLUSIVE AND SUSTAINABLE INDUSTRIALIZATION AND FOSTER INNOVATION		Being a pioneer in PET and Balsa solutions, 3ACM constantly strives for the next level of innovation and optimization to benefit our customers and the environment. We drive innovation and change, focusing on waste reduction and efficiency in our forestry and industrial processes. Our products are constantly being improved, driven by the Hybrid Core Concept: the best combination of sustainability, properties and price. We pride ourselves in offering our partners best-in-class Total Cost of Ownership.
SDG 12 Responsible Consumption and Production ENSURE SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS		All our forestry production follows responsible forestry management guidelines and regulations, protecting resources from over-exploitation or harming the social actors, fauna or flora in our areas of influence. In addition, we increase the resource efficiency and promote sustainable lifestyles across all our industrial and forestry sites. We go the extra mile by not only abiding by local and international regulations but also constantly certifying our global operations across the industry.
SDG 13 Climate Action THE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS		3ACM takes a proactive approach towards consistently reducing industrial emissions, increasing the biomass of our plantations that capture more and more carbon from the atmosphere. Our forestry operation constitutes a carbon sink, offsetting global carbon emissions in industrial facilities.
SDG 15 Life on Land PROTECT, RESTORE AND PROMOTE SUSTAINABLE USE OF TERRESTRIAL ECOSYSTEMS, SUSTAINABLY MANAGE FORESTS, COMBAT DESERTIFICATION, AND HALT AND REVERSE LAND DEGRADATION AND HALT BIODIVERSITY LOSS		Our annual High Conservation Value (HCV) monitoring facilities in Ecuador and Papua New Guinea ensure that all the wildlife that coexists with our forest plantations is preserved and maintained over time.

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Q&A WITH ERIC GAUTHIER CEO 3A COMPOSITES CORE MATERIALS

How important is a sustainability concept for 3ACM?

In short, sustainability is in everything we do, and it is very much linked to 3ACM's day-to-day business. Forestry itself is sustainable as it is managing a renewable resource, such as wood. Moreover, our FSC®-certificate for forestry management ensures that we protect water sources, secure sustainable income and develop relationships with the local communities and protect endangered species and fragile ecosystems. On the foam side, we developed an active pipeline of projects that are centered on continuous reduction of emissions and on implementation of production based on renewable energy sources. In addition to that, our R&D and engineering departments are continuously working on technology improvement that is in collabo-

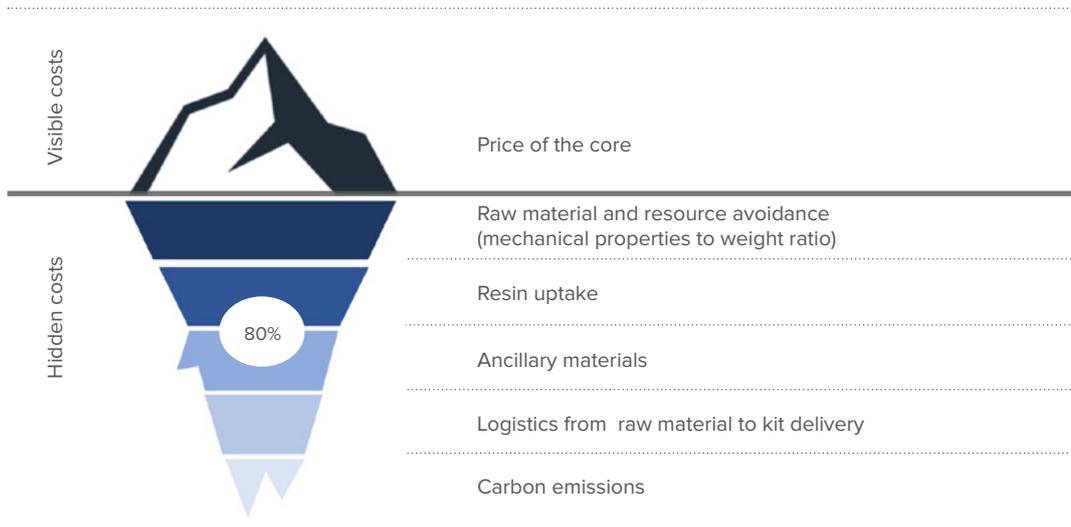
ration with the innovative forestry management, waste optimization and recyclability practices boosting further our sustainability approach in all our production processes.

How 3ACM is different in its sustainability practices from other market players?

3ACM is the global market leader with an innovative and integrated business model that is based on both PET and Balsa cores. Most of our competitors do not have their own plantations in significant quantities. Therefore, competition relies on external forestry sources and thus cannot fully control either quality or availability as such. Their supply chain is more like a local spot market, with extreme variation in quantities and prices based on short-term demand and supply. Furthermore, there are many ►

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Sustainability plays a large part of our Total Cost of Ownership solution (TCO)



trading companies that do not even touch the wood at all, but merely distribute material from their network. Obviously, such a model does not include relevant support in case of quality concerns, let alone technical assistance or innovation driven by R&D. Forestry is a long term commitment and partnership with stakeholders and our control of the entire supply chain ensures availability and quality like no other can provide.

As pioneers and a global leader in sandwich composites with more than 80 years of experience, we have always been focused on optimum combination of properties with the least amount of resources and efficient sustainable production practices for both PET and Balsa.

3ACM’s rPET content is lower than those of some competitors. Why is this so and why is it a correct approach?

First of all, a rigid foam based on rPET only is NOT the most sustainable. If this were so, our company would not be making so many additional efforts and would just produce rPET only based foam and do nothing else. Instead, **3ACM** makes a step further and orients itself towards making a **final end-customer product** more sustainable, and not just a core only. This includes the lowest possible resin uptake, avoidance of auxiliary materials or less material needed

to reach the targeted properties, and thus less weight of a sandwich.

Due to our lean manufacturing practices, we do guarantee the best combination of properties with the least amount of resources, avoiding production steps that do not add value for customers, reducing lead times, inventory, costs and waste.

It is clear that 3ACM delivers Total Cost of Ownership for PET. How would you describe TCO for Balsa and what makes 3ACM different from the competition in this regards?

Balsa being a natural product is often perceived as “timeless” and having little or no room for improvement. Our green core innovation looks at building on the strengths of balsa as a core material while reducing indirect material cost or cost associated with the use of our products for the end user application. We have developed clever solutions to ensure a virtuous circle of sustainability, performance, and resource avoidance to manufacture composite parts.

ContourKore (CK) is the mark for the sheet finishing option, enabling our rigid sheets to become flexible with knife cuts. Typically, these cuts are spaced in a 1-inch by 2-inch pattern. Adaptive CK is a customized offering, that allows the customer to pick ▶

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TCO concept for PET...

AIREX® SealX lowest resin uptake



✓ **AIREX® T92 SX:** revolutionary **flexibility now even without a scrim!** Easy to handle for anyone

NEW



...and balsa

3ACM answer for resin consumption/weight/cost reduction

NEW

✓ **BALTEK® SealX**
with lowest resin uptake



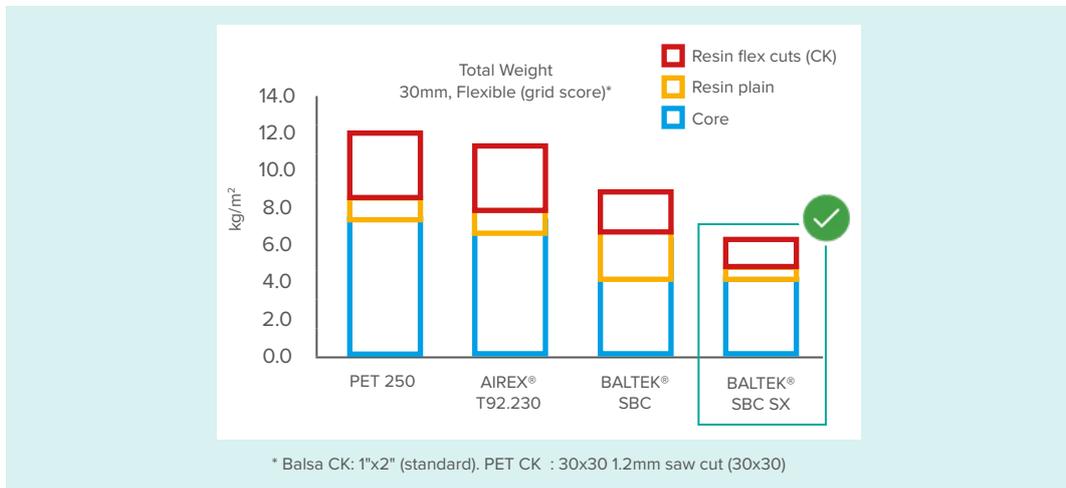
✓ Tailored flexibility and further saving potential with **AdaptiveCK**



✓ **BALTEK® SBC ContourKore ZERO:**
ZERO glass fibers
ZERO block fall-off
ZERO kitting tool wear
Scrim reduced to minimum



Lowest resin uptake with Balsa core



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the spacing pattern that is flexible enough to follow their mould curvature, but has as few cuts as needed. Adaptive CK reduces cuts and avoids unnecessary resin uptake in the slits during the customer manufacturing process, resulting in not only lower weight and resin cost savings, but also in a more sustainable solution as it avoids raw material consumption.

Similarly, our **BALTEK® SealX** solution is a pre-applied coating on the balsa sheet surface, that prevents customer resin penetrating the balsa vessels (water channels in the wood) – again, weight and cost savings as above.

Further, flexible CK sheets normally are backed with glass fiber scrim to prevent cut wood blocks falling apart. **ContourKore Zero** offers the same, but **without** any (ZERO) glass fibers and even better handling performance. Again a step towards more sustainability by well-directed raw material avoidance.

Our **BALTEK®** portfolio is therefore drifting away from commodity and represents a fully integrated solution based on balsa wood. We do not sell wood, we sell a full array of material and mechanical properties. ▶

Do you foresee a lack of balsa in the next years?

As we are fully integrated in forestry and do master the full process from seed to finished products, we may plan and control demand and supply to the full extent. Therefore, customers that need a reliable supply over a long-term period are invited to align their plan and needs with us so we may reflect this in the forestry planning accordingly. For instance after alignment with our key customers, we planted 50% more balsa trees in Ecuador in 2021 making supply ensured and avoiding material shortages or price instability.

Even in recent years of high demand, the customers that planned with us on a long-term basis have never experienced a lack of supply.

Wood is a renewable resource, easily expandable. Also, for a forestry operation, the cycle for balsa is incredibly short, taking 4 - 5 years in total. Forestry operations supplying plywood, cellulose and pulp for paper take 20 - 25 years to reach maturity. Nevertheless, these products have not been scarce as global demand has grown.

How does 3ACM “live” dual sourcing?

Our **BALTEK**® products are specified in the same way, we don’t differentiate the source of origin either in product performance or in quality or other services. Nevertheless, we have full traceability of our processes, which means we are always in a position to correlate our products back to their origin and preceding process steps.

Depending on customer requirements, we may (and do) deliver to the same place from both sources to create a supply redundancy if this is important, or if short-term demand or other external constraints change suddenly. Geographically, Ecuador and Papua New Guinea are both close to the Equator, being optimal for balsa, but being at opposite ends of the world reinforces our ability to supply globally without interruption.

The same multi-sourcing approach applies also for PET. We have extruders on each continent and make sure that customers are supplied in a predictable and agreed manner.

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From balsa seed to the final core material

SOCIAL SUSTAINABILITY PILLAR

The social pillar is reflected by our care of the local communities we work with and alongside, by the company’s health and safety standards, by the attention we show to the well-being and equality of our employees. 3ACM is an inspiring and socially responsible employer that takes care of current and future generations through health, safety and social programs.



Ramón del Pino
General Manager Americas

HEALTH & SAFETY PROGRAM

All employees at 3ACM as well as contractors and visitors regularly receive H&S training, and those who deal regularly with production receive compulsory Personal Protective Equipment (PPE) training sessions, as well as training on how to detect, prevent and mitigate occupational hazards.

Raising awareness of a culture of safety and the improvement of work safety by minimizing risks and creating safer working conditions represent core values to us. We have developed several policies to raise awareness at all our sites of the company’s mission, and objectives to minimize the number of accidents in all our global operations. We collect H&S data on a very regular basis and report action plans for further developments. Our constant attention to H&S standards is highly appreciated by our employees and partners.

A healthy mindset of our employees is a constant part of the company’s focus. The company is always there for its co-workers, especially during this challenging pandemic time.

“Genuine commitments with our stakeholders.”

Ramón del Pino

3ACM participates in the vaccination and immunization program and is proud to report that as a result of mutual careful attention towards H&S, the number of accidents has been reducing gradually and three of our sites had zero accidents in 2021. Our target is to report a zero-accident level on a global level by 2023.

SUPPORTING SPORT ACTIVITIES OF EMPLOYEES

3ACM recognizes the great importance of the physical well-being of our co-workers and promotes sport activities through various support programs, including tennis/ soccer courses in Ecuador, badminton, ping-pong & darts courts in PNG, organized ▶

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Badminton court

Ping-pong tables

Darts playing range

regular running and yoga classes in Switzerland, company membership solutions for gyms in Switzerland and China.

DIVERSITY, EQUALITY AND INCLUSION

In Switzerland, **3ACM** supports employees by providing day care solutions for the children, enabling parents to return to their sustainable jobs. Moreover, the company allows employees to adjust their workloads and reduce them due to family-specific situations. A part of the consistent approach towards developing young professionals is our apprenticeship positions, where students and graduates can gain their first industrial experience and gain an insight into multiple company departments.

In PNG and Ecuador, **3ACM** engages several contractors for harvesting and transport and thus encourages local small and medium business enterprises. The company’s decision to increasingly hire local small growers in its operations has had a positive economic impact, improved community relations, as well as contributed to social equality.

We ensure that employees of all genders receive equal opportunities within the organization and are proud to report that in PNG, where **3ACM** is one of the major employers, 37% of office employees and 20% of factory co-workers are female. In China,

9% of all industrial co-workers and 43% of office co-workers are women. In our office in Sins, Switzerland, 30% of the workforce is female, while at the US & Ecuador sites, female colleagues make up 32% and 23% of the workforce respectively.

SOCIAL PROGRAMS

PRE-SCHOOL EDUCATION IN PNG

Pre-school education is not formalized in Papua New Guinea and left to private initiatives, although that might change in the future. We run two community centers for our employees and families and two play-schools for the employees’ children aged three to six years.

The schools are free of charge and the initiative is managed by four teachers, who are trained and certified for early child development. The playschool curriculum follows an early childhood learning approach, and the teaching method follows the concept of Light Education Ministries Phonics.

We have an early learning class for children aged three to six years and reading readiness classes for children aged five to six years. All learning is in English. The school runs from February through November, and graduation is in December.

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Graduation day



Graduation celebration

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“I do not have to spend a toea on hospital fees as I have the service provided to me here where I work. I am so grateful!”

Smith Kauba, Drymill, PNG

“Our nurse is the best! She gives the best treatment and cares for us not only when we go to see her but outside the clinic as well.”

Melissa Iss, Payroll, PNG

ADULT LITERACY PROGRAM IN PNG

An adult literacy program started in 2019 as a pilot project and we were the first business to participate in such an initiative.

The program comprises 12 weeks with two two-hour classes a week. The participants learn reading, writing, math, and practical knowledge (filling out a deposit slip, using an ATM, etc.). The course is normally available for 20 people from each of our compounds. The teaching concept is quite intense, giving a chance to young students to attend their lessons in the morning while their mothers and fathers attend later during the day and evening.

Due to Covid-19 related restrictions, the adult literacy program was put on hold in 2020 and 2021. For the year 2022, we have already received more than 50 applications from employees and hope that we get permission to continue the adult literacy program for adults.

WATER, FOOD AND HOUSING PROGRAMS IN PAPUA NEW GUINEA

Securing water, food and housing for the employees and improving living standards of the contractors and partners is a constant focus of **3ACM**. We regularly collect feedback in this regard from our employees and report on the action plan and further improvements.

3ACM PNG CLINIC

At the very end of 2019, **3ACM** PNG appointed a dedicated nurse to set up a clinic outside the administration office so that all the employees would be able to get an easy access to the first aid as soon as possible. During 2020, the clinic was developed into a much more modern facility and the nurse was able to check and treat on average 50-60 employees per week.

In 2021, the clinic received some additional medical items and a much wider range of medications. Moreover, it was supplied with new equipment, with which the health of employees can be monitored without needing to go to the hospital, especially when some local hospitals are not as well-equipped as **3ACM**'s site clinic.



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First add training and consultation of the harvesting team



New kitchen at PNG

HEALTH TRAINING & COVID-19 PREVENTIVE MEASURES

Major health teaching sessions were carried out with the employees, in order to educate them how to react in situations when some most common infections and diseases occur, as well as what to do in order to prevent the spread of certain diseases, to alleviate pain, etc. The company also regularly organizes health checks of children of employees and conducts health awareness sessions in the compounds.

During the pandemic, our company was able to continue its operation as it complied fully with all protocols and government requirements. Our employees were regularly scanned and checked before entering the company premises, and those who were sick were advised to stay at home.

Face masks and shields have been provided on a regular basis. Moreover, additional hand washing areas were built near the gates of all the buildings, compounds, and other premises.

NEW KITCHEN FOR EMPLOYEES AND STAFF IN PNG

The well-equipped facility was opened on 18th May 2021. The cooks were introduced to a whole new way of preparing food, as

previously they would use open fires for cooking, and now have two three-burner stoves, and heat can be controlled conveniently.

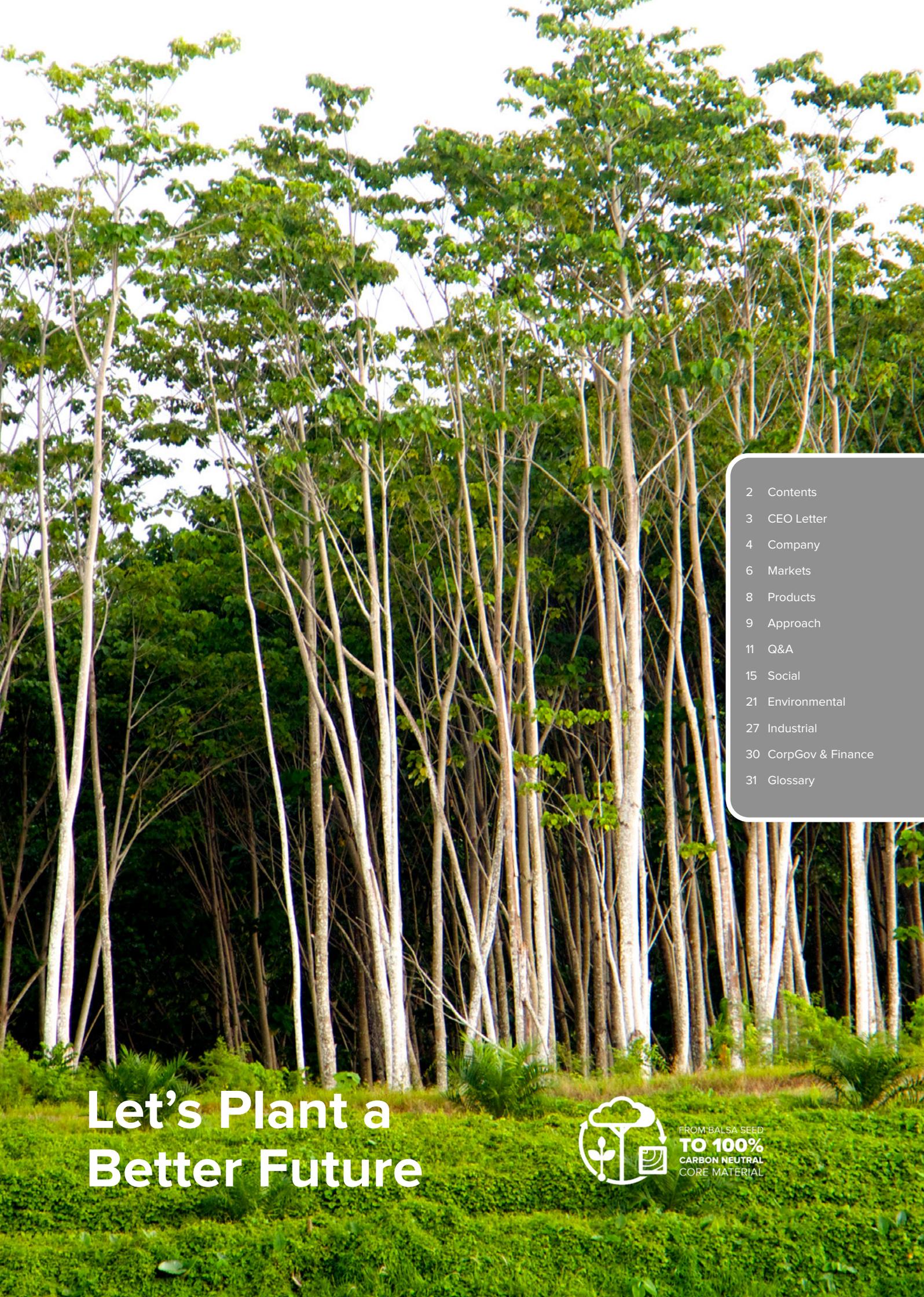
DAILY SPORT PROGRAM FOR EMPLOYEES IN SWITZERLAND

The soft foam department developed a daily sports routine for all employees of the Swiss site. Participation is free for everyone and is implemented via an online platform. The initiative has been highly recognized by colleagues and attendance rates have



been going up the whole year. The online basis of the program helps to continue sport practice routines even during the pandemic via remote presence. This sports routine program will be rolled out globally in 2022 as a best practice sharing initiative.

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Let's Plant a Better Future



FROM Balsa Seed
TO 100%
CARBON NEUTRAL
CORE MATERIAL

ENVIRONMENTAL SUSTAINABILITY PILLAR

The environmental pillar comprises the sustainable management of our forestry operations, preserving and protecting forests, improving species and forestry practices, protecting land and water resources and securing biodiversity

As the owner of one of the biggest operations in Ecuador (with c. 11,000 hectares in the provinces of Los Ríos, Manabí, Santo Domingo de los Tsáchilas, Esmeraldas, Guayas and Cotopaxi) and Papua New Guinea (with c. 3,000 hectares in East Britain Province) of balsa (*Ochroma Pyramidale*), we fully recognize the responsibility in promoting a sustainability mindset in global operations, and especially in balsa plantations. Our company controls the entire process of the balsa value chain for the core materials industry, including planting, growing with best-in-class silviculture practices, harvesting, and the production procedures of Forest Management Units

(FMUs) that are 100% FSC®-certified. Some of the harvesting, plantation maintenance, and transport activities are outsourced to contractors that encourage local small- and medium-sized business activities. Since 2019, balsa wood from small regional growers, who are recognized as joint venture partners and included in the company’s FMUs with constant environmental monitoring practices, is considered as being FSC® controlled wood. Best practices and safety standards are always communicated to all suppliers in our operations.

In 2021, **3ACM** planted 52% more balsa trees in Ecuador in comparison to the year before and kept the same planting rate in PNG. We are aware of how important a sustainable approach towards balsa supply chain is and we also make sure that our customers always have access to the high quality balsa cores.

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Our monitoring & protecting practices for forestry sites in Ecuador & PNG in line with UN SDGs and FSC®.

- Environmental Impact Assessment (EIA),
- High Conservation Value (HCV) monitoring,
- Constant control of accuracy of available maps (topographical features, existing and planned roads, boundaries, inhabited spaces, camp location, watercourses)
- Respect of buffer zones,
- HCV sites and non-disturbance status of slopes greater than 30°,
- Ensuring the protection of water sources, important community non-timber resources, endangered species, settlements, and sites of historical or cultural significance.

HCV sites in plantations are monitored on an annual basis, while the Wildlife Encounter Database records sightings of all animals in plantations. Our annual HCV monitoring plans in Ecuador and Papua New Guinea ensure that all the wildlife that coexists with our forest plantations is preserved and maintained over time.

3ACM understands its responsibility towards forestry and nature and uses available soils according to their best use potential, allocating them only to sustainable production practices and protects and guarantees conservation of biodiversity. We continuously invest in R&D and engineering know-how, work with balsa seed trials in order to further increase our industrial productivity, quality and forestry operations yield.

We pay careful attention toward the timing of harvesting. It is our company’s stringent policy never to clear virgin rainforest for new planting, this is why our balsa is 100% plantation-grown on the company’s own land and on that of local landowners who are in long-term partnerships with us and who value and treat balsa forests with care

and respect. Moreover, most new or leased land is reconverted land used for other agricultural activities including crops or cattle.

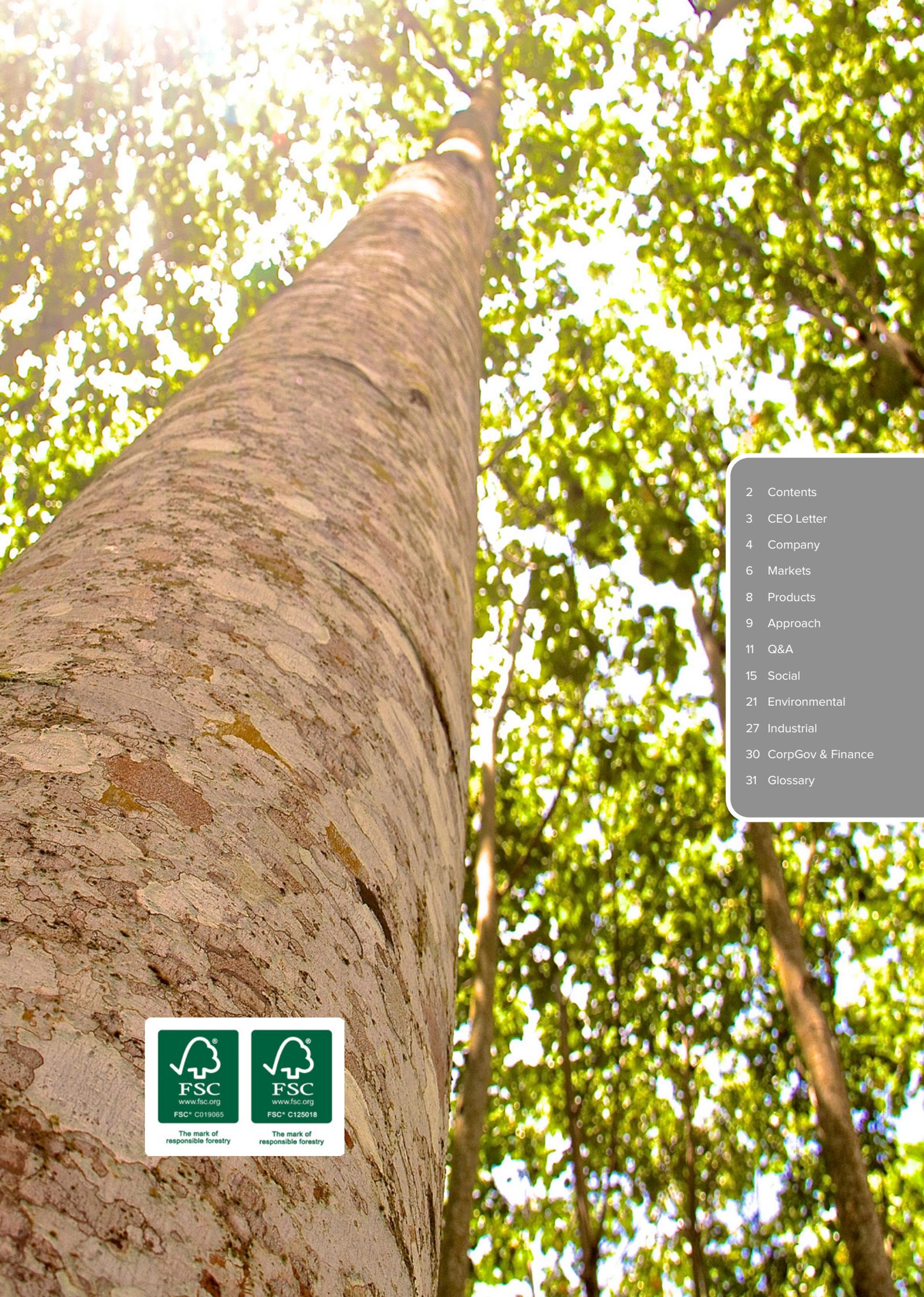
In 2010, **3ACM** was awarded the FSC® Certification as the first global producer and since then has maintained the FSC® Certification for both of our plantations (Ecuador with FSC-C019065 and Papua New Guinea with FSC-C125018) as our commitment towards sustainable forestry management, ensuring long-term plantation productive capacity and sustainable attention towards nature with FSC® principles.

With regard to our global PET production we can highlight that our engineered PET foams absorb significantly less resin in sandwich production and hence avoid excessive material usage at the customer level. Moreover, requested end products’ properties are reached by our products with much lower density range than those from our competition. Our company’s R&D and engineering departments work tirelessly on the continuous improvement of our PET and balsa quality and property combination.

All the above facts make us proud to announce that **3ACM** is making the future lighter and greener, and the end products of our customers more sustainable.



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FSC® CERTIFICATION PRINCIPLES AND CRITERIA

Principle #1: Compliance with Laws
 We comply with all applicable laws, regulations, and nationally ratified international treaties, conventions, and agreements.

Principle #2: Workers' Rights and Employment Conditions
 We maintain or enhance the social and economic well-being of our staff and associates.

Principle #3: Indigenous Peoples' Rights
 We identify and uphold Indigenous Peoples' legal and customary rights of ownership, use, and management of land, territories, and resources affected by our management activities.

Principle #4: Community Relations
 We contribute to maintaining or enhancing the social and economic well-being of local communities. In everything we do, we try to make a positive impact in the communities we are present all over the world. In Ecuador and Papua New Guinea, we run a corporate social responsibility program focused on environmental education aimed at communities. The objective is to help these communities develop a sustainable future and raise awareness on the importance of environmental protection.

Principle #5: Benefits from the Forest
 We efficiently manage the range of multiple products and services of the Forest Management Unit to maintain or enhance long-term economic viability, and the range of environmental and social benefits.

Principle #6: Environmental Values and Impacts
 We maintain, conserve and/or restore ecosystem services and environmental values of the FMU, and avoid, repair or mitigate negative environmental impacts.

Principle #7: Management Planning
 We have a management plan consistent with its policies and objectives, and proportionate to scale, intensity, and risks of its management activities. Our management is implemented and updated based on monitoring information to promote adaptive management. The associated planning and procedural documentation is sufficient to guide our staff, inform affected/interested stakeholders, and justify management decisions.

Principle #8: Monitoring and Assessment
 We demonstrate that progress towards achieving our management objectives, the impacts of management activities, and the management FMU's conditions are monitored and evaluated proportionate to the scale, intensity, and risk of management activities in order to implement adaptive management.

Principle #9: High Conservation Values
 We maintain and/or enhance the High Conservation Values (HCV) in the FMU by applying a precautionary approach.

Principle #10: Implementation of Management Activities
 Management activities conducted by us for the FMU are selected and implemented consistently with our organization of economic, environmental, and social policies and objectives, and in compliance with the Principles and Criteria collectively.

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ENVIRONMENTAL PROGRAMS

ECUADOR – SUSTAINABLE DEVELOPMENT OF INDIGENOUS COMMUNITIES AND A RESPONSIBLE FORESTRY PROGRAM

The Achuar Nationality of Ecuador as well as its ancestral territories is recognized and protected by the Ecuadorian Constitution as a non-profit organization with the primary goal of restoring, preservation and diffusion of its culture, language, and traditions. In 2021, **3ACM** signed a 2-year technical cooperation agreement with the Achuar Nationality of Ecuador to promote sustainable forestry practices and responsible growth, harvesting and processing of the balsa wood (*Ochroma Pyramidale*) for indigenous communities.

The scope of the technical cooperation agreement is to provide the Achuar Nationality with knowledge regarding forestry and silviculture best practices. This includes the establishment of balsa plantations in the territory of the Achuar (i.e. training in selection of suitable land, seed selection, land preparation and nursery), the maintenance of balsa wood plantations using silviculture best practices (i.e. thinning, clean up, plague and disease control procedures aligned with sustainable forestry guidelines,

forestry inventory) and harvesting (i.e. quality criteria and usable volume estimations, sawmilling techniques, environmental and legal regulations for wood harvesting).

The Achuar Nationality will be in charge of the entire operation with **3ACM** as the provider of technical and legal assistance not involved in any commercial transaction of the wood resulting from their plantations. With more than 80 years of experience in mastering the industrial production of balsa wood, **3ACM** is truly committed to ensure that neighboring communities as well as indigenous and native people can secure sustainable and responsible income for generations to come.

We care about indigenous communities and provide these groups with technical and legal assistance.

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PROJECT SOLAR BUTTERFLY

3ACM is an official technical partner and sponsor of the Solar Butterfly project by Louis Palmer and its team, whose mission is to inspire people all over the world and make them aware that solutions against global warming are available.

The Solar Butterfly is the first-ever solar-powered mobile home to drive around the world while producing enough solar energy not only for the house but also for charging the battery of the towing electric car. It is designed and built by Swiss universities and engineers with lightweight panels by **3ACM** whose PET-core is made from ocean-bound plastic waste.

Starting in May 2022, the Solar Butterfly will tour around the world visiting more than 90 countries driving more than 200,000 km on 6 continents in 4 years. More than 1000

projects and events with the local population, schools, political leaders and press will be created. We will continue to report about this amazing project in our Sustainability Report in the years to come.

FORMULA STUDENT GERMANY – SPONSORING DEVELOPMENT OF SUSTAINABLE ELECTRIC AUTONOMOUS VEHICLES BY STUDENT ASSOCIATIONS

Every year there is a competition among global student engineering teams who develop and design racing cars that perform in different racing contests. Our company sponsors a student association with our core materials that develops prototypes of pilot-free (autonomous) electrically driven racing cars that will be performing in 2022 in various European races. A full report of this project will be communicated in our sustainability report 2022.

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INDUSTRIAL SUSTAINABILITY PILLAR

The industrial sustainability pillar comprises the sustainable management of our industrial operations, monitoring of sustainable quality and performance of our products, their continuous improvement. At the same time it aims to preserve and protect water resources, increase energy efficiency, reduce paper consumption and bring down CO₂ and other industrial emissions.

In 2021 all our sites were running at full capacity, but the environmental projects were the continuous focus of the global teams.

Our R&D center in Switzerland made multiple break-throughs that will allow us to report a significantly better footprint in 2022. Moreover, our Swiss site continues its transition to LED light (3rd year out of the 5-year plan) and inaugurated several projects that address a massive reduction in potential wastes in coming years. Despite the general energy mix in Switzerland being 75% based on renewable resources (66% from major hydropower plants and 8.4% from solar, wind, small hydroplants and biomass), in 2021 our site in Sins signed a contract that from next year guarantees electricity based on 100% renewable resources.

Thanks to efficiency improvement projects initiated a few years ago, High Point was able to use 5% less water and 2% less electricity despite an 11% higher output in 2021.

Our Balsa operation in Ecuador benefits from an energy mix in a country which is almost entirely powered by renewables. In 2021, the site was able to reduce its total fuel consumption by 37% and non-hazard-



John Chen
Managing Director Region Asia Pacific

ous waste level by 32%, even with the production level being the same as the year ago. On the other hand, the 3ACM site in PNG was able to achieve a 20% reduction in gasoline and diesel consumption, as well as reducing its need for electricity by 5.3%, while at the same time keeping its production volumes at the same level.

Moreover, both of our sites in Ecuador and Papua New Guinea use biomass to fuel the boilers responsible for the generation of water vapor that is used in our kiln-dry process for wood. The sawdust from our

*“Solutions
for a greener world.”*

John Chen

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operation is also utilized to reduce to the bare minimum the sourcing of biomass from external sources.

Our focus on sustainability and constant awareness of scarce resources has resulted in development of ideas and projects which are in the pipeline. We try to outperform our own achievements every year, focusing on sustainable solutions for our customers and environment.

All our products, **AIREX®** and **BALTEK®** are compliant with REACH and RoHs regulations and include zero illegal hazardous raw materials.

GREENHOUSE GAS EMISSIONS: CO₂ NEUTRAL COMPANY

Most of our sites have projects reducing energy consumption and, as a consequence, the greenhouse gas output. We closely monitor environmental emissions and fulfill all government requirements.

For the balsa product, **BALTEK® SBC**, a Life Cycle Inventory (LCI) analysis was carried out to quantify the CO₂ absorption from our plantations. The analysis proves that the greenhouse gas (GHG) emissions captured by our balsa plantations are significantly higher than the GHG emissions caused by the balsa core material production. The research and calculations were conducted by SCX – Bolsa de Clima de Santiago, Chile, and Factor CO₂, Ecuador. These confirmed that **BALTEK® SBC** achieves a superior GHG emission balance without the use of external offsetting. As a result, **BALTEK® SBC is the first carbon-neutral core material in the world.** Moreover, our company’s policy is to have a planting rate higher than a harvesting rate that together with our genetic improvement program means a constant increase in biomass and higher carbon capture. The carbon surplus ►

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captured by the annual balsa production of Ecuador and PNG may partially offset either our own PET production globally, or industrial emissions of our customers making the respective products carbon neutral. We continue working on further increasing biomass in our plantations and capturing more carbon emissions. A detailed report on CO₂ neutrality will be issued together with our Sustainability Report 2022.

We know that there is always a room for further improvement and as such we set ambitious goals for our global operations, including PET and Balsa, to further improve our joint footprint and continue to make the future lighter, greener and more sustainable.

ISO CERTIFICATION

3ACM demonstrates its best practices through regular external certification and compliance with international golden standards.

The **Quality Management System** at all our sites demonstrates its compliance with ISO 9001:2015. The **Environment Management** practices at our Swiss site are certified with ISO 14001:2015 and **Health and Safety Management** practices - with ISO 45001:2018. Sites in the US, Ecuador and China are planned to be certified with ISO 45001 and 45001 in 2022. We demonstrate our commitment to continuous improvement in relation to environmental, quality and H&S management with annual audits and re-certifications every three years.

INDUSTRIAL PROGRAMS

OPERATION CLEAN SWEEP®

We are aware that spilled plastic pellets, flakes, and powder can make their way into local waterways and, ultimately, estu-

aries and oceans, endlessly contaminating nature. Thus, in 2020, **3ACM** joined Initiative “Operation Clean Sweep” (<https://www.opcleansweep.eu/>) and in 2021 kicked off a large project focused on overall processes and raw material unloading locations, to make sure that no plastic particles (pellets, flakes, and powder) are left uncollected in the unloading areas.

The project was closed after a successful implementation of the following solutions:

- remediation of the slope near the PET unloading site,
- protection of the PET unloading area with suitable partitions so that possible contamination would remain on the surfaces that can be easily cleaned and where contamination can be properly collected and disposed of,
- implementation of filter baskets in the water outflow at all unloading points,
- installation of valves at the silos to avoid the plastic splashing out.

Implementation of zero pellets loss measures were completed in Switzerland and US as planned in the summer of 2021. Today the company has a much cleaner sweep than ever before.

GLOBAL LIVE QUALITY ASSURANCE

All **3ACM** sites are connected with a software program that reports live to a global quality database and shows hundreds of tests running live in all technical laboratories around the globe. This is the way we can guarantee the best properties and performance of our products to our customers in every location across the globe.

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CORPORATE GOVERNANCE AND FINANCIAL SUSTAINABILITY PILLAR

The **Corporate Governance and Financial** pillar comprises good, fair and ethical corporate governance practices, sustainable and profitable growth, reliability in relation towards the customers, partners and stakeholders, being a constant innovator and leader in setting sustainable industry standards.

3ACM sees honest, transparent and fair business conduct as fundamental to its operations. Our commitments are included in the Global Code of Conduct that applies throughout the company and is binding to senior and middle management, as well as to all employees, partners, customers and suppliers.

In addition to being a responsible global employer and partner, we value commitment towards financial performance and sustainable growth. We at **3ACM** are fully aware of the company’s mission and aspirational targets for sustainable development and growth, acting towards increasing the value offering and our customers’ experience. The company is proud to show year-



Kilian Jauch
Division CFO

on-year sustainable financial results, market positions, as well as being recognized as a trustworthy and responsible long-term supplier, business partner and employer. Our approach of continuous improvement, both in R&D and sustainability areas, together with established preventive risk-management practices, secure our position against short and long- term risks and challenges.

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“Green energy is not about fashion, it’s about securing a better future.”

Kilian Jauch

GLOSSARY AND ABBREVIATIONS

3ACM	3A Composites Core Materials
c.	circa
CO ₂	Carbon Dioxide
CVA	Conservation Value Attribute
EIA	Environmental Impact Assessment
FSC®	Forest Stewardship Council®
GHG	Green House Gas
HCV	High Conservation Value
H&S	Health and Safety
ISO	International Organization for Standardization
KY	Kentucky
LCI	Life Cycle Inventory
LED	Light-Emitting Diode
NC	North Carolina
PET	Polyethylene terephthalate
OCS	Operation Clean Sweep®
PNG	Papua New Guinea
PPE	Personal Protective Equipment
R&D	Research & Development
REACH	Registration, Evaluation, Authorization and Restriction of Chemicals, EU Regulation
rPET	recycled PET (post-consumer grade)
SDG	Sustainable Development Goals
TCO	Total Cost of Ownership

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Europe | Middle East | India | Africa

Airex AG

5643 Sins, Switzerland

T +41 41 789 66 00 | F +41 41 789 66 60

corematerials@3AComposites.com

North America | South America

Baltek Inc.

High Point, NC 27261, USA

T +1 336 398 1900 | F +1 336 398 1901

corematerials.americas@3AComposites.com

Asia | Australia | New Zealand

3A Composites (China) Ltd.

201201 Shanghai, China

T +86 21 585 86 006 | F +86 21 338 27 298

corematerials.asia@3AComposites.com

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www.3Acorematerials.com



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