



CSR White book **SOPREMA**





People first
Circular economy
Building tomorrow





Editorial



Pierre-Étienne Bindschedler

Managing Director

A handwritten signature in black ink, appearing to read "Pierre-Étienne Bindschedler".

As we draft this editorial, in early May 2020, the consequences of the global health crisis caused by COVID-19 are still wholly unclear. In just a few weeks, a virus has shaken up systems and organisations that had appeared to be firmly established. For instance, over half the world's population finds itself under lockdown, an unprecedented situation in contemporary history!

Considerable personal and professional difficulties have rapidly disrupted our day-to-day lives, a situation widely reflected in the media. But alongside the anxiety this causes in day-to-day life, we should also delight in much more positive observations which have lifted our spirits throughout the world: a clearly brighter outlook, a generally more active biodiversity and an occasionally startling silence in areas usually so noisy!

This exceptional situation must also be approached with humility, responsibility and, especially, the ambition to do better next time. We believe, above all, that it is necessary to sustain this positive momentum, with confidence as our watchword. **SOPREMA** has weathered a number of crises since 1980 but has managed to develop by continually innovating in the business in which it has built its reputation, the construction industry.

This industry is still the number one energy consumer, accounting for more than 30% of greenhouse gas emissions (GGE) in France, and is the third-biggest greenhouse gas emitter worldwide. Now more than ever, the industry must respond to social expectations, such as the greater need for comfort due to a significant increase in home working, more connected buildings, optimised running and operating costs, etc. But also, as an overarching principle, there is a need to reduce our carbon footprint in order to better combat climate change, which has now become a general concern.

In 2019, **SOPREMA** published its first non-financial performance statement (DPEF 2018). That exercise gave us an opportunity to present our proposals and strategies to address environmental and societal challenges. Our experience in the area and our commitment to the longer term are major advantages that allow our Group to help to propose effective and pragmatic solutions.

As you read the **CSR White Paper** that you have before you, you will see that it is a complement to the DPEF. Its objective, in a free format, is to encourage an understanding of the non-financial issues at stake and foster greater awareness of the many initiatives and actions undertaken by **SOPREMA** on societal themes.

This proactive, sincere commitment from our highly motivated teams enables us to move forward on our three strategic priorities: **People first**, the **Circular economy** and **Building tomorrow**. At Group level, our ambition is to reduce short-, medium- and long-term risks with customer satisfaction as our motto!

By giving meaning to our daily work and offering a better outlook to our different stakeholders, we know that we can help to build sustainably and efficiently for tomorrow.

Let us continue to imagine a sustainable and positive future!



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SOPREMA Business Model

Challenges



People first

- Towards zero accidents
- Towards a culture of agility and resilience
- Towards 100% of employees contributing to sustainable overall performance



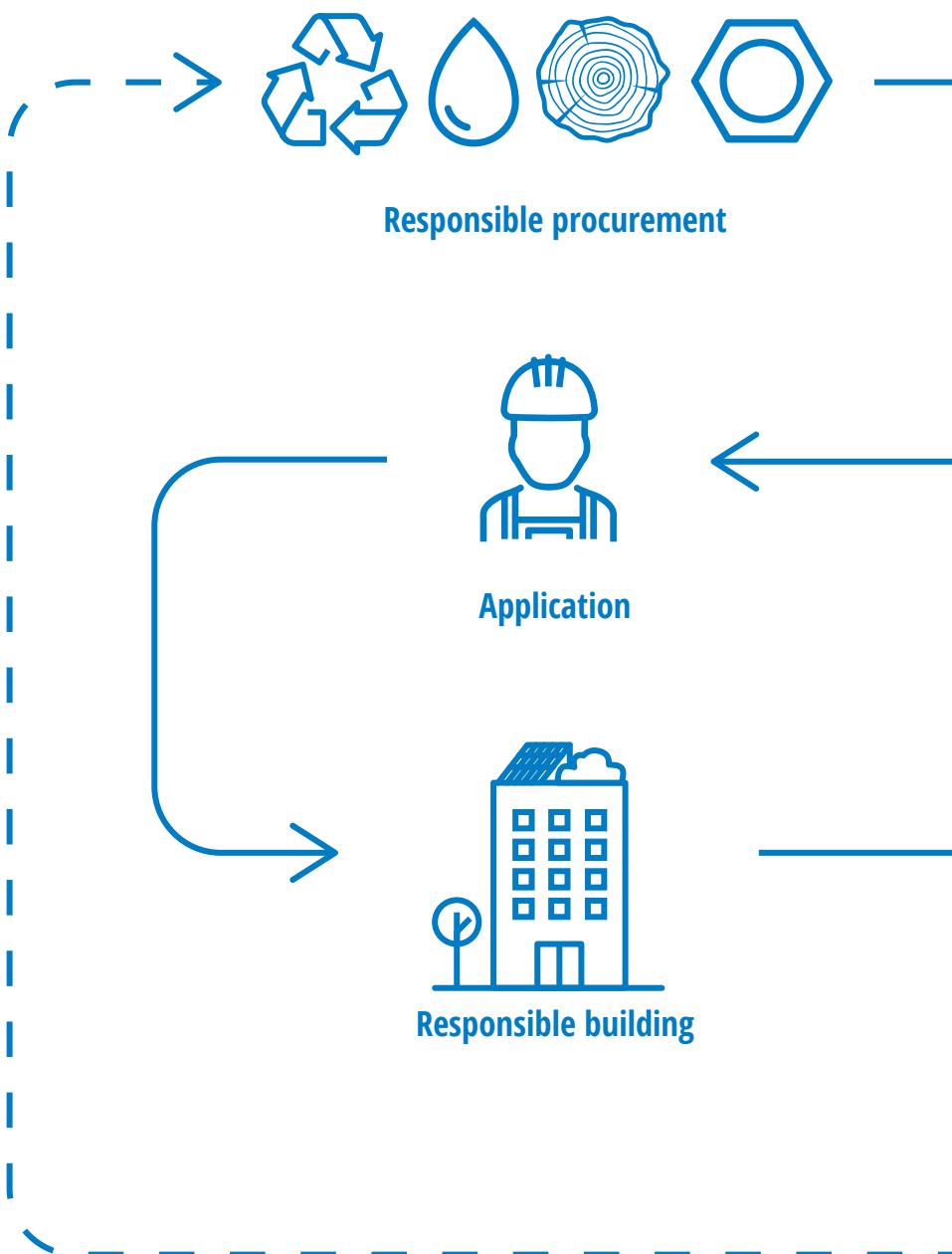
Circular economy

- Towards a 100% reduction of our recycled waste
- Towards a 100% local approach
- Towards restraint and energy efficiency

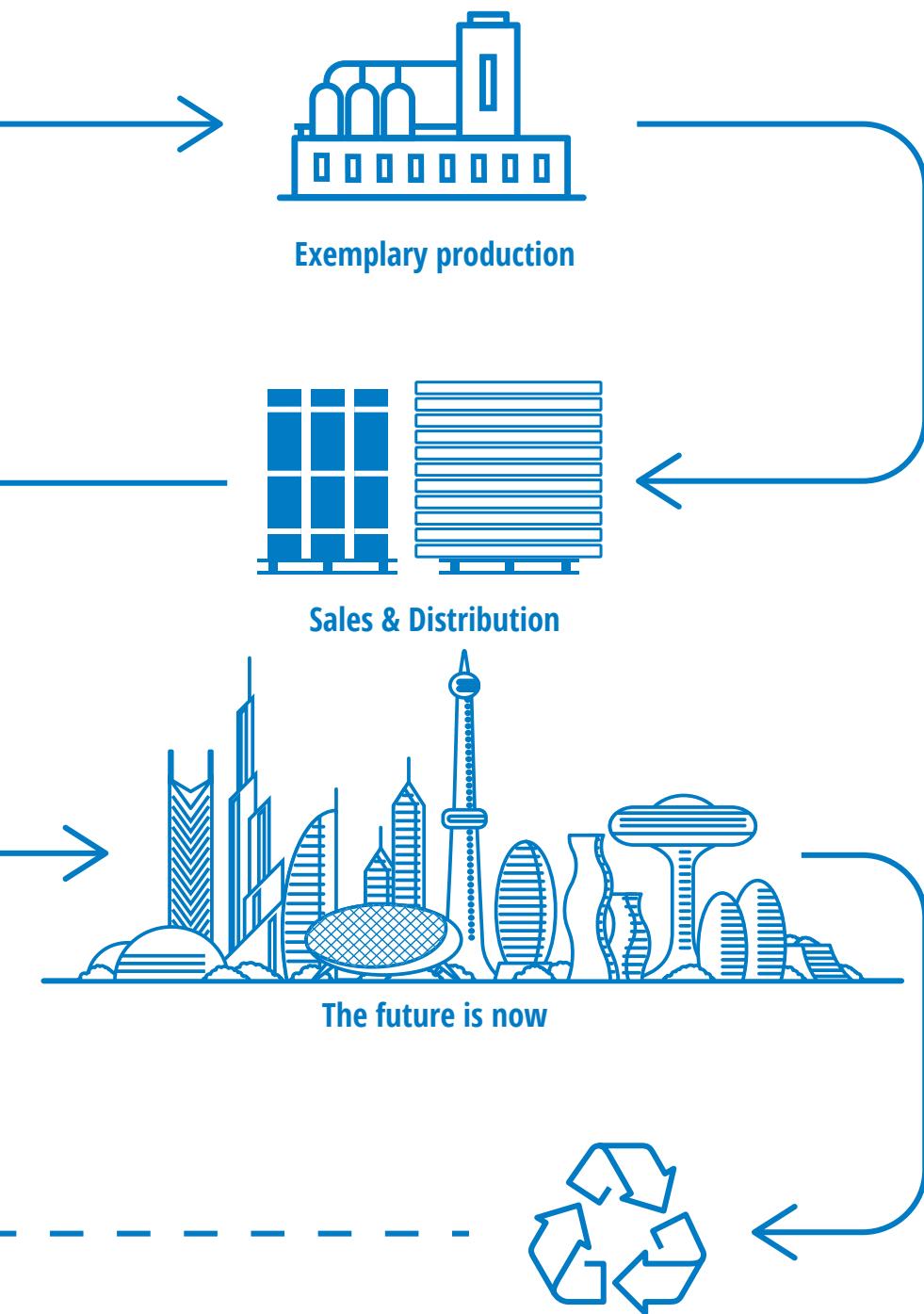


Building tomorrow

- Towards a 100% sustainable range of products and services
- Towards a range of products and services fully in line with society's expectations
- Towards 100% low-carbon solutions



Stages of the model



Responsible Procurement

- Sourcing adapted to the local context
- Optimised logistics
- Products & Services

Exemplary Research and Production

- Eco-social design
- Restraint and principles of the circular economy
- Internal engineering of our production processes
- Towards the low-carbon transition

Sales & Distribution

- Strong guarantees
- Digitisation and digital transformation
- Training our customers

Application

- Assistance and technical support
- Safety
- Health and quality of life in the workplace

Responsible Building

- Customer satisfaction
- Comfort of the building
- Overall performances

The future is now

- Contributions from solar power
- Biodiversity
- Water management
- Combatting the urban heat island effect
- Energy management
- Deconstruction and recycling of materials





People First

SOPREMA makes People the main focus of its strategy. Each employee therefore has an important part to play, does their bit and makes a contribution to the collective performance, irrespective of their geographical location and their particular job: in research and development, as part of an engineering department, at head office, at Construction Agencies, at industrial and logistic sites or as part of any one of the Group's various entities. Which is why **SOPREMA**, a family-owned Group, considers it essential to listen to what its employees have to say to achieve an overall performance that profits everyone.

Selecting the right talents, empowering them and helping them to grow in an environment of mutual trust to develop new businesses and skillsets and, therefore, always be in line with market needs. This is our credo and the keystone to our human resources policy!



Motivating and Inspiring

The importance of human capital



1

In addition to integrity, respect, commitment, innovation, safety and respect for the environment, human capital is a fundamental asset as far as the **SOPREMA** Group is concerned. Indeed, the human factor is to be found at every level of the Group, from the product design phase to industrialisation and logistics, during application and, of course, in our after-sales service.

This relationship of mutual trust between the company and its employees is essential if we are to progress quickly and effectively.

Incorporating new structures

SOPREMA regularly expands its business and likes to pay special attention to the incorporation of new structures and fresh employees.

In 2019, for example, particular care was given to eastern Europe. Several visits for new colleagues were arranged in situ or at **SOPREMA's** head office for us to introduce ourselves, share our values and strengthen our group culture. The common thread between these meetings was to create an ambitious and responsible road map common to everyone.

Cultivating an ability to listen and open-mindedness



2

Relations between managers and staff are based on listening to what the other has to say, with the emphasis on collaboration. It is not simply a matter of passing on technical know-how to the staff but also, and perhaps especially, about cultivating open-mindedness, curiosity, independence and resourcefulness. While remaining pragmatic and humble, everyone is invited to bring their intelligence and experience to help the Group to move forward, all the while bearing the goal of continuous improvement in mind.

Giving meaning

The very crux of our existence is to help to construct buildings that meet a basic need: to protect our customers and shelter them from bad weather as comfortably as possible, regardless of the time of year or the context.

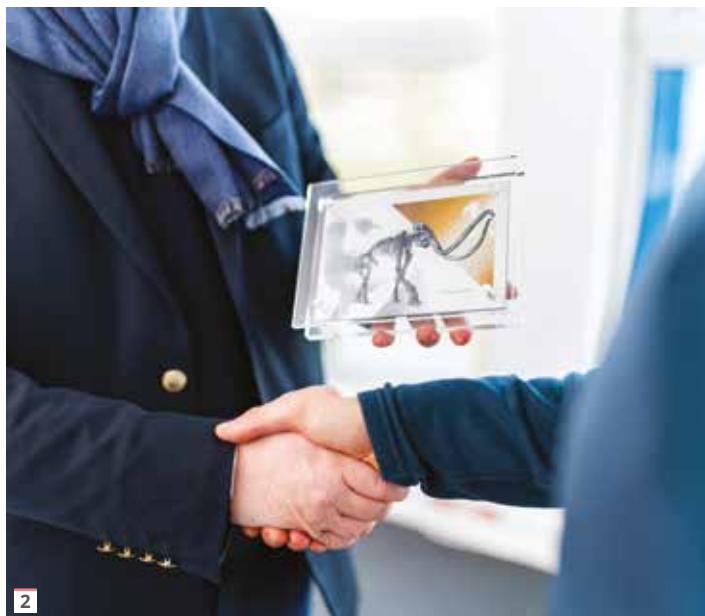
Fully aware of what is a stake for society and the environment, the **SOPREMA** Group is more than ever committed to the construction of more sustainable, responsible buildings. A meaningful commitment shared by each and every one of our staff.

1 Communication Department SOPREMA Entreprises. © Vincent Muller.

2 Training SOPREMA Entreprises. © Vincent Muller.



1



2

Offering a long-term career path

SOPREMA is committed to promoting long careers by offering rich and rewarding career paths. Opportunities for mobility are therefore available, whether geographical or functional. These are made possible by the broad variety of trades employed in the Group. Bridging provisions are therefore possible between construction and industrial activity, for example, and significant career moves: a trainee at an agency may one day become a site manager or a section manager and, why not, an agency manager.

This results in an average length of service of 8 years for construction work and 10 years at industrial sites. Many of our employees even spend upward of 30 years in the firm. Proof that the varied experiences that can be built up in a single career at **SOPREMA** leave enthusiasm and commitment intact.

1 Cross-department Meeting. © W. Fernandes.

2 Awards Ceremony. © 128 dB.



Working Conditions

Project "Respect": Let's work better together for greater efficiency!

It all began at the **SOPREMA** plant in Grobbendonk, Belgium. In order to improve the work environment and facilitate discussions between the various departments and management (who have little contact with each other from day to day owing to their different working hours), the Site Director decided to set aside a period in the day which he called "Let's get lunch and talk to each other". Operatives from production, logistics, the cleaning team, etc. are invited to this lunch. The staff are encouraged to ask questions and make observations and suggestions. The idea is to find out how they feel and get their feedback on the general atmosphere in the workplace. It resulted in the emergence of three concrete requests for change on the following issues: communication, training and recognition. This first step got the ball rolling on Project **"Respect"**.



Facilitating Discussions

Following up on this initiative, the site introduced other actions, according to the "try my life on for size" principle. One Friday a month, support and sales staff thus worked on the production line after basic training. This initiative was a way for them to get to grips with the day-to-day reality of operatives, think about how to improve the work environment and understand needs on workstation ergonomics, for example. At the same time, it presented an opportunity to talk to and share their experiences with managers.

Another example is the monthly presentation on the activity of a particular department (sales, human relations, finance and marketing, as well as logistics and after-sales) given to the other units at the site in order to explain their day-to-day lives and discuss best practices. These user-friendly shared work sessions bring employees closer together and give them a better understanding of the jobs everyone else has to do, while helping to improve on their own skills.

Optimising the passing on of know-how

Field operatives have provided a description of their know-how in a formal document (work instructions, equipment use, etc.) called **SOPREMA Academy**. These documents, used to facilitate and accelerate the induction of newcomers to the company, are now even shared with other countries in order to broaden and capitalise on the company's know-how. All of this pooled information helps to develop employees' skills and guarantee validation of their work, while helping to confirm their loyalty to the company.

It's now been a full year since Project **"Respect"** was launched and it's starting to bear fruit: a better atmosphere, greater employee involvement, improved efficiency and a stronger culture of open-mindedness: 83% of employees are satisfied with their working conditions, which is higher than the usual standards in industry. At the same time, productivity has risen from 75 to 85%. Based on the success of this initial experiment, the project is expected to inspire other units in the group on the international stage.

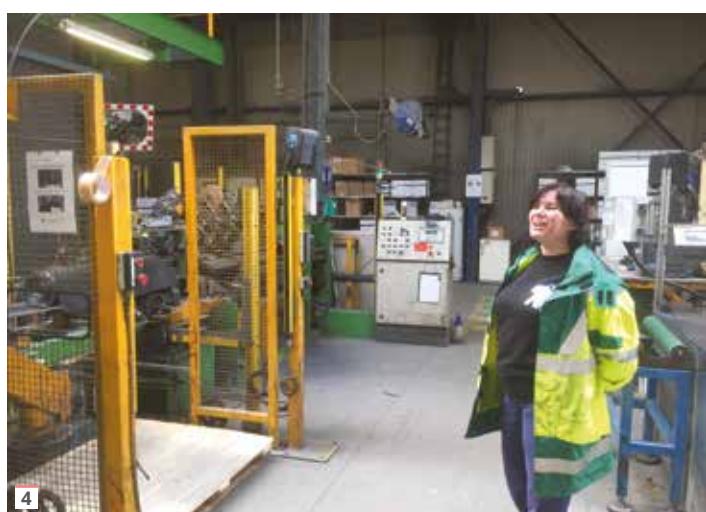
1 Young engineers are trained in the field and then take the physical jobs of the operatives into consideration, which encourages them to come up with ergonomic solutions.

2 Annual "Best Idea" in the field award allocated by General Management, northern Europe.

3 Every employee at the Grobbendonk plant signs a document in which he or she undertakes to contribute to the success of Project "Respect".

4 Every month, staff from the Quality Department take control of the winding equipment for 2 hours.

5 Office staff from logistics took the forklift truck operator licence to try their hand at and take over the work of operatives in the field.





Working Conditions

Respect Matters

All organisations involving people (as opposed to robots or machines) are fundamentally connected by the same things that connect society: shared values, a desire to be safe, adherence to human decency and perhaps most importantly, to be able to express ourselves openly. When we make a choice to join an organisation, we are entering into a partnership.

As a matter of due course, we interact with other people during our days on the job. We all have enthusiastic days and challenging days, different ways of learning and working and communicating, individual and unique reactions to stressful or busy environments. The interpersonal skills required to navigate relationships in a positive way do not always come easily to people.

The quality of our relationships at work has a direct effect on the quality of the work that we achieve, and inevitably on the performance of our enterprise. Everything comes down to people. At **Convoy**, we recognise the keen importance of behaviours in building a productive and healthy culture. Several years ago, **Convoy Supply** implemented a program that we call "**Respect Matters**". It was designed collaboratively with Senior Management to reflect the core values at **Convoy** that we aspire to model in our behaviour. We outsourced the actual training workshops to professional consultants in the field of anti-bullying, human rights and workplace safety. We wanted to augment the legal requirements of this training with a deeper dive into self-awareness.

"Respect Matters" training sessions were conducted for every **Convoy** employee. These interactive and role-playing workshops underlined not just each person's legal obligations but also emphasized the great business benefits of encouraging, and supporting, and leading by example to promote respectful behaviours among colleagues. Topics included practicing professionalism, types of discrimination, how to create inclusive cultures, methods to reduce and eliminate workplace bullying, and promoting harassment-free workplaces. Additionally, the key concepts of the "**Respect Matters**" Respectful Workplace sessions are being integrated into **Convoy**'s Orientation process in a variety of training formats.

The workshops were a resounding success. And it is our intent to maintain "**Respect Matters**" on a yearly basis to ensure that our culture stays current and proactive with emerging trends and educational best practices.

Convoy strives to create an environment where all employees are inspired to bring their best to their work, and to support each other in doing so as well. By providing a supportive workplace for our employees, we are empowered to give our best for our customers.



1, 2 & 3 Convoy employees.

"I gained new insight on my own personal mannerisms and conduct that could lead to a negative workplace, and strategies to change that."
Anonymous

"A lot of good conflict strategies, as well as awareness of potential issues in the job setting. I also learned about possible gender issues."

Ian Ramsey

"Every one of us is responsible for the culture we create. This is a very valuable tool for my tool box."

Bill Bowers

"I learned a lot more about acceptance of other people's feelings, beliefs, opinions, and to be more respectful."

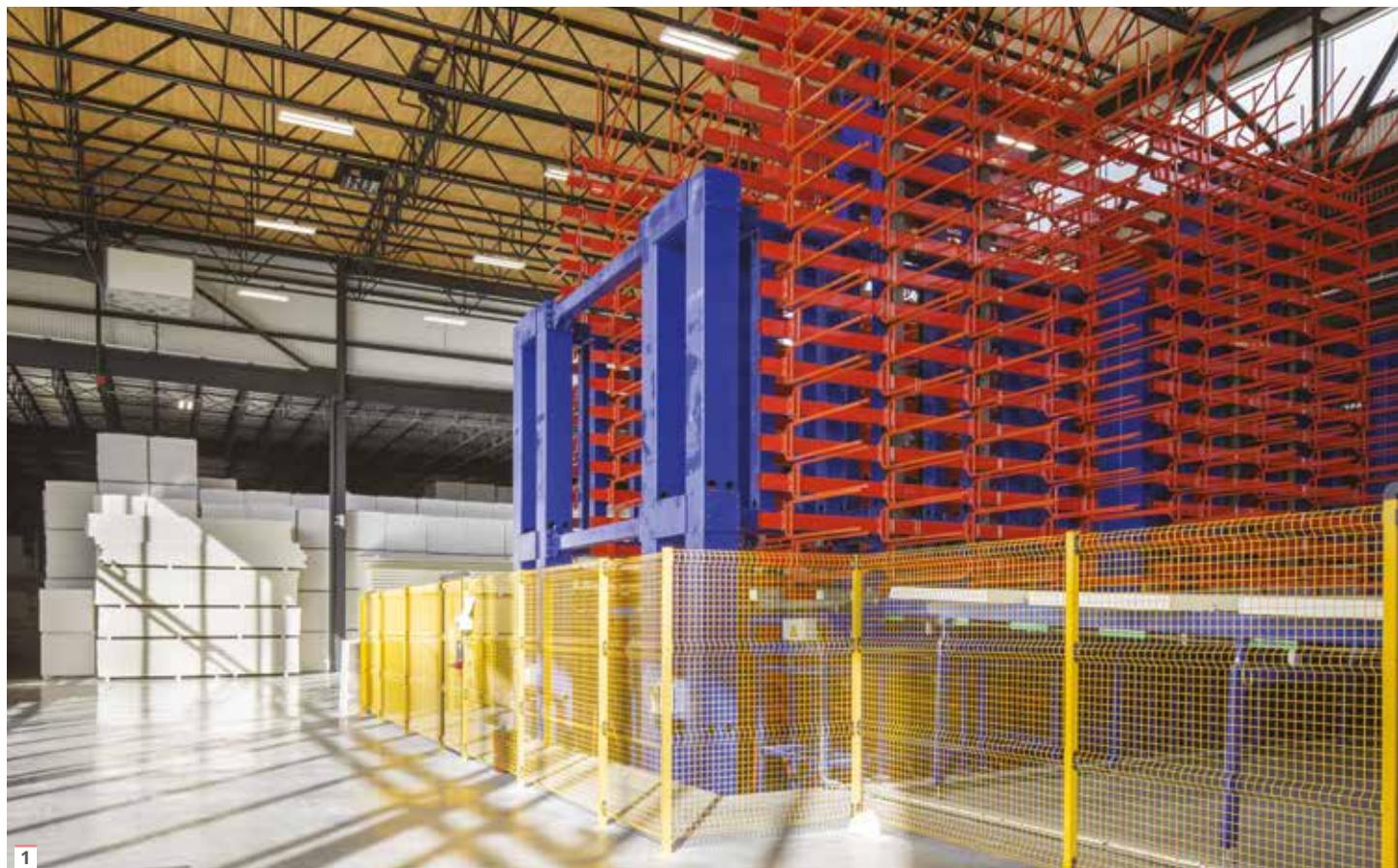
Clare McGill





Working Conditions

Providing the best environment



The Group always sets out to provide the best environment for its employees, irrespective of country or continent. In Spain, for example, a chef creates quality menus at an attractive price in the refectory at the Castellbisbal site.

The entire Southern Europe zone regularly invests in the construction, improvement and layout of buildings to provide optimum workplace comfort: suitable furniture, discussion areas, charging stations for electric cars, rest areas for drivers, etc.

At Drummondville in Quebec, **SOPREMA** stands out for the quality of its working conditions and its work environment. An initiative was set up with experts in natural lighting at the new Sherbrooke plant to design the most pleasant premises possible. Several buildings, such as head office and the first **SOPREMA** plant in North America, have been renovated to upgrade the cafeterias and the rest areas. At Drummondville, balanced, health-aware meals, accompanied by advice from nutritionists, have been implemented.

To this we can add various local sports activities in which employees take an active part.



1 & 2
SOPREMA plant manufacturing polyisocyanurate insulation boards -
Drummondville (Canada) © Stephane Groleau.

Sport in Business: SOPREMA keeps fit and develops its Mammouth Sportif (*sport mammoth*)!



The **SOPREMA** Group is in favour of and encourages active participation in sports activities, which helps to develop team spirit, encourage discussion and sociability, and maintain the good health of its employees.

The Chartres site in France, for example, includes sports activities in its in-house events. Its employees have been able to try their hand at kayaking, ice skating and orienteering. It has also agreed a partnership with the Odyssée, the biggest water sports complex in France. If a company team is put together to take part in a sport on the premises once a week, the agency also opens its doors to people from outside the company for massage sessions or awareness campaigns on Repetitive Strain Injury (RSI) and adopting the correct gestures and postures.

In addition, for the Tours marathon in France, our subsidiary **Adexsi** organises the **Adexsi'Race**. A donation is made to a charitable association for every kilometre run by our employees. In Strasbourg, France, the company organises geocaching events and takes part in fun competitive races.

In Germany, **SOPREMA GmbH** is developing a number of sports activities at its sites, for example a football tournament, the "**Mammut Cup**", between customers and employees on a mini football pitch opposite the Hof training centre and a beach volley tournament at the company party in 2019. The sand used during the competition is donated to the municipality for its school's playing fields and playgrounds. Our German colleagues also enjoy running! And the company covers the cost of their enrolment in various races like the **SOPREMA Neckar Run** (a 10 km run in Mannheim), the RömerMan triathlon in Ladenburg and the "**Firmenlauf**" (company run) in Bad Marienberg, a 5 km run near the **SOPREMA** factory. In addition, the Group also takes part in charity runs and makes donations to charitable associations.

At **SOPREMA's** North American head office in Drummondville, Canada, a fitness room has been built and a sports coach is on hand every day to help employees with gym, squash and CrossFit, among other things.

All actions that make a positive contribution to the well-being of the employees and the company's attractiveness!



Working Conditions



Rodolphe Lefèvre
Assistant Director
SOPREMA Entreprises

Encouraging the growth of in-house skills

The Group adjusts to the professional strengths and human qualities of each of its employees and, at the same time, advises and assists with the career path they would like to pursue. Our attitude: to inspire confidence!

By creating an atmosphere conducive to independence, we also encourage our staff to take initiatives, develop their skillset and surpass themselves. At **SOPREMA Entreprises**, there is no one profile for a position. Delimitations are flexible. Everyone gets the chance to create or develop their job requirements according to their skills, their wishes and their motivations. *"A French trainee engineer can go on to become a business manager, because he has found a way to develop the façade activity and show that he is capable of making the most of opportunities. Today, in his turn, he manages a site supervisor and a trainee to whom he passes on what he has learned"*, recounts Rodolphe Lefèvre, Assistant Director of **SOPREMA Entreprises**. *"At the end of the day, our aim is that each employee makes his trade his own and shapes it in his own image"*.



Julien White
QHSE Manager
SOPREMA Entreprises
Strasbourg Agency

A more comfortable work-space for employees

In addition to suitable handling tools (lifting appliances, lighter aluminium hand trucks, etc.), providing employees with the right equipment is essential in guaranteeing their comfort and safety at work. At the Strasbourg Agency, a far-reaching campaign to replace Personal Protective Equipment (PPE) has been undertaken. Our zinc roofers are now provided with more ergonomic safety harnesses, fitted with more comfortable padding. Our safety shoes have been replaced with less cumbersome models, more comfortable to wear. And our ear plugs are custom-moulded to the ears of each tradesman.

As for our trousers, they are more hard-wearing, more supple and are fitted with a pocket to add knee pads to strengthen them for heavy work. A further adaptation: more flexible working hours between summer and winter, especially for damp-proofing and waterproofing specialists who use a blow torch. If the site and the environment allow, they can begin earlier in the day if the weather is expected to be very hot, for example. For Julien White, QHSE Manager in Strasbourg: *"The most important thing is always to listen closely and pay attention to feedback from our tradesmen on the building sites"*.



Mobility: optimising travel

To keep down greenhouse gas emissions (GGE) caused by the journey to and from work, **SOPREMA** drafted a business travel plan at the head office in Strasbourg, France, in 2018. An initiative that encourages employees to be more aware of their responsibilities to the environment and promote cleaner mobility.



Promoting bicycle use

As for two-wheelers, the Group has also promoted the "**On your Bike to Work**" campaign. For a one-month period, employees at head office and a few other French sites cycled no fewer than 15,000 km! A good reason to think about using this means of soft transport... all year round. In Strasbourg, an original and ambitious campaign entitled "**My Job, My Bike**" began in December 2019. The company contributed to the purchase of mechanical or electric bikes for those employees who in turn agreed to come to work by bike whenever possible.

At the same time, head office works with the local authorities to contribute to this transition to bike travel by providing new infrastructure that benefits all of the companies in the industrial park. The objective at the Strasbourg site is thus to reduce single occupant vehicle use from 80% to 70% over three years and, eventually, to 50%, by adopting multimodal travel whenever possible, combining the car, carpooling and public transport, etc.

In Germany, **SOPREMA** has been putting lease bikes at the disposal of its employees since 2018. Ownership of these bikes reverts to the employees after three years. At the time of writing, 66 bikes have already been leased, 70% of them electric.

Towards a more environmentally friendly mobility

The European Union has considerably tightened the legislation on fleets of company vehicles as part of its policy on reducing greenhouse gas emissions (GGE). In France, the Mobility Orientation Act adopted in 2019 lays down a restrictive framework.

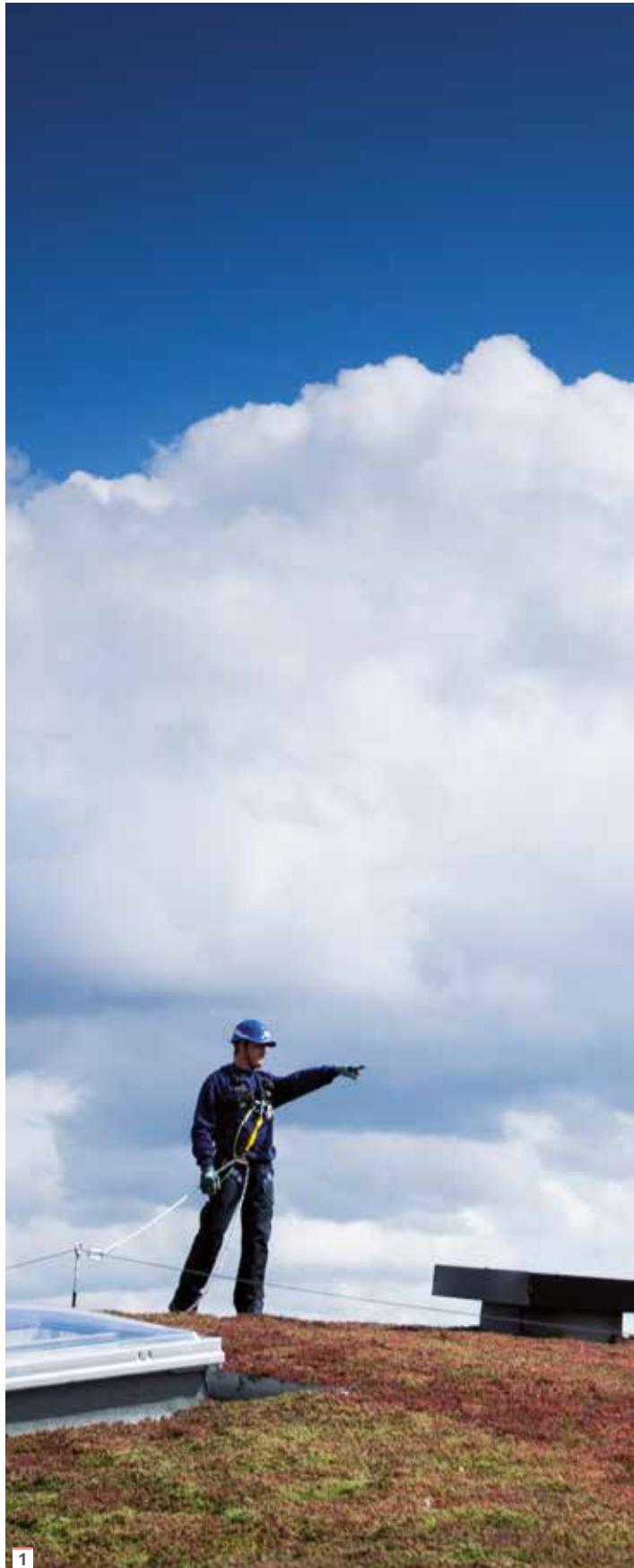
SOPREMA has taken the lead by equipping a number of its sites with electric or hybrid vehicles, as well as the appropriate EV charging infrastructure.

It should also be noted that an awareness campaign aimed at employees has been undertaken to cut car travel to the minimum, wherever possible: adopting videoconferencing, travelling by train, etc.

¹ *On your Bike to Work: the Strasbourg team.*



Health in the Workplace



Cutting back on the frequency and gravity of accidents in the workplace

At the industrial sites

More reliable equipment means fewer breakdowns, fewer human interventions and, therefore, fewer risks of accidents. This is why, at its 28 plants in Europe, **SOPREMA**, at the initiative of Industrial Management, makes significant annual investments towards improving existing equipment and purchasing new equipment to lessen, or even eradicate, very arduous working conditions and improve the well-being and, therefore, the safety of its employees.

The parameters of CAMM (computer-assisted maintenance management) software are designed to schedule and optimise maintenance interventions.

At the same time, to lessen risk and instil correct behaviour, the factories develop awareness and training campaigns: gestures and postures: training on specific risks (ATEX, chemical, etc.), wearing PPE, etc. Not to mention regular safety briefings, posting safety indicators, sharing good practices and generally exemplary behaviour.

And the results speak for themselves: the incidence of accidents is diminishing, with a rate of gravity which, in only a few years, has fallen from 1 to 0.4 and a rate of frequency from 34 to 17.

At Construction Agencies

Within **SOPREMA Enterprises**, the rate of frequency and gravity of accidents in the workplace at the construction sites is lower than the trade average. A good result, which can be explained by continuous prevention campaigns on the subject of safety. The Group has identified the most common types of accidents, back pain and joint pain, to implement targeted campaigns. An awareness campaign has therefore been launched on the carrying of heavy loads and the gestures and postures to adopt. An initiative accompanied by custom-designed actions at the agencies in line with the other types of accident encountered at each site. And to prevent risks, the tradesmen provide feedback and widely share their good practices (use of waterproofing roll application reels or rods, for example).

1 Roof Security. © Alex Méaux.

Restricting the carrying of heavy loads and optimising comfort

At the industrial sites

To contribute to the comfort of operatives and eradicate the most arduous tasks, the sites are adopting automated systems. They are thus acquiring palletising robots, tools to help with handling, tables to facilitate the moving of loads and even exoskeletons (physical assistance).

In Canada, zero accidents is the ultimate objective. The company is stepping up the number of measures employed and has appointed a delegation of Workplace First Aid Ambassadors at each factory. In addition, in terms of concrete examples, to facilitate completely safe handling operations, trucks are loaded within the premises at Sherbrooke and sheltered by a roof incorporating a heating panel at the Drummondville distribution centre. This lessens the risk of falling ice caused by freezing conditions in winter. For Sherbrooke, the space is sufficiently large to accommodate up to six trucks at the same time.

At Construction Agencies

Within the framework of the regulations on arduous working conditions, **SOPREMA** restricted the weight of bituminous rolls to a maximum of 25 kg a number of years ago. As at the industrial sites, we find the same culture at the construction agencies: various handling aids are thus put in place, like the user-friendly wheelbarrow, delivery to the work site, etc. Our teams also see to it that the product batches ordered are optimised, which helps to cut back on handling.





Training

Improving the skills of the fitters

The quality of **SOPREMA** insulation and waterproofing depends on the technical specifications of the products, as well as on the human expertise drawn upon during fitting and the performance of regular maintenance. Because **SOPREMA's** development rests first and foremost on know-how, the Group has, since 1976, established various training courses on its solutions intended for employees, customers, apprentices and job seekers. The aim of this proactive initiative is to enable them to build on their skills to deal with the reality in the field and address market needs, while compensating for a shortfall in initial training. These training courses rely on an international network of 22 centres, 5 of them based in France.

Hands-on training courses for internal and external personnel

SOPREMA offers knowledge acquisition, refresher and improvement modules to its tradesmen, its customer companies and its network of craftsmen. An accredited training body, the Strasbourg Centre, founded in 1976, provides training in the techniques of waterproofing, insulation and cladding throughout France.

For tradesmen at Construction Agencies

- One-week courses for employees with more than 4 years' length of service on the waterproofing of concrete terrace roofs and steel roofs, as well as cladding.
- For employees with less experience, sessions on the basics of waterproofing.

For customers and craftsmen

- Modules on the systems and techniques of bituminous, synthetic and liquid waterproofing, as well as on bio-sourced or polyurethane insulation.



Passing on the Group's expertise

In southern Europe, **SOPREMA** offers a broad range of training courses aimed at its customers at dedicated centres: in Chignolo d'Isola, near Milan (Italy), a site that specialised in the production of PVC and TPO membranes for waterproofing roofs; in Salgareda, close to Venice (Italy) a production site for bituminous membranes, as well as one in Barcelona (Spain). Every year, almost 200 people are given training in laying bituminous waterproofing and synthetic products (TPO and PVC). Another training centre is also expected to be inaugurated shortly in Portugal. These sessions are presented by **SOPREMA** instructors, experts in the sector and consultants in PVC and TPO.

In Canada, **SOPREMA** has 9 training centres to develop the technical skills of fitters, particularly in waterproofing products through Quality Assurance + Safety courses. Blending theory and practice, this form of training aims to pass on the methods to be adopted to work in complete safety and maintain the long-term viability of the products.

At its **WissenWerk** training centre, at the Hof industrial site in Germany, **SOPREMA GmbH** trains its customers in using its waterproofing and insulation products and solutions... No fewer than 650 people were trained in 2018 and 830 in 2019!

Overseeing skills development

Italy provides staff with in-house training courses on customer service, logistics and the new IT tools that accompany them. In Spain, **SOPREMA** offers its sales teams a 3-year training course to upgrade their skillset, with a particular focus on digital tools, such as CRM. The Group also assists promising executives by supporting them on their MBA course.

In 2018, Canada inaugurated its "**SOPREMA Academy**", a training platform dedicated to sharing and developing in-house know-how. Thanks to e-learning, a practical and fun way to pick up new skills, staff can develop their professional skillset in terms of safety, product intelligence, sustainable development and even on a personal level by approaching subjects such as healthy lifestyle, managing personal finances, etc.

In 2017, **SOPREMA France** launched its digital training platform **Sopracademy** dedicated to in-house personnel, which can train more than 1,000 employees spread throughout France, within an optimised time frame.



Lionel Trau
Technical Manager
SOPREMA Entreprises

Training courses dedicated to supervisory personnel

The supervisory personnel at **SOPREMA Entreprises** have access to a number of varied training courses adapted to developments in job requirements. Newcomers, business



managers, works managers, assistants, draughtsmen and -women, and quantity surveyors can take advantage of a custom-designed programme. This programme begins with a session on the basics of waterproofing, followed by a specialisation module devoted to building site management. Professional development sessions

on other techniques, such as cladding and regulations, energy performance, fire regulations, etc. complete this induction scheme that lasts from six months to one year and is handled by the Group's Technical Management team. Alternating between theory and practice, this course is taken by fifty or so new recruits every year.

As for our draughtsmen and -women, they are given training on CAC CAD software. *"We are currently working on developing the substance of all of these courses with fresh content, as well as form, with the integration of upstream and on-the-job e-learning, as well as virtual classes."*, concludes Lionel Trau, Technical Manager at **SOPREMA Entreprises**.

An initial training session on safety and prevention is also given to each member of the supervisory staff by the company's QHSE (Quality Health Safety Environment) Department. In addition, executives and supervisors already working with us also have access to regular professional development modules to keep up to speed on regulatory and technical subjects.



Training

Encouraging professional insertion

The **SOPREMA** Group is also involved in training apprentices and job seekers in the waterproofing and cladding trade. Passing on technical knowledge goes hand in hand with practical exercises to facilitate adoption of the correct procedures in line with safety rules.

Initial training

CAP (vocational training diploma) in "waterproofing in building and public works" for apprentices (2 years)

In partnership with the region, Grand Est, in France, vocational training of 210 hours per annum is given by the instructors at our internal training centre, while general training is handled by the Le Corbusier Apprentice Training Centre (CFA) in Illkirch (Alsace). Since it was founded in 2005, 99 apprentices have taken the final exam with a pass rate of 94%!

Continuing education

Course on "becoming a waterproofing and cladding specialist" (6 months)

Listed in the RNCP (French National Directory of Vocational Certification), it provides training leading to level V qualification.

Professional Training Contract

Training in waterproofing and cladding work

In partnership with the GEIQs (groups of employers working to help young people to find jobs and gain qualifications) in building and public works in France, this training rests on a one-year sandwich course between the training centre (10 x 35 hours) and a building site in industry. Since 2009, more than 170 job seekers have benefited from the professional certification.

To complement these training actions, technical assistance to help with setting up a building site can also be given by instructors from the centre on request.



A "CERTIBAT professional training" certified training centre



10

instructors at the training centre in Strasbourg

1,000

people trained per annum in France

30,000

hours of training given per annum in France

¹ WissenWerk training centre - Hof (Germany).

² Architects' seminar - Darmstadt (Germany).



Céline Babin
Agency Director
SOPREMA Entreprises Pau

Encouraging insertion alongside GEIQs*

For the third year running, the **SOPREMA Entreprises** agencies in Pau, Toulouse and Bordeaux (France) are joining forces with the regional GEIQs* to promote the professional reinsertion of job seekers and vulnerable individuals. This collaboration takes the form of professional training contracts. The dozen or so interns selected are trained over a one-year period (350 hours) in the trade of waterproofing specialist at the rate one week of instruction to three weeks in the field. *"In terms of their profile, human criteria - motivation and the desire to work out of doors - are the values given priority in making our choice"*, explains Céline Babin, Director of the Pau Agency.

A win-win initiative: apprenticeship in a trade and the possibility of the interns being offered a job. And for **SOPREMA Entreprises**, these professional training contracts are a good way to recruit qualified, motivated staff familiar with the standards of the Group. A great success, as all of the qualified interns were hired!

*(Group of employers working to help young people to find jobs and gain qualifications)



Philippe Barchy
Head of Sector
SOPREMA Entreprises
Reims Agency

Sharing ideas to improve efficiency

For **SOPREMA Entreprises**, the recognition, the appropriate use and the passing on of know-how at the agencies is a priority. In Reims (France), for example, a training initiative has been set up so that the most

experienced members of staff can share their experience with the more junior members. The 38 tradesmen in the sector may put in a request at any time to be given assistance and advice on correctly performing a technical process, an update on the regulations, etc. Philippe Barchy, head of the sector, then identifies the most appropriate in-house instructor and establishes a training plan of a duration suited to each need (refresher courses, upgrades, etc.). Conversely, supervisory staff may also suggest certain training courses for the tradesmen if they consider it necessary.

At the end of each session, the trainee and his or her instructor find themselves with Philippe Barchy to take stock of what they have learned. *"It's really helpful. The tradesmen gain confidence in their abilities and become more effective and more independent. They occasionally also put us in our place on certain processes. This two-way exchange helps to improve performance and boost our professionalism when dealing with customers"*.





Training



Rodolphe Lefèvre
Assistant Director
SOPREMA Entreprises

Sandwich courses, a talent pool

The sandwich course has gradually become part of and developed within **SOPREMA Entreprises'** corporate culture in France. A way for students to discover the building envelope sector from the inside and for the Group to meet its recruitment needs, with the help of motivated, well-trained staff. To complement the programmes that already exist, the company is to venture into the sandwich training of students who have graduated from secondary school and hold a 3-year advanced technician diploma (BTS) in building envelopes or a university technology degree (DUT) in civil engineering. The Reims Agency is actively putting together the first degree in envelope engineering in partnership with two other local players in the building industry and a secondary school in the region. The courses will discuss all aspects of the trade: site organisation, safety and security, BIM, etc. For one year, **SOPREMA Entreprises** will host three of the fifteen students from the first batch, which will begin in September 2020. The aim is to train these young people in the various skillsets needed by **SOPREMA Entreprises**: works management as well as surveying, pricing, etc.

"There is no one option when it comes to sandwich courses. The idea is to set up custom schemes throughout the region according to need and in tandem with players in the area. For this to work, it is also necessary to identify the right partner schools and colleges", explains Rodolphe Lefèvre, Assistance General Director **SOPREMA Entreprises**.

Win-win mentoring



Within the framework of the sandwich training course on "works management" initiated with the CESI* in Strasbourg (France) in 2016*, **SOPREMA Entreprises** has set up a mentoring system. The aim? To assist and advise students in their skills acquisition process. During their 2-year course, these young people spend one week in classes and three weeks at one of the Group's construction agencies where a mentor takes them under his or her wing. With each passing day, this mentor passes on his or her knowledge, the basics of the trade and the Group's standards. It's a win-win system: the students, who quickly become aware of their responsibilities, benefit from on-the-job advice, learn about realities in the field and may be given the chance of a job within the Group on completion of their studies. For its part, **SOPREMA Entreprises** can count on its future members of staff, people it already knows, being well trained! The recipe is working because, since 2016, almost all of the graduate interns have been hired!

1 Back to classes for the 3rd batch of students from the CESI.

* Advanced education and vocational training campus.

Raising the awareness of architects



The **SOPREMA** Group in Germany offers dedicated seminars and workshops for architects on the building sector's key themes and issues: responsible construction, standards and regulations, etc. Last year, 660 architects attended these events held in six cities (Berlin, Cologne, Bremen, Leipzig, Stuttgart, Wiesbaden), and 740 in 2019 in Darmstadt, Einbeck, Gelsenkirchen, Hamburg, Munich and Böblingen.

In Canada, the Group has also taken the same initiative and regularly organises "lunch & learn" events targeting architects: insulation, waterproofing, civil engineering, protection of concrete, certification, green roof systems, etc. are the subjects discussed.

Always on the look-out for future talent, the Canadian subsidiary does not hesitate to support architecture students when organising architectural design competitions. In 2019, more than 14 grants were awarded at four major schools of architecture in Canada.

¹ Demonstration at the WissenWerk training centre - Hof (Germany).



Support extended to Universities

R&D: Creating a dynamic based on building materials



As the development of knowledge is the basis of innovation, **SOPREMA** has been forging R&D partnerships with several organisations over a number of years. This collaboration focuses on original research projects of interest both to the Group and to the scientific community as a whole. For instance, at the end of 2017 **SOPREMA** set up a joint research laboratory with Strasbourg University. Dubbed **Mutaxio**, this laboratory works on the shift from petroleum-based products to bio-sourced materials to produce a sustainable building. In Quebec, the Group has been collaborating with **Oleotek**, a specialist in green chemistry, for more than 10 years. This exchange has already resulted in the marketing of a construction adhesive formulated from bio-sourced materials. The partnership continues today on the proper exploitation of the biomass.

Participating in student training

Convinced of the importance of investing in training future generations, the Group welcomes trainees to its various sites throughout the world. Thanks to this long-established initiative, **SOPREMA** helps to pass on its expertise and know-how to tomorrow's building professionals, some of whom are also our future colleagues.

Funding training and research programmes

SOPREMA has also developed a number of corporate patronage deals, particularly with Strasbourg University (France), to which it made a donation of 2.3 million Euros in 2013, the largest donation ever made by an industrial concern to a French university. It is a capitalised donation, the interest from which is used to fund several projects: training in industrial design, studies on the Asian Tiger mosquito and its potential effects on terrace roofs, etc. **SOPREMA** has also signed a patronage agreement worth one million dollars with the University of Quebec at Trois-Rivières. This subsidy will be used to advance research on possible new uses for wood in the building sector.



Donation of

2.3 million €

to the Strasbourg University Foundation (France)

Donation of

1 million \$

for the construction of the campus of the University of Quebec at Trois-Rivières in Drummondville, Canada

10 R&D projects

pending with several universities.

Support from

4 major Canadian universities

Laval University (Quebec, QC)

Waterloo University (Waterloo, ON)

Laurentian University (Sudbury, ON)

University of Toronto (Toronto, ON)

14 Study grants

have been awarded to students.





Circular economy

For the **SOPREMA** Group, the circular economy is an indisputable fact. Our raw materials are therefore sourced increasingly in the circular economy. Sorting and reusing or recycling waste would appear to be an essential strategic shift in continuing to devise more environmentally friendly solutions, which are rooted firmly in the cradle to cradle philosophy. We are developing this know-how for ourselves, **SOPREMA**, but also to be able to offer our future customers more responsible across-the-board advice and assistance to foster better energy performance and reduce waste at source.



Recycling

Innovation and Research

Fossil resources are becoming increasingly scarce and will one day run out altogether. Climate change is accelerating and biodiversity is in free fall. Which is why **SOPREMA**, a responsible industrial concern and precursor, has always sought to develop its range with responsible new systems and solutions. Our objective today: to replace 65% of our petroleum-based raw materials with eco-sourced materials from recycling or the biomass.

Eco-design is therefore the key to developing our product range. Our various research & development centres work actively to that end each and every day. Discover a few examples of bio-sourced solutions!

Bitumen-free waterproofing membrane

An initial launch in December 2013: **Mammouth® Néo**. This product marked the successful completion of 10 years of R&D. A patent was registered, establishing the bases for the first waterproofing membrane made using thermoplastic polyurethane (TPU), more than 75% of which was made of rapeseed oil. This waterproofing system is suitable for inaccessible terrace roofs. With the **Mammouth® Néo** system, the quantity of non-renewable raw materials used to render 1 m² of roof waterproof was halved in comparison with conventional systems.



Waterproofing membrane made from wood by-products.

The first roof based on this eco-designed product was fitted in 2015. Industrial production of this bitumen-free membrane technology is continuing.

Wood fibre-based insulation materials

Manufactured with high quality woods from a stand certified sustainable, **Pavatex®** insulation materials use a bio-sourced raw material. Suitable for External Thermal Insulation systems (ETI) and Internal Thermal Insulation systems (ITI), usable on roofs and façades, these insulation materials possess high acoustic and dephasing qualities and therefore contribute to improving comfort in the summer months. While enhancing airtightness, they also allow the circulation of vapour. They thus guarantee a particularly healthy and balanced indoor climate.



More than

90,000 t

of wood was used in 2018
for thermal insulation products

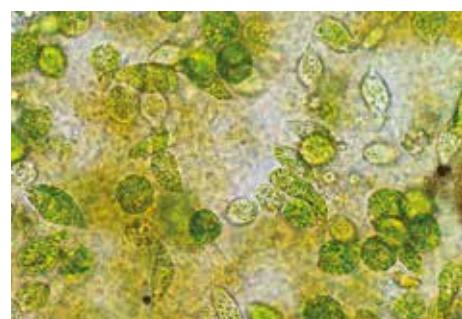
More than

15 patents

filed on eco-sourced materials

Micro-algae oils converted into polyurethane foam insulation.

At our shared **Mutaxio** laboratory, **SOPREMA's** R&D teams in Strasbourg (France), in tandem with teams from the CNRS, the School of Chemistry and Materials Science and Strasbourg University have developed the first micro-algae petroleum-based thermal insulation foam!



Industrial Ecology

When businesses work together to protect the environment.

As one company's waste can become another's raw material, Industrial and territorial ecology are of growing interest to industrial concerns. Driving the ecological transition, it is realised by "the voluntary pooling of resources by economic players in a territory with a view to saving them or improving their productivity: sharing infrastructure, equipment, services, materials, etc."*. Preferring short supply circuits, it becomes part of the "reduce, reuse, recycle" initiative of the circular economy.

The KEYS to Success



With its 320 firms representing 120,000 jobs, the Autonomous Port of Strasbourg (PAS) in France is the leading industrial estate in the Grand Est region. Since 2013, the PAS has been committed to a policy of industrial ecology, which has been dubbed CLES (meaning KEYS but standing for Local and Environmental Cooperation in Synergy). At the time of writing, it is endorsed by 28 firms operating at the port, including the **SOPREMA** Group, which was present at the launch of the policy. Their shared ambition: to enhance the attractiveness of the PAS, develop synergies and alleviate its environmental impact. Together, the firms find innovative solutions to pool access to materials and process waste. At the time of writing, 11 forms of synergy have already been implemented, covering various fields: waste, group purchasing, mobilities, training, etc.

Synergies also exist elsewhere in the Group. For instance, the industrial site at Golbey in the Vosges, located at the very heart of a Green Valley, pools energy by-product networks. Energy by-products are the energy for a system (e.g. a process) which is lost but can be recovered and/or reused in the interests of another system (e.g. a dwelling). Wood fibre panels manufactured at this site can thus take advantage of an ideal local energy.

In Germany, the Hof site shares a wind farm with its neighbours, significantly increasing its percentage of renewable energy consumption.

¹ Rhine Port - Strasbourg (France).

*Definition of the French Ministry for the Ecological and Inclusive Transition.



Giving waste a second life

Industrial waste recovery and recycling

Limiting landfill waste to the minimum is an integral part of the roadmap for the circular economy and the Group's environmental strategy. Which is why, at **SOPREMA**, our short-term objective is to step up any and all actions already implemented within the framework of our various certifications and to sort our waste, which is part and parcel of our corporate culture. We have therefore decided to measure the waste generated by the Group's various sites to enable us to run our ambitious progress objectives using specific indicators. Concrete actions are already up and running, particularly on the "5-flow" waste management process: paper/cardboard, metal, plastic, glass, wood. In our thinking on development, we also work to reduce the production of waste. Close-up on 4 innovations: **Sopraloop®**, **X Loop**, **X Crusher** and **EcoSlops**.

Sopraloop®, an innovative PET recycling line

In July 2019, the Group introduced a unit in the Strasbourg port area in France to produce raw materials from recycled trays made of PET (Polyethylene Terephthalate). Thanks to **Sopraloop®**, all post-consumer plastic packaging units (PET), such as single-layer and multi-layer trays or opaque bottles, get a second life. After mechanical and chemical recycling, this waste is converted into polyols and then used to manufacture insulating foam, which is much sought after in the building industry. Supported by **ADEME** and **CITEO**, this innovative recycling line, which is a world first, has also received the endorsement of the "Efficient Solutions" label issued by the **Solar Impulse** Foundation. This quality label is awarded to innovations that reconcile environmental protection and economic profitability. The fruit of 5 years' work, scientific partnerships and an investment of 7 million Euros, **Sopraloop®** aims to process up to 3,000 tonnes of complex PET packaging units in its first year, generating more than 5,000 tonnes of eco-sourced polyols.



1 Sopraloop® - Bales of PET which are "ODR" (Opaque and Difficult to Recycle). © 128 dB.

2 Sopraloop® - Shredding of PET. © 128 dB.

3 & 4 Sopraloop® - Chemical Recycling Unit. © 128 dB.

5 Sopraloop® - Sieving PET. © 128 dB.





Industrial Ecology

X Crusher and X Loop: solutions for bituminous membrane waste



1

These two projects were conducted in tandem in order to develop the recycling of waste from bituminous membranes. Such waste may come straight from production, but it can also be generated by construction/deconstruction sites. **X Crusher**, which focuses on waste from production or from new products, is a process based on an electromagnetic shockwave technique, which deconstructs the materials. One of the possible uses is the recycling of bituminous and PVC waterproofing membranes in which their components are separated out. **X Loop** is a complementary technique, on the other hand, based on shredding and filtering building site waste and end-of-life products in order to recycle them. Pilot projects based on the **X Crusher** and **X Loop** solutions have been scheduled for 2020 before being scaled up for use in industry. The objective which has been set is to eventually process one tonne per hour, or nearly 3,000 to 4,000 tonnes per annum per Group industrial unit.

Ecoslops: Recycling and reusing petroleum-based waste



2

Ecoslops is a French start-up which adds petroleum to the principle of the circular economy. Indeed, it has developed a solution for recycling the slops and sludges from maritime transport formed by salt water from ships. According to the regulations, these slops and sludges must be processed in the ports but, up to now, there has been no solution for recycling such waste water. Thanks to the micro-distillation technology used by **Ecoslops**, these petroleum-based residues are refined to produce marine diesel. This process generates heavy hydrocarbons which are recycled into light bitumen (XFO) used by **SOPREMA**. XFO presents with very good technical specifications for waterproofing and insulation coatings and **SOPREMA** consumes more than 8,000 tonnes of these every year. After an initial production unit in Sinés in Portugal, **Ecoslops** will shortly be opening new plants in Fos-sur-Mer and Antwerp.

1 Project 3D at the X Crusher site.

2 Photo.

Sorting and recycling office waste

The majority of **SOPREMA's** Canadian sites have procedures in place for collecting office waste. Plastic, metals, paper, cardboard, ink cartridges and coffee capsules are recycled. As for any organic matter, this is composted for the site in Drummondville (Canada). Several other sites recycle or reuse paper and cardboard to supply the **Sopra-Cellulose** insulation plant in Sainte-Julie (Canada).



Thierry Dursent
QHSE Manager
SOPREMA Entreprises
Reims Agency

Managing building site waste: limit, sort, recover & recycle

In Reims in France, the **SOPREMA Entreprises** Construction Agency has been involved for a number of years in an

initiative to reduce its volume of waste and encourage recovery/recycling. *"Waste management is part and parcel of a process that ranges from layout plan to sorting by our tradesmen and -women"*, explains Thierry Dursent, the Agency's QHSE Manager. During the building site phase, the tradesmen and -women reuse any waste materials as much as possible. The remaining waste (cardboard, paper, scrap metal, plastic,

insulation, bitumen, etc.) is then sorted at source on site into dedicated skips. These are then collected and their contents recovered or recycled. For example, the Agency's bitumen residues are shredded to be reincorporated into asphalt for roads or reused in the manufacture of new waterproofing rolls. Out of the 500 tonnes of waste produced by the Reims Agency in 2018, 42% was recovered and recycled.



1 Selective sorting.





Building tomorrow

SOPREMA has always been careful to limit the impact of its activities and products on the environment and people. One more commitment which is part of its DNA and its corporate culture. Confident in its expertise in responsible building envelopes, the Group offers a range of solutions to address the issues of sustainable construction and energy efficiency. Fully aware of the constant population growth in urban environments, the **SOPREMA** Group offers any number of practical solutions (systems, products, installation, etc.) to help to develop a more responsible, more liveable and, generally, more harmonious city.



Recycled and Recyclable Materials

Nothing goes to waste, everything is transformed

Waste produced today constitutes the resources of tomorrow. In 2019, **SOPREMA** used more than 200,000 tonnes of raw materials sourced in the circular economy.

Polyols for foam insulation

Sopraloop®, a new recycling plant that started up in 2019, converts opaque PET packaging materials into polyols for the manufacture of foam insulation intended for the French and German plants.



Membrane reinforcements, made from 75% recycled plastic bottles or recycled glass fibre, have been used widely in the manufacture of our bituminous membranes for a number of years.

Recycled PET is used to manufacture geotextiles and reinforcements (Spain).

Newsprint converted into cellulose wadding.

This recycled material is used to manufacture the **Univercell®** solution in France and the **Sopra-Cellulose®** solution in Canada. This very efficient thermoacoustic insulation material is suitable for unusable loft space and vertical partitions. It comes in the form of bulk cellulose fibres, obtained from sorted and shredded recycled paper treated to resist fire and fungal development.



Insulation in cellulose fibres composed of 85% newsprint and cardboard in Sainte-Julie (Canada).

Recycled polystyrene boxes

After first being sorted, they are processed into granules which are then incorporated in the manufacture of insulation materials (Spain, Italy).



Paul Oliveira
General Manager
SOPREMA Southern Europe

New insulation materials designed using recycled polystyrene packaging Milan (Italy)

"Our aim is to incorporate more than 25% in recycled materials that we recover to manufacture our products", points out Paul Oliveira, General Manager Southern Europe.

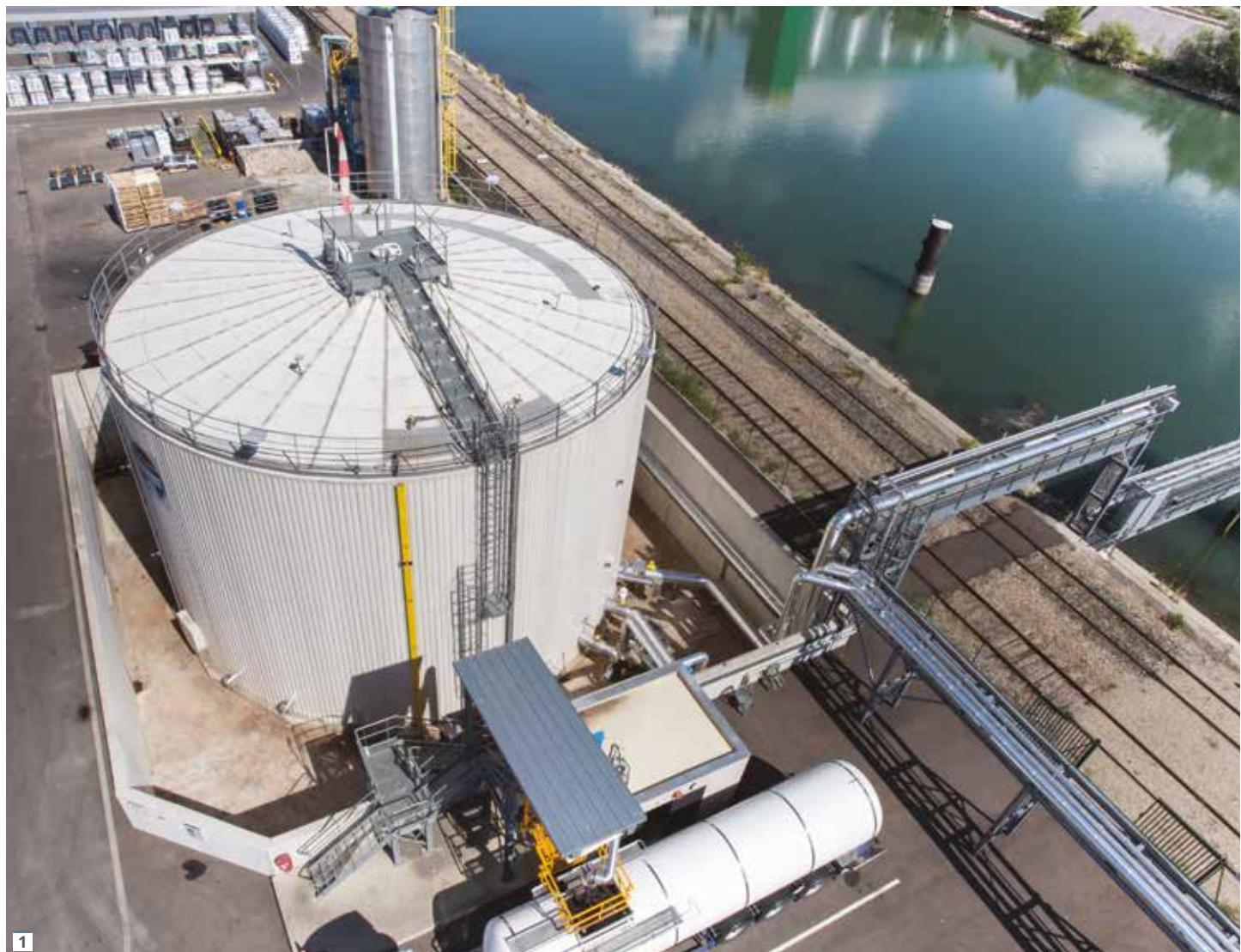
Insulation panels in extruded polyester made from recycled materials, manufactured at a plant in Sherbrooke (Canada) aiming for zero waste.

The manufacturing process is designed to reduce losses to a minimum and prevent waste. Any leftover offcuts and even non-conforming panels are fed back into the manufacturing process.

Sound-proofing products composed of recycled tyres in Drummondville (Canada).

SOPREMA sets a course with Calypso

At the beginning of 2013, the **SOPREMA** Group modified the supply of hot bitumen at its Strasbourg site in France owing to the closure of the Reichstett refinery, which had been the site's historic supplier. This alternative mode of transport by river, efficient and environmentally friendly, helped to reduce greenhouse gas emissions (GGE) by 40%, with 1,200 trucks per annum fewer on the roads of greater Strasbourg.



Use and recovery of recycled materials

Adexsi, a subsidiary that specialises in fire safety, natural smoke extraction and energy management (overhead lighting, natural ventilation, cooling of buildings, etc.), incorporates various recycled materials in its products, in particular. Aluminium, which has the advantage of being recyclable ad infinitum. Therefore, **Adexsi** uses aluminium in its products that already contains 20% recycled aluminium from the outset. Along the same lines, recycled aluminium is used for pneumatic cylinders and recycled plastic for manufacturing alveolar polycarbonate. Any offcuts from these materials on the assembly line are then rerouted to a recycling line which reincorporates them entirely for its own purposes, according to the principles of the circular economy.

1 Calypso - Strasbourg.

Creating a Sustainable Industry

Irrespective of the production site, the **SOPREMA** Group's objective is to use more and more renewable energies as alternatives to petroleum-based energies (also called "conventional energies").

Biomass



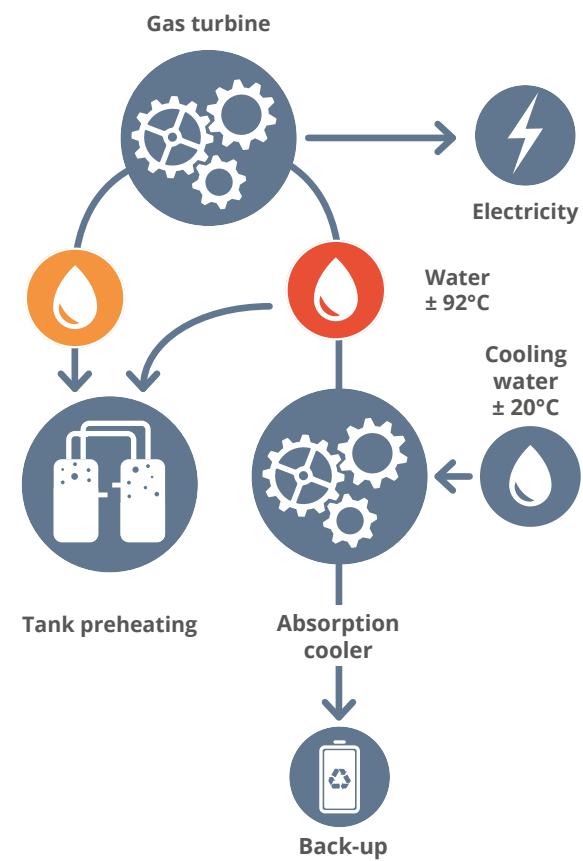
The plant in Alpiarça in western Portugal uses a boiler that is fired by biomass as a replacement for natural gas. The energy is used to heat up oil (heat-transfer fluid) in order to keep bitumen hot, at a temperature ranging from 180 to 200°C. The boiler burns pellets (wood waste) and will soon also use olive stones and grape seeds. The replication of this technology at other sites is being studied.

Moving towards energy independence

Conversion of the sites to renewable energies is being done progressively according to their location and the maturity of their technologies. Biomass gasification, for example, is still at the experimental stage but it will subsequently be deployed at other industrial sites. *"Through these solutions, what is at stake for **SOPREMA** is to free itself from non-renewable energies and respect its ecosystem to build tomorrow's industry"*, says François China, Sourcing & Recycling Director.

Trigeneration

To reduce its greenhouse gas emissions (GGE) and control its spending on energy more efficiently, the Italian site of Chignolo (synthetic membrane production) has put a trigeneration process in place. The principle: to run a turbine on natural gas, produce electricity and heat/cool water. An initiative which has resulted in a 30% energy saving.



¹ SOPREMA plant - Alpiarça (Portugal).

Hof, a German plant with a smaller carbon footprint



Specialised in the production of bituminous membranes and polyurethane insulation, the German plant in Hof relies on self-generated alternative energies, such as water, the sun and the wind to cover one third of its needs. Its energy concept relies essentially on the production of electricity from renewable sources.

Enhanced by the layout of the site and the weather conditions, an innovative hydraulic energy production system unique in Germany has been installed. A water retention basin containing one million litres is used to cool the production boilers.

The installation of 7,000 m² of photovoltaic panels on two of the factory's roofs enables the site to produce 1,000 MWh from solar energy. This installation makes a significant contribution to supplying the site's electricity and emits zero CO₂. These savings on emissions amount to 350 tonnes per annum.

In addition, two 70 m wind turbines, situated in the immediate vicinity of the factory, provide more than 1,200 MWh of electrical energy. This energy corresponds to being able to power the consumption of the equivalent of approximately 1,000 households.

A system of active carbon filters is located in production and unloading. It eliminates more than 95% of sulphur particles, retains pollutant particles and gets rid of odour emissions.

30%
self-generation



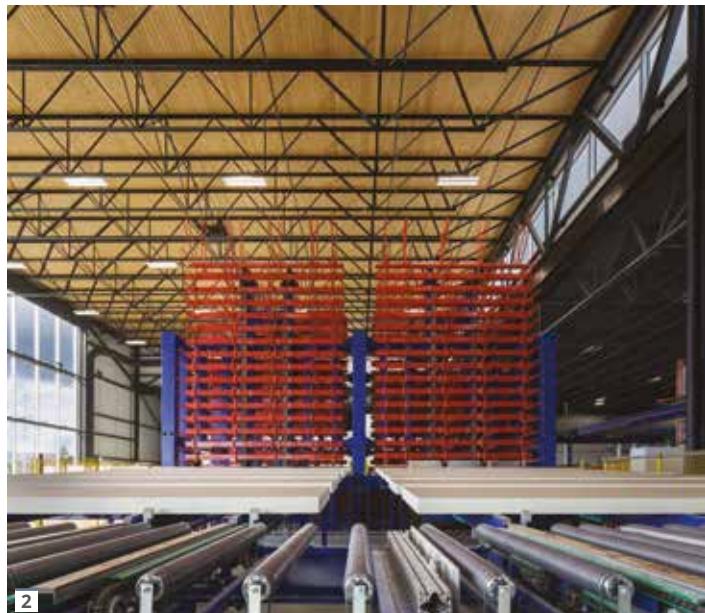
2 wind turbines
which generate
more than
1,200 MWh per annum

7,000 m²
of solar panels on the roof
of the factory generating
more than 1,000 MWh



Polyisocyanurate plant, Drummondville (Canada)

The plant that manufactures polyisocyanurate insulation panels in Drummondville (Canada) is seeking Leadership in Energy and Environmental Design (LEED^{MD}) certification, i.e. a high level of recognition rarely sought for industrial type buildings. The measures taken to encourage energy efficiency are numerous: reflective roof, high quality insulation, thermographic analysis and infiltrometry, passive solar wall, heat recovery system, 11 fully electric forklift trucks, 4 electric vehicle charging stations, etc.



Building a Sustainable City

The Future is Now

The building is the primary energy expenditure item and accounts for 27% of greenhouse gas emissions (GGE) in France*. Worldwide, this figure rises to 30%**. Aware of the environmental issues, which will be stepped up considerably in the coming years, particularly in terms of regulations, **SOPREMA** has drafted an initiative, "The Future is Now", that focuses on sustainable and responsible solutions and behaviours. Rethinking the future of the building is therefore one of the Group's priorities.

The building of the future will be functional and more in line with the expectations of users. Making the occupants of a dwelling, an office or a social space more comfortable is one objective that **SOPREMA** has set for itself. How? By developing top level insulation and waterproofing solutions, by installing energy production systems that enable self-sufficiency, or even redistributing them throughout a neighbourhood, by bringing greenery to the rooftops, by exploiting the 5th façade, by optimising the provision of natural lighting, by providing shade solutions on rooftops and façades, etc. All of these solutions are enumerated in the responsible building guide published by **SOPREMA**.

Thinking long term

Comfort is one thing. But it still has to be provided by sustainable amenities designed using efficient materials, which can be easily installed by all of the stakeholders involved and are accessible to everyone. **SOPREMA** is therefore hard at work developing partnerships with the various building trades and leading industrial partners (cavass, second fix, equipment, services etc.) to transform the entire value chain and guarantee the sustainability of a building or renovation as early as the design stage. Right up to upkeep and maintenance: designing buildings using recyclable materials will be the big issue in the coming years. The objective? To make the most of a property for as long as possible and anticipate its second life.



François Do Cabo
National Manager **Soprassistance®**

Soprassistance®, guaranteeing the sustainability of roofs and cladding

Complementary to its manufacturing business and installing waterproofing products, **SOPREMA Entreprises** created the **Soprassistance®** brand in France in 2000 to handle the maintenance and upkeep of terrace roofs and façade claddings. Now present at 40 sites, this service is incorporated in each agency. These agencies manage emergency interventions (leaks, break-ins, frost-damaged cladding, etc.) and complementary work (creation of additional air conditioning, for example) to keep up with the development of the buildings. Upkeep operations maintain the validity of the legal 10-year guarantee.

Carried out in the form of a one-off intervention or inserted as part of a multi-annual contract, a **Soprassistance®** upkeep operation is based on preventive maintenance and the drafting of a detailed technical diagnosis of the condition of the terrace roofs. *"Our work is not limited to a straightforward cleaning and repair job, we have a duty to provide advice on managing the estate. Because a well-maintained roof can last as long as 30 years, we do everything in our power to guarantee its durability"*, insists François Do Cabo, **Soprassistance®** Manager.

Qualicert SGS certified, the firm undertakes to abide by a rigorous set of quality procedures, particularly in terms of intervention lead time. It also establishes a training and mentoring system to encourage the continuous improvement of the skills of its staff.



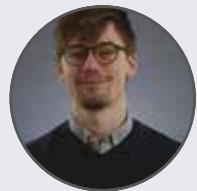
1 Intervention by Soprassistance®. © Alex Méaux.

*Immo2pro. **Unissu.



Building a Sustainable City

Reducing the impact of buildings



Pierre-André Lebeuf
Project Manager - Sustainable Development
SOPREMA Canada

Considering life cycle thinking to drive progress

A great deal of progress is made when it comes to SOPREMA's take on sustainable development in Canada. Our ambition, already firmly established through the range of products we offer, has resulted in the adoption of a 360° outlook that takes in any and all issues that impinge on product life cycle.

We have also applied this same thinking to the design of our new waterproofing membrane plant in Woodstock (ON), a building which is also seeking LEED v4 certification. This wish has influenced the choice of products and materials. The results have even been showcased at symposiums on sustainable architecture. An interesting initiative to be added to our major contribution to the Canada Green Building Council (CaGBC).

Based on the precepts of the circular economy and in keeping with the Group's general approach, the new directions taken by **SOPREMA** in Canada encompass the issues of environmental protection, climate change and human well-being that revolve around the building industry.

Even though we only put the seal of approval on this shift in January 2019, we have had several successes and pulled off a number of great coups at our various sites in Canada. But before we got there, we are proud to say that more than 17% of employees voluntarily participated in one of the 28 workshops held to draft our sustainable development policy,

a total of 113 participants therefore. Moreover, more than 76% of employees took part in one of the 49 presentations on sustainable development policy, i.e. 465 participants in that same year. And it goes on!

Their participation, added to the various campaigns we ran, mean that we have a high level of commitment among our employees. The combined averages obtained in a recent poll show that the employees take a favourable view of sustainable development at **SOPREMA** (3.95/5) and reveal a high level of commitment to it (4.02/5).



3D view of the future SOPREMA membrane plant - Woodstock (Canada).

Reducing pollution in urban areas

Inspired by the power of trees, ECO₃ granule-surfaced membranes by **SOPREMA** are the result of a unique collaboration between 3M and **SOPREMA** on shallow-sloped roofs. This roofing granule, designed with a specialised photocatalytic coating applied to the mineral, absorbs the nitrogen oxide gases (NO_x) in the atmosphere, which are then cleaned and washed by rain water. This process reduces the quantity of pollutant at ground level, which help to lessen the greenhouse effect and encourage the creation of healthier communities.





Dominique Dhier
General Manager of S.M.B.



Jean-Michel Huez
General Manager, Charpentes Fournier

Wood and steel, materials which have a low impact on the environment

For a more responsible building, **SOPREMA Entreprises** prefers to use sustainable frames in wood or steel. Steel is a material that can be renewed ad infinitum, i.e. it can be reused without losing any of its properties and qualities. The steel recovery sector is by no means new: building firms had already established a system of recycling as early as the 19th century. *"Today, 95% of the metal girders that we use come from recovery and we have enough raw materials to cover all future needs"*, stresses Dominique Dhier, General Manager of S.M.B., a subsidiary that specialises in metal frames.

Moreover, steel has a considerable load-bearing capacity (especially in comparison to concrete). *"So it can bear significant loads, which makes it a material ideally suited to the installation of green roof systems"*.

As for wood, it also has its advantages in terms of environmental friendliness. Glued-laminated timber is one of the few renewable building materials. Its production is also an integral part of a responsible approach, as practised by Charpentes Fournier, a recent addition to the **SOPREMA** Group. *"When our suppliers fell one tree, another two are planted in its place. Sustainable forest management lies at the heart of our concerns: we only use wood which is eco-certified (PEFC* and FSC**)"*, insists Jean-Michel Huez, its General Manager. Wood is advantageous in terms of its carbon footprint: 1 m³ of living wood absorbs approximately 1 tonne of CO₂ to 1.1 tonne of oxygen output. Once the wood has been cut, it stocks the CO₂ it has absorbed (unless it's burned).



1 Charpentes Fournier workshop. **2** Workshop, SMB metal constructions.



Building a Sustainable City



Emmanuel de Sury
Agency Director
SOPREMA Entreprises, Rennes

Co-constructing energy performance: The example of the Rennes Agency

As of the preliminary design phase of the new agency for **SOPREMA Entreprises** in Rennes, the stakeholders worked on alleviating its impact on the environment: the architect, the design and thermal engineering consultants, and **SOPREMA**, acting in this instance as owner, client, user and building firm all at the same time. *"As soon as the architect outlined an idea, the design and engineering consultant suggested adaptations to optimise energy performance and the company confirmed its technical feasibility: we all moved forward together as one"*, explains Emmanuel de Sury, Director of the Agency. The orientation of the building, the positioning of the offices, the corridors, etc. and the technical rooms, among other requirements, emerged from these discussions.

Implementing a range of solutions

Airtightness and insulation were given priority at this site, ensuring it was low on energy consumption. Its envelope, for example, is fitted with a **Sopratec® III** membrane, a rainscreen with High Vapour Permeability (HVP), designed especially to guarantee the airtightness of the wall structures. *"Our agency has a Q4 airtightness coefficient of $0.14 \text{ m}^3/\text{m}^2 \cdot \text{h}$, more than 10 times better than what is required for tertiary buildings ($1.7 \text{ m}^3/\text{m}^2 \cdot \text{h}$)"*, points out Emmanuel de Sury. A green terrace, dual flow ventilation, adjustable sunshades and presence and light level sensors to manage lighting and heating, all managed by an automated control system, which also makes it possible



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to reduce electricity consumption. The roof is fitted with photovoltaic panels producing 130% of the energy consumed by the building for primary needs (lighting, heating and ventilation). *"The energy balance is therefore very comfortably positive".*

With meters to back it up, the prototype Rennes Agency provides proof of the efficiency of our solutions, which combine heating comfort for the user and environmentally friendly performance!

_1 _2 & _3 SOPREMA Entreprises, Rennes Agency. © Atypix.





Building a Sustainable City

Positive Energy: demonstration buildings throughout France

Committed to the sustainable building, the **SOPREMA** Group employs its technical solutions for its own buildings. At the time of writing, five so-called "demonstration" sites for office use have been built in France: in Brest, Poitiers, Montpellier, Rennes and Lyons. More than just a shop window for the Group's know-how, these agencies provide proof, each and every day, of the efficacy of our products in optimising the overall performance of the frame.

In 2011, the Rennes Agency, for example, became the first metal-framed positive energy building in France. New agencies are currently being built or are at the planning stage. They will use the Best Available Techniques (BAT), including sustainable solutions from **SOPREMA**.





Philippe Fritzinger
General Manager
Adexsi

Natural solutions for energy management

Specialised in natural lighting and ventilation and cooling in buildings, **Adexsi**, a subsidiary of the Group, is committed to providing more sustainable buildings on a daily basis.

Adexsi thus offers a range of solutions that favour natural lighting (skylights and light pipes to provide overhead lighting in dark rooms, intelligent sunshades, etc.), designed based on weather simulations according to geographical area. These are at once synonymous with energy savings - as they consume less energy than artificial lighting - and user comfort. With the recent acquisition of Tellier-Brise Soleil, **Adexsi** adds further expertise to façade shading.

In terms of ventilation, the firm endeavours to improve indoor air quality with intelligent systems that enable windows, for example, to open automatically, the parameters of which are set according to outdoor and indoor temperature, wind, hygrometry, etc. These solutions, used widely in school buildings, help to reduce greenhouse gas emissions (GGE) by 70%, on a like-for-like basis. In the field of air conditioning, adiabatic cooling, which works by evaporation, makes it possible to guarantee an indoor temperature 7 degrees lower than the outdoor temperature in a natural way and with very low energy consumption.

"We have recently decided to go even further by creating GENATIS, a new brand that encapsulates all of our expertise in the management of natural energies: intelligent control, thermal comfort, light comfort, mechanical ventilation. A range of solutions that optimises building use and efficiently addresses environmental issues", points out Philippe Fritzinger, General Manager.



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Producing sustainable electricity with solar power

Think photovoltaic!

The **SOPREMA** Group develops photovoltaic solutions able to produce electricity from a renewable source, reduce the use of fossil energies and improve the energy balance, whether for its customers or at its own sites.

For more than 10 years, **SOPREMA**, through its subsidiary, **Soprasolar®**, has been converting terrace roofs into renewable electricity production stations thanks, for example, to the installation of photovoltaic panels. At sites with a large surface area, particularly its factories and logistics platforms, the electricity produced is therefore used to cover the energy needs of the buildings and inject the surplus back into the grid.

Ever vigilant to the carbon impact of its activities, the Group undertakes to fill in an Environmental and Sanitary Declaration Form (FDES) for each project. The **Soprasolar® Fix Evo** photovoltaic waterproofing process is subject to a specific FDES.

Photovoltaic panels on the roofs of SOPREMA sites

12 SOPREMA sites

are fitted with a solar power station:
6 Construction Agencies, **3** plants in France,
1 in Italy, **1** in Germany and, coming soon,
1 in Portugal.



1 SOPREMA Entreprises Agency Montpellier. © Alain Photo. **2** SOPREMA Plant - Val-De-Reuil (France).

Solar power, energy control leverage

With the cost of photovoltaic electricity falling and the purchase price of electricity rising, choosing solar power is a no-brainer. **SOPREMA** is thus able to help the owners of buildings to take advantage of this technology to reduce their environmental footprint and their energy bills.

100 GWh
of renewable electricity produced each year with **Soprasolar®** solutions.
This is the equivalent of powering
22,000 households,
or approximately
80,000 people





French Quality Labels

Solar Impulse



Bringing together a thousand solutions to combat climate change. That's the goal of Bertrand Piccard, Swiss adventurer and inventor, with his Solar Impulse Foundation and the **"Solar Impulse Efficient Solutions"** quality label. Three criteria are taken into account before it is awarded: the technological feasibility of the solution, the environmental and socio-economic advantages that it brings and its profitability.

The **SOPREMA** Group has been awarded this quality label for 6 of its innovations:

- The construction system dedicated to light structures for low-consumption buildings, which delivers exceptional performances on envelope quality, whether for insulation without thermal bridging or permeability to air.
- **Sopraloop®**, the PET packaging recycling unit created by the Group.
- The recycling technology by pulse power developed by the start-up, **XCrusher**.
- **SopraStar Flam®**, Cool Roof waterproofing.
- **Soprasolar®**, solar waterproofing.
- **Skywater®**, rainwater management on flat roofs.

PEFC Quality Label with PAVATEX®



SOPREMA is an advocate of the PEFC sustainable forest management system. Its **Pavatex®** range bears the PEFC quality label. Thanks to this quality label, you have the guarantee that you are buying a product sourced from a sustainably managed forest. Sustainable forest management hinges on three major issues: economic viability, respect for the environment and social value.

Karibati for bio-sourced insulation materials



The cooperative company, **Karibati**, has created the "Bio-sourced Product" Quality Label, which aims to develop the use of renewable materials for construction. The **Univercell® +** cellulose wadding produced by **SOPREMA**, in which 90% of the raw materials come from the biomass, has been awarded the label, as has the **Isolair** rigid rainscreen and the **Pavatherm®**, **Pavawall® GF** and **Pavawall® Smart** insulation panels.

International Quality Labels

ISO 14001



The Group was one of the first players in the sector to be awarded ISO 14001 certification (management of the environment) for its plants, in Canada in particular. Since then, this certification has been widely exploited in the Group's plants. As for the Construction Agencies, the Reims site in France was the first to have gained this distinction. A recognition which acknowledged the efforts made by the firm to be more respectful of the environment. The criteria examined are based on limiting environmental impact, the raw materials used, management, the circular economy and waste management, in particular. A set of guidelines is currently being drafted at **SOPREMA Entreprises** to circulate intelligence on good practices on the subject. *"We have set up a scheme to track our waste in order to get a better overview of their ultimate destination. One way for us to select the most acceptable and most committed service providers when it comes to reusing and recycling"*, explains Thierry Dursent, the Agency's QHSE Manager.

Energy Star



SOPREMA's products may contribute to the option of Energy Star certification intended to recognise the most efficient eco-energy buildings. In our case, this means envelope quality and the tightness of the building.

LEED



The schemes in Leadership in Energy and Environmental Design (LEED) certification are among the most recognised and widespread in North America. This is certification relating to the sustainable design, construction and use of the building. Few industrial concerns have obtained this certification and **SOPREMA**, through its polyisocyanurate plant in Drummondville (Canada), is proud to be one of them.

Several products, especially those subject to a Health Product Declaration (HPD) or a life cycle analysis published in the form of an Environmental Product Declaration (EPD), go towards being awarded credits leading to certification. The insulation products also meet the requirements of GreenGuard Gold certification in terms of air quality and also contribute to various LEED schemes.

WELL



Emerging in North America, WELL certification recognises the buildings and practices of its manager that help to ensure the health and comfort of its occupants. It is determined according to seven main themes, i.e. air, water, nutrition, light, physical exercise, comfort and mental health. Several products, such as those used in soundproofing, contribute towards this certification being awarded. This also applies to the products put forward in LEED.

Nature Plus



Pavatex® insulation products in natural fibres have been **Nature Plus** certified since 2002. Created in 2001, the European Nature Plus Quality Label rewards players who commit to more responsible buildings and construction.

Interseroh



SOPREMA was awarded this label in 2017. Certification was renewed in 2019. A player in waste collection and recycling, the Interseroh Group makes a concrete contribution to reducing waste based on the "Resources Saved" initiative. In this context, **SOPREMA** was notable for the recycling of more than 4,900 tonnes of waste.

Cool Roof



"Cool Roof" technology is a roof system capable of reflecting solar heat and keeping roof surfaces exposed to sunlight temperate. Its white colour is important for the roof's longevity as it prevents the waterproofing membrane from overheating when exposed to sunlight, thus the roof remains "cool". Throughout Southern Europe, Cool Roofs are able to generate savings on cooling in premises and lessen energy demand by 10 to 30% (measured in daily use in the summer).



Constructing a more responsible building together

Conclusion

By giving meaning to our actions and a better outlook to our stakeholders, whether internal or external, we know that we can help to build sustainably and efficiently for tomorrow. In the context of our proactive Corporate Social Responsibility initiative, we endeavour actively to reduce our waste and reuse or recycle it, to use recycled materials and to move towards greater independence from petroleum-sourced resources. In addition, we propose a comprehensive range of systems and solutions to help towards protecting and enhancing biodiversity, combating the urban heat island effect and better water management.

To assist and advise our customers in the conversion towards a sustainable, responsible city, we design solutions that enable architects to give free rein to their imagination, clients to make the most of efficient systems and building users to understand that we are working towards meeting their needs. In the context of our duties and activities, each and every one of us must strive to help buildings to evolve to adapt them to present and future uses and integrate them in the smart city. Building and renovating better helps to enhance the value of real estate assets. Convinced that human initiatives and the sharing of expertise will enable us to construct durable and sustainable buildings, we are involved in discussions with bodies committed to responsible building throughout the world.

Together, we are on the right track to allowing the buildings and cities of tomorrow to come into being!



Guide 'The Future Is Now'.

This guide contains solutions on significantly reducing the ecological footprint of buildings in how they work and improving the comfort of their users.

VERSITÉ

Le développement des énergies renouvelables et l'efficacité énergétique sont au cœur de l'Université de Strasbourg. L'Université a mis en place une politique de développement durable et a mis en place plusieurs programmes pour promouvoir l'efficacité énergétique et le développement durable. L'Université a également mis en place une politique de développement durable pour les bâtiments et les terrains. L'Université a également mis en place une politique de développement durable pour les bâtiments et les terrains.

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Notes

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Find all our solutions for building a sustainable future at
www.soprema-futur.fr



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