

# Revolutionizing the concept of comfort

Octaspring, a transformative foam technology, is setting a new global standard for sustainable comfort in a wide variety of industries

A multi-award-winning technology that is thought to be the first genuine innovation in the foam industry for 20 years is primed to revolutionize the way we all sleep, sit, travel and walk. The patented Octaspring aerospace technology creates open-structured springs made entirely from foam that move in three dimensions, which can be placed individually in any product that would traditionally use foam blocks or metal springs. Recognizing Octaspring's unique benefits, rights to this technology have been snapped up by Slovenia's preeminent entrepreneur, Sandi Češko, who is now realizing its potential to redefine comfort across numerous industries.

**Sandi Češko, you first came to international attention as the founder of Studio Moderna Group in 1992, which, under your management, grew to become the leading home and living omnichannel e-commerce and direct-to-consumer retailer in Central and Eastern Europe. What led you to redirect your focus toward Octaspring technology?**

Studio Moderna grew quickly and we bootstrapped the group from zero to \$500 million in revenues, all through organic growth. I invested in talent, in information technology and the third leg of our winning combination was innovation. In 2002, we decided to launch our own in-house brands

**“Octaspring is at least 50 percent more eco-friendly and around 100 percent more comfortable than traditional foam materials.”**

Sandi Češko, Executive Chairman, Studio Moderna Brands and Founder, Vanema

and products. We started with Dormeo, which today is a global sleep brand. Under the Dormeo name, we created the world's first bed-in-a-box mattress. Through my interest in the bedding industry, I became aware of the exciting new Octaspring technology and, when I sold my interest in the main Studio Moderna platform, I invested in it.

**Octaspring has already sparked a transformation of the sleep industry. Among its benefits, the springs' open structure offer eight-times better ventilation than traditional foam—meaning that users of Octaspring-based mattresses, for instance, enjoy a three-degree cooler sleep. What are some of its other advantages that really stand out?**

Octaspring is a groundbreaking foam-from-spring technology invented by the Belgian Willy Poppe, a genius entrepreneur. The advantage of this concept is that it uses half of the foam in the same volume of end product—so, if you have a mattress, a sofa cushion, a car, airplane or train seat, we can



Sandi Češko, executive chairman of Studio Moderna Brands and founder of Vanema, demonstrates Octaspring

take 50 percent of the material out. We have carried out numerous tests in laboratories and collaborated on projects with leading air transport, automotive and furniture companies and have found that Octaspring is at least 50 percent more eco-friendly and around 100 percent more comfortable than traditional foam materials.

Our Octaspring technology enables us to reduce the materials in any foam-made product, so it is addressing the important global eco-trend. Its largest application today is in the sleep sector, but we are already also present in upholstery and transportation, and we intend to move the technology into any other industry that uses traditional foam. Our product is much lighter and, when it's used in transport sectors—including aviation, road vehicles, cruise ships and even trains—it can reduce a vehicle's overall weight and, therefore, reduce energy consumption. Octaspring can dramatically reduce a company's carbon footprint, whilst increasing user comfort at the same time. Octaspring also enables entirely new design solutions, and notable international designers like Nika Zupanc have already created exciting concept furniture designs with the technology.

**How are you promoting Octaspring technology?**

I have established two companies. The first is Studio Moderna Brands, a bedding company headquartered in the U.K., which holds the rights for the Dormeo brand outside of continental Europe. Through Studio Moderna Brands, we are selling mattresses, toppers and pillows that incorporate Octaspring around the world from America, across Europe, Japan and down to Australia. We are also working on implementing the same technologies in various business-to-business sectors, and the rights for that are held by Vanema, our second company, which is a startup headquartered in Slovenia.

**Vanema offers a full-service bespoke product development cycle to integrate Octaspring technology into all types of product. What are some of the innovative solutions you are working on at the moment?**

In the sleep business, for example, Vanema works closely with its sister company, Studio Moderna Brands, on extensive research and development. Together, they have recently developed the world's first completely personalized and customizable mattresses that are configured using artificial intelligence (AI). We are also designing a new smart factory 4.0 that will be completely robotized and digitalized. We envisage that we will have a micro production hub in every major city. This will perfectly address another very important consumer trend, which is mass customization—all products will have to be more or less personalized in the future, but we are already enabling that, thanks to our Octaspring technology, our robotized production

line and our AI algorithm. We are now busy building our first of these new production lines in Slovenia.

Studio Moderna Brands is also creating solutions that solve challenges facing bed retailers. With our technology, we are able to launch a new retail concept that makes us 50 times more efficient in terms of space than traditional mattress companies and provides customers with a much higher level of service. I see myself as the customers' concierge: to satisfy their needs, we have to be located in the most convenient places for them. So, we are making partnerships with physical and digital retailers throughout the world, giving them more efficient and sustainable products with better technology, marketing and distribution concepts.

**“We will set the highest level of environmental, social and governance (ESG) standards in the foam products industry.”**

Sandi Češko, Executive Chairman, Studio Moderna Brands and Founder, Vanema

**What objectives have you set for Vanema over the next few years?**

Within two years, I want Vanema to be recognized as the world's leading and most advanced center for new foam technologies, which creates products that are greener, more comfortable and that have a substantially better distribution concept. We will set the highest level of environmental, social and governance (ESG) standards in the foam products industry. Right now, if companies are using foam in bedding, furniture or transport-related seating, for example, and they want to make their products more sustainable, reduce their carbon footprint, make them more comfortable or personalize them, Vanema can help. The time is right: whether you're an automotive company, airline, upholstery or footwear manufacturer, retailer, hotel, cruise operator or any other business that uses foam. With Octaspring, we can significantly improve your ability to meet the expectations of your customers, investors and other stakeholders in terms of sustainability, comfort and mass customization.



Entirely new design concepts can be created with Octaspring

## Octasmart: The fastest-growing sleep brand

**Sandi Češko's journey to transform the way we sleep started in 2002 with the birth of Dormeo, the world's first 'bed-in-a-box' brand.**

Since the beginning, Dormeo has focused on delivering real benefits for customers' sleep, rather than just confusing them with technical specifications and spring counts—and it worked. Dormeo grew rapidly and quickly surpassed €150 million in revenues within Eastern Europe alone.

In 2011, Češko founded Studio Moderna Brands in the U.K. as the vehicle that would bring Octaspring technology to the global sleep industry through both Dormeo and, more recently, Octasmart, a brand dedicated to the revolutionary technology. Quickly gaining success in Europe, Asia and North America, Studio Moderna Brands has gone on to achieve some incredible milestones. Now present in over 40 geographical markets, with millions of units sold, the company's growth has been so strong that Octasmart was recently recognized as the world's fastest-growing sleep brand.

### The Technology



**Aerospace technology**

Recognised as the best new comfort innovation in aerospace, Octaspring® technology brings first class comfort.



**Kinder to the planet**

50% lighter and there is virtually no waste when producing Octaspring® products.



**Naturally 8x more breathable**

Octaspring® is naturally 8x more breathable vs standard foam and 3 C cooler.



**100% more comfortable**

Individually placed Octaspring® springs offer up to 8x better pressure distribution vs standard foam.





**Less CO2**

Octaspring® technology uses 50% less material in production of every spring, which creates immediate CO2 savings.



**Proven faster, deeper, longer sleep**

An independent sleep study showed that you will fall asleep faster, sleep longer and also have a deeper, more restful sleep on Octaspring® technology.



**Unique zoned support**

Different firmness zones are cleverly designed with your body in mind. Another unique benefit of Octaspring®.



**Mass customisation**

Octaspring® technology offers limitless possibilities for customisation.

# Uniquely better bedding

Scientific evaluations prove that Octasmart mattresses enhance the quality of sleep

Studio Moderna Brands' new Octasmart mass-market sleep collection was created in 2019 as an extension to its existing Dormeo luxury Octaspring range.

"This broadened the appeal of Octaspring products in our core markets, such as the U.K., by making the brand relevant to a much wider consumer audience," says Greg Suthern, CEO of the Octasmart International bedding unit. "It also helped us to launch our collections in multiple new markets through carefully selected distribution partners. Success doesn't go unnoticed, and that has helped attract partners for our next market launches too."

With hundreds of years' experience in the sleep industry between them, the Studio Moderna Brands team developed the Octasmart architecture to operate in all channels and for every key segment of the market. The team has designed three distinct sleep collections, each with mattresses, toppers and pillows: Octasmart Essentials consists of entry-level products for big-box retailers and direct-to-consumer (D2C) businesses; the core Octasmart range is designed for D2C and general furniture stores; and the high-end Octasmart Luxury collection has been created for specialty sleep retailers whose customers demand the very best.

"For us, comfort and quality are paramount. That's why we've never aimed to be the cheapest, which is just a race to the bottom and ultimately delivers poor customer value. We've always strived to be the very best for the price, so whatever the customer can afford, they are getting the best sleep for their money," Suthern asserts.

Octasmart's global architecture is carefully localized for every market to ensure all products are relevant and consumers' requirements are met, he adds. "Everyone needs to sleep, but what is considered 'comfortable' can be very different from country to country. Our unique technology means we can localize the desired feel, while retaining all the benefits that make Octasmart different and better."



Each Octaspring foam spring is individually positioned in an Octasmart mattress

## Introducing Octasmart



The most innovative **sleep technology** on the market



The **fastest-growing** sleep brand



Over **6 million** units sold



Global presence in **40 markets**



Successful **omni-channel** approach



**Patented** technology



**Scientifically proven** increased sleep quality



Studies support **faster, deeper, longer** sleep

In a world of 'me-too' mattresses, Octasmart stands out and offers unique points of difference to consumers and retail partners: patented aerospace technology delivering superior breathability, improved pressure relief to reduce aches and pains, and products that are scientifically proven to help people sleep faster, deeper and longer. Those factors have already led to millions of delighted customers enjoying Octasmart night after night, relaxed in the knowledge that its technology is significantly more eco-friendly than others as well.

"We are a solution-based business that is always looking for improvement through innovation, whether that be delivering a first-class sleep for customers, a sustainable growth model for business partners or incremental footfall and sales for retailers. Our technology, our marketing and our customer understanding underpin our constant drive to be different and better," states Suthern.

Working closely with the experts at sister company Vanema, the team's latest Octasmart innovation could turn out to be the biggest yet: a fully personalized mattress.

# The future of sleep has arrived: Personalization

Artificial intelligence and Octaspring technology combine to create fully personalized mass-market mattresses

Technology and innovation that deliver real customer benefits have been at the heart of Dormeo and Octasmart from the very start. Utilizing that philosophy, Vanema and Studio Moderna Brands began to tackle one of the world's biggest issues when it comes to sleep: couples making concessions about their individual comfort.

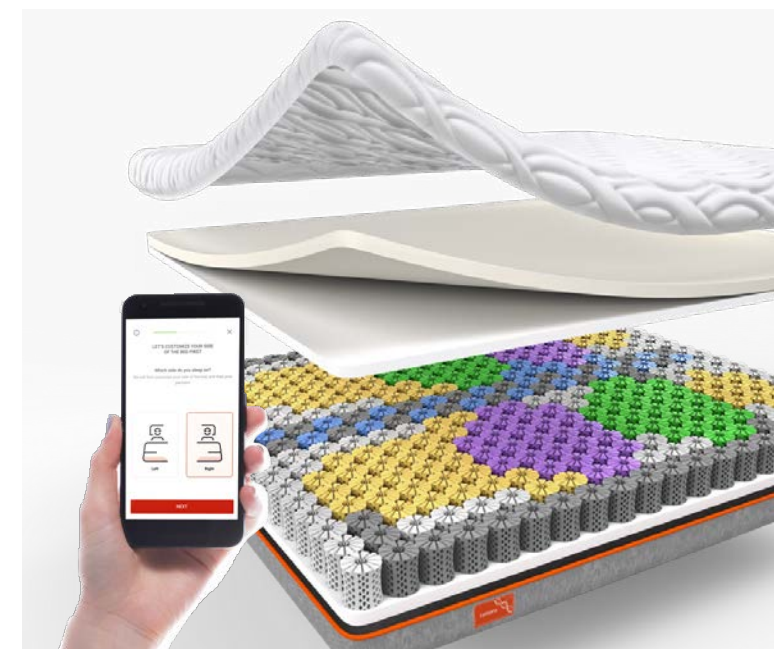
"Surveys show that, when buying a new mattress, 80 percent of couples had either one or both partners compromise on comfort because they wanted different things. We knew we had the technology to solve that problem, we just had to make it easy and affordable," explains Greg Suthern, CEO of the Octasmart International bedding unit. After almost two years of development and testing, Octasmart has now launched the first completely personalized mattress on the global market. The mattress is created using Octaspring technology, which works like a Lego system, where each different colored spring has a different density and, therefore, a different firmness, Suthern reveals. "Through this system, we can create a unique mattress with literally hundreds of independent support zones that are completely tailored for your body and your sleeping preferences. What's more, each side of the mattress can be entirely different, meaning no one needs to compromise on comfort ever again."

**"We can create a unique mattress with literally hundreds of independent support zones that are completely tailored for your body."**

Greg Suthern, CEO, Octasmart International Bedding Unit

Dormeo U.K. is the first to launch the concept, which is modeled on technology based on artificial intelligence (AI) and a proprietary algorithm that captures a customer's body measurements by simply taking a photo with a smartphone. From this, a digital avatar of someone's body is created and precise measurements taken. "Before creating a mattress, we also ask questions that take your personal sleeping preference into consideration: such as, if you prefer a softer or a firmer sleep surface. We also take account of whether or not you suffer from any aches or pains, and what your normal sleeping position is. Using all this information and our in-depth knowledge about sleep, our AI algorithm can create a fully personalized mattress, which is perfectly designed for your body, comfort preferences and sleep patterns, ensuring you get great sleep night after night," Mike Pitt, managing director of Dormeo U.K. states.

To ensure this gamechanging technology is affordable for the mass market, the Octasmart production system is heavily automated and digi-



Couples need never compromise again with Octasmart

talized as well, and Vanema had to imagine and create bespoke machinery for what is a truly unique process.

The manufacturing of Octasmart products is currently concentrated in big factories, being outsourced to global manufacturers in the U.S., Europe and China that use patented Octaspring machinery. The future for the brand's latest innovation, however, is a new smart factory 4.0 model, which will be completely robotized and digitalized. Through this model, personalized Octasmart products will be brought much closer to the consumer, with the company aiming to establish smaller production hubs in each geographical market that will shorten the supply chain, ensuring faster delivery of personalized products and a lower carbon footprint.

"All this means we will be able to deliver our personalized mattress concept at a very affordable price," says Pitt, who stresses that—if Studio Moderna Brands and Vanema have their way—personalization of comfort is not only coming to mattresses, but also to upholstery, car seats and many other areas. "We know that sitting is bad for you. People sit for too long and without the proper support or posture.

This can lead to aches, pains and chronic health problems. Vanema can't change how long people have to sit for, but we can address the ergonomic issues and make sitting more supportive, putting less strain on our bodies. A single block of foam in a seat doesn't fit all parts of your body equally, especially if you're sitting. You need something firmer at the back and something softer in front. We are working on ergonomic design projects with leading scientists and universities such as Tu Delft to deliver superior support and comfort—with Octaspring technology, we can address this without a significant increase in production costs," confirms Sandi Češko, executive chairman of Studio Moderna Brands and founder of Vanema.

"Personalization is now the main project for Vanema. We are ready to start with our first production line in Slovenia, which will support our personalized mattress launches across Europe. Our first target markets will be the U.K., France, Germany and some Eastern European countries, and then we will roll out the program globally," Češko notes.

# An incredible opportunity for bed retailers

Octasmart's new retail concept for its personalized mattresses will drive footfall to stores and increase sales

"We are always striving to create solutions for other companies and our partners, rather than pushing products. We devise solutions in terms of business concept, technologies and marketing. In our global strategy, our first priorities are making sure that we are providing solutions and creating opportunities," says Sandi Češko, executive chairman of Studio Moderna Brands and founder of Vanema.

Octasmart's revolutionary personalized mattress concept isn't only providing solutions for consumers, it will also provide solutions for retailers around the world, according to Češko. "Bed retailers' stores have doubled or tripled in size in recent years. They want to satisfy all customers' expectations in terms of materials, price points and brands. But this approach has two problems: firstly, the stores become a sea of beds that are hard to navigate and to differentiate, leading to a poor customer experience. The second problem is more space means more fixed costs for retailers, often for marginal gains in revenue."

**"We will be greener, with unique personalized solutions, use less floor space, and offer better service and customer experience."**

Sandi Češko, Executive Chairman, Studio Moderna Brands and Founder, Vanema

Octasmart's technology is a solution to these problems, as the CEO estimates that the company can offer hundreds of different personalized mattress configurations in just 10 square meters of retail space. "We will be able to create a perfect mattress for every customer using their unique body measurements and sleep preferences. There is a wonderful theater experience to having your mattress personalized. Our 10 square meters will be the most high-tech and exciting space in any store, and our personalized solutions will drive dedicated footfall to a store and convert more of the customers who are in it." The company also intends to partner with big-box retailers that don't have space to display a wide choice of mattresses, he adds. "We will be greener, with unique personalized solutions, use less floor space, and offer better service and customer experience. We're bringing added value and not just another product. With Octaspring technology and personalization, we've created a completely new paradigm." In addition, the Octasmart team brings a lot of marketing expertise and understanding in terms of educating and explaining to consumers how its solutions are different and improve sleep quality, Češko stresses. "All this is built into our products, because the benefits are very easy to demonstrate."



Having a mattress personalized is a theatrical experience

## What makes Octaspring so smart?



The first **true innovation** in foam for 20 years



Technology that has passed the **highest quality** standards



Effective and **innovative retail concept** adds value



Octaspring technology is **kinder to the environment**



Individually placed springs offer **better comfort**



Limitless possibilities for **personalization** of products



Different firmness zones offer **clever ergonomic support**



Naturally **8x more breathable** than standard foam



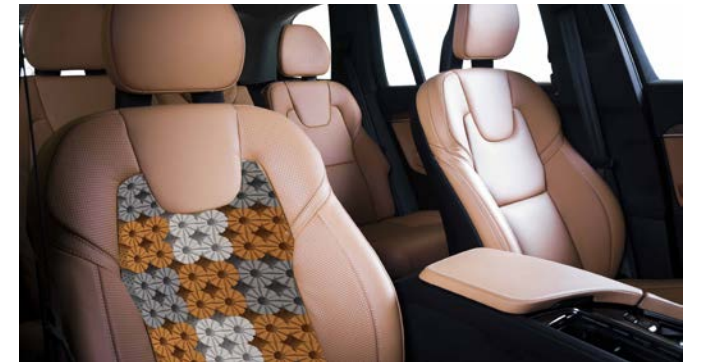
**3-D support** perfectly adapts to every inch of a user's body



**Half the weight** of an equivalent-sized foam block



Octaspring-powered seats are certified for use in aircraft



Octaspring can boost performance of heated and cooled seats

# The sky is not the limit for aerospace technology

Octaspring is being embraced by sectors as diverse as transportation, furniture, apparel and footwear

Vanema's foam-spring technology is changing the way many of us sleep, but it is also beginning to carve out a substantial impact on the way we live through diverse other sectors, not least transportation, according to executive chairman of Studio Moderna Brands and founder of Vanema, Sandi Češko.

"In 2017, I had an opportunity to present Octaspring technology to Airbus, which immediately saw its potential. Weight savings and comfort are two of the main challenges in aviation and other transport industries—our technology can solve them both." Vanema and Airbus quickly started work on a two-year development project that resulted in the first Octaspring-powered aircraft seat and cabin-crew mattress being developed and certified for aerospace.

The project gained support from the European Union's Horizon 2020 Innovation Program, which recognized the technology's ability to improve customer wellbeing, while reducing an aircraft's carbon footprint at the same time: using Octaspring technology to replace just the seat cushions on one aircraft would save enough weight to reduce the plane's fuel requirements by 1,500 liters a year, for example.

## International acclaim for Octaspring

The concept gained international attention and quickly picked up several prestigious prizes for design, technology and innovation, including a gold for comfort design from the premier U.S.-based Edison Awards for innovation. It also won a Crystal Cabin Award for being the best new aircraft interior material. "When it comes to aerospace innovations, that is the equivalent of winning an Oscar," notes Češko.

Adapting Octaspring for the aviation industry has represented probably the greatest learning and testing phase of Vanema's technology,

products and company to date, says Boris Ribičič, Vanema's director of research and development. "We managed to pass the most demanding comfort tests, dynamic crash tests and even the open-flame fire retardant tests, without which we would not have been able to comply with industry standards."

To guarantee that Octaspring-based products would be competitive in the aviation industry, Vanema also went through an ISO certification process and the company is now certified for quality manufacturing and for aviation.

"This then automatically opened our doors to all other transport industries where comfort and weight will always be an issue, such as the automotive sector, trains, cruise ships and so on. We are proud that, very early on, we were able to supply Adria, a leading motorhome company, with a luxury mattress range. We are also very excited to be testing Octaspring technology with some of the biggest automotive brands at the moment too," comments Danijel Hubman, CEO of Vanema.

In that sector, Vanema is proving it can improve passenger comfort and reduce weight to increase the range of a vehicle, but due to Octaspring's superior breathability in comparison to traditional foams, Vanema's tech-

**"In reality, we believe that there are no limitations to where Octaspring technology could be used. The possibilities are endless and Vanema is here to help transform the world of comfort."**

Danijel Hubman, CEO, Vanema

nology is also dramatically increasing the performance of both heated and cooled seats. The furniture manufacturing industry is another sector that is now benefiting from the company's innovations and Vanema has already implemented Octaspring technology into the products of numerous upholstery brands, for which it is able to offer both standardized and fully personalized solutions, while renowned international designers including Nika Zupanc are currently developing innovative new furniture design concepts with the technology, notes Hubman.

"We have also developed prototypes involving apparel and shoes—in reality, we believe that there are no limitations to where Octaspring technology could be used. The possibilities are endless and Vanema is here to help transform the world of comfort by creating a more sustainable and comfortable world to live in."

# Innovation brings sustainability to relaxation

The environment-friendly nature of Octaspring technology makes Vanema a frontrunner in sustainable practices

Sustainability has become a must-have strategy in every business and it has never been more important to be green both commercially and morally. Concern for the environment is not just a consumer trend, it is clear that it is the duty of us all to protect the planet for future generations.

Around the world, countries are setting ambitious sustainability goals. The European Union, for instance, is aiming to be carbon neutral by 2050, and the governments of its member states have been rapidly introducing new directives to reach that goal, including ones for a mandatory recycling target of 55 percent for municipal waste by 2030, phasing out landfill by the same date and many more. Soon, it simply won't be viable for companies to ignore the part they need to play in the war on climate change.

The environmental benefits of Octaspring technology put it miles ahead of its competitors in being able to provide sustainable foam solutions for industries such as sleep, transportation and furniture, which are currently major contributors to global carbon emissions. "We can create an instant reduction in emissions by using Octaspring instead of other materials, such as foam or metal springs. We create no waste in producing each Octaspring and we use 50 percent less material by volume, which means that products are lighter, more efficient to transport and have a reduced end-of-life impact too. At the same time, durability is not impacted—we expect our products to last as long or even longer than conventional foam products," reveals Sandi Češko, executive chairman of Studio Moderna Brands and founder of Vanema.

Recent calculations made by the company in collaboration with the climate-action specialist ClimatePartner demonstrate that carbon emissions are reduced by 27 kilograms with every double mattress made with Octaspring technology instead of traditional materials—multiply that by the millions of Octaspring-based products now being sold every year, and the huge difference the technology is making becomes obvious.



Octaspring-based products are designed to be easily recycled

In transport, the impact is even more marked as the weight reduction results in a carbon-dioxide reduction every single time a journey is made, says Češko. "Replacing conventional foam seat cushions with Octaspring in just 10 passenger aircraft saves 460 tons of carbon emissions every year. Now imagine how many planes, trains and automobiles there are in the world and what our technology could ultimately achieve."

Products based on Octaspring technology are also designed to be dismantled, making it is easier to recycle them, and Vanema intends to start setting targets for the recycled content used in its products as well. "Our plan is to create products that use less raw materials, which are 100-percent recyclable and are produced using recycled materials. We have already partnered with Vitafoam, a leading foam manufacturer in Europe, to use a new type of product that is created by turning used foam back into its original chemicals before converting those into new foam," Češko explains.

**"Replacing conventional foam seat cushions with Octaspring in just 10 passenger aircraft saves 460 tons of carbon emissions every year."**

Sandi Češko, Executive Chairman, Studio Moderna Brands and Founder, Vanema

Vanema is also constantly revisiting its fabric compositions and packaging in order to improve their sustainability, and uses full-life-cycle analysis to make the best decisions possible for the environment. One of the innovative initiatives it has introduced to the aviation sector involves zero-landfill through the refurbishment of old aircraft seats. Here, it is retrieving old seat cushions, stripping out the foam components and recycling them into new foam, while the old seat covers are also being recycled or used to make amenity kits for airlines.

Through its company-wide sustainability plan, Vanema aims to become carbon neutral by 2030, says Češko. "Our initial goal is to create carbon-neutral products and follow our circular design strategy to understand our current carbon emissions and to reduce emissions by replacing components with part or fully recycled materials. We will then offset whatever we are not able to reduce by investing in projects that both capture carbon-dioxide emissions and contribute to future carbon emission off setting. But that is the start and not the end for us: for example, we are currently working to produce our products without using glue, on building smaller production hubs closer to the end user and we will continue innovating and investing in sustainable comfort."

## Vanema's contribution to the planet

**50%** less material    **30%** lighter    **30%** less CO<sub>2</sub>

**27kg CO<sub>2</sub>** saved with every mattress

vanema.

INNOVATION POWERED BY OCTASPRING® AEROSPACE TECHNOLOGY

MULTI-AWARD-WINNING TECHNOLOGY

8X MORE BREATHABLE

50% LESS MATERIAL = LIGHTER WEIGHT

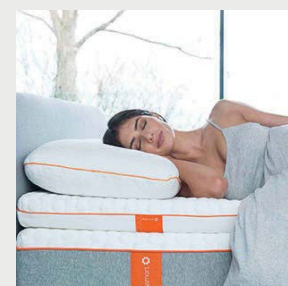
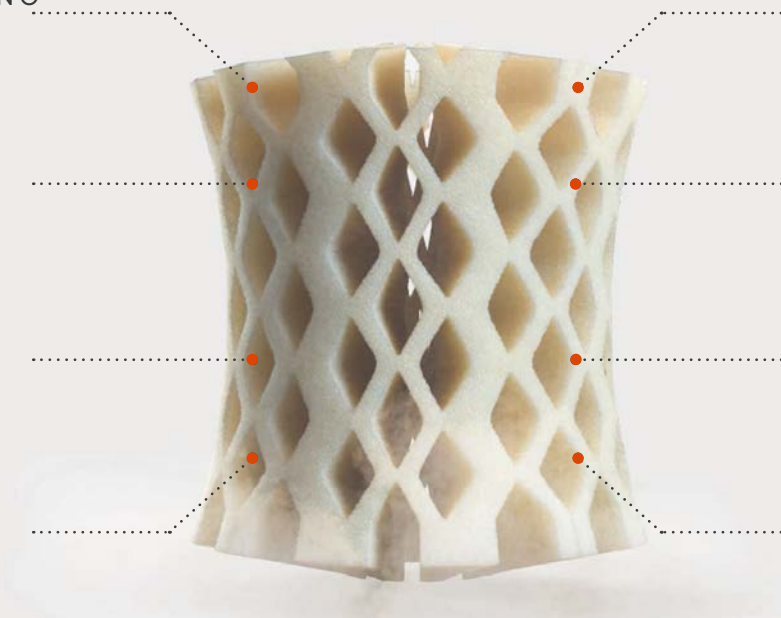
3°C COOLER

PERSONALIZED CUSTOMIZATION

IMPROVED PRESSURE RELIEF

ERGONOMIC 3D SUPPORT

ECO FRIENDLY



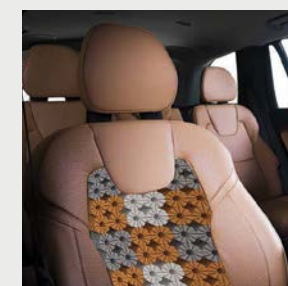
SLEEP

First-class sleep delivered by the experts in comfort.



OFFICE

Raising awareness of healthier sitting solutions.



AUTOMOTIVE

Delivering innovative comfort solutions and weight savings.



FOOTWEAR

A lighter and higher performance solution to footwear.



UPHOLSTERY

Enhancing luxury designs with luxury comfort.



AEROSPACE

First-class comfort ready for take-off!



SUPPORT

Offering first-class comfort on the go.



TRANSPORT

Changing comfort no matter how you travel.