

MAT COLLECTION



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C O P E N H A G E N

COLLECTION OVERVIEW



Mat Chair
Hemp / Seaweed



Mat Armchair
Hemp / Seaweed



Mat Barstool 65 cm
Hemp / Seaweed



Mat Barstool 75 cm
Hemp / Seaweed



Mat Bar Chair 65 cm
Hemp / Seaweed



Mat Bar Chair 75 cm
Hemp / Seaweed



Mat Bar Armchair 65 cm
Hemp / Seaweed



Mat Bar Armchair 75 cm
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COLLECTION OVERVIEW



After years of extensive research, prototyping, and testing, Mat has come to life —a chair collection that ingeniously leverages highly renewable, durable materials of hemp and eelgrass, a type of seaweed, as superior alternatives to traditional 3D shell chair materials. Hence the name, Mat, a reference to the material innovation at the core of the design. Rooted in the principles of reduce, re-use, and recycle, the Mat Chair collection aims to revolutionize conventional furniture production methods through minimizing environmental impact, repurposing production waste, and facilitating end-of-life recycling. With innovation and circularity at its core, Mat is an exploration of how to create a contemporary shell chair with materials that have a lower environmental impact than the industry norm. Designed by Danish design studio Foersom & Hiort-Lorenzen, this new chair design is the result of years of research and development.

“When Foersom & Hiort-Lorenzen approached us with their hemp chair project, we were immediately curious. Curiosity has always been a driver for Normann Copenhagen, and with our commitment to explore new, innovative production methods in mind, we embarked on a journey with Foersom & Hiort Lorenzen alongside hemp specialists from Danish Technological Institute to realize the project.”

Jan Andersen
CEO & Co-founder of Normann Copenhagen



AN UNPRECEDENTED, INNOVATIVE PRODUCTION TECHNIQUE



Mat Chair shell ready for oil treatment

For years, the furniture industry has seen numerous iterations of the same type of chair: the plastic shell chair. Meanwhile, designer Peter Hiort-Lorenzen from Foersom & Hiort-Lorenzen has been working intensely on finding alternative, more sustainable solutions. In the end-1990's, Peter initiated what would become a decades-long process, that began with the idea to transform cellulose material into shell chairs with an aim of ultimately offering an equivalent substitute for plastic.

Peter explains: "In 2005, we presented the first prototypes of the chair. Although an initial success, the timing wasn't right, and on top of that, we were experiencing production issues. In 2008, after years of research, we started testing with one of the strongest natural fibers available: hemp. Now, some 20 years later, the hemp material we have developed in collaboration with Normann Copenhagen is more sustainable, a lot sturdier and with a higher aesthetic appeal than any of the previous prototypes. It's a one-of-its-kind product."

It has taken several years to research, develop, and test the process of compressing hemp material into a shell chair that would meet the EN Level L2 testing standard for strength, stability and durability. This extensive timeline reflects the challenge of pioneering these production techniques, acquiring unique know-how and building industry expertise, given the absence of prior knowledge or precedent.

The result is Mat, a conventional chair design with an unprecedented approach to materials. Using a minimalistic, ever relevant silhouette with a focus on ergonomic comfort, the collection encompasses numerous variations of dining chairs and barstools, available with and without upholstery. The shells are crafted primarily of hemp fibers bound together by a fully recyclable binder. Mat also comes in a version with added eelgrass for a unique, characterful aesthetic. The shells are mounted on a simplistic powder coated steel base, available in two color options. The inevitable waste from the production of the shell is shredded and recycled for the making of new chairs.

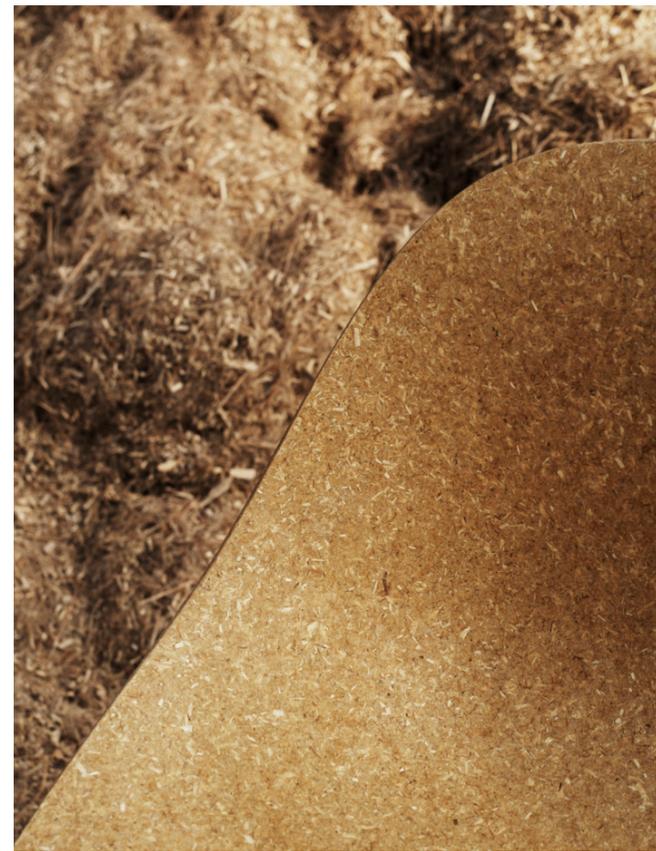
Mat Chair shell in the compression process



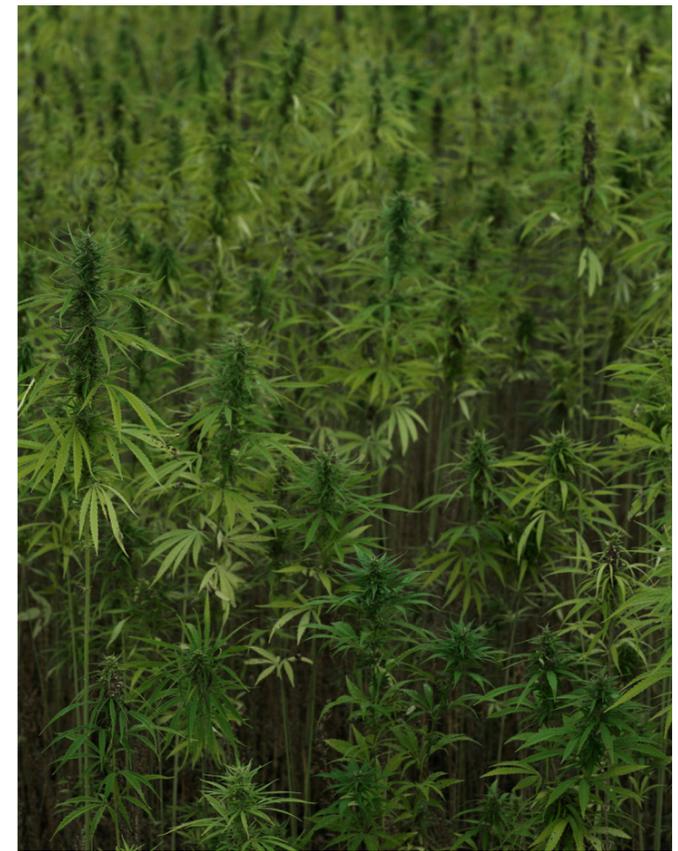




Mat Chair in Seaweed with Cream steel legs



Mat Chair in Hemp



Field of Hemp

HARNESSING THE POWER OF HEMP AND EELGRASS

The shell of the Mat Chair is innovatively crafted using hemp and eelgrass, a type of seaweed. The materials constitute the very essence of the design. Not only do the materials provide a more responsible product, they also play a key role in the aesthetic of the design, highlighting the natural beauty and tactility of the materials.

Hemp

For thousands of years, hemp has been recognized for its resilience, durability and versatility. Hemp, a rapidly renewable crop, is widely considered an environmentally friendly natural resource. It requires minimal water and zero pesticides or fertilizers. In addition, it absorbs carbon dioxide, reducing greenhouse gas emissions. Hemp's CO2 absorption varies based on growth conditions, but studies indicate a hectare of hemp can capture about 15 tons of CO2 in one season. In addition, the renewable hemp plant grows up every year, allowing it to be harvested every year. This emphasizes hemp's potential as a tool for carbon sequestration and reducing overall CO2 footprints.

The hemp used for Mat Chair is sourced from near-market regions. Here, the plant is typically used for the food and textile industries, where the stems are considered a by-product and commonly discarded. However, in crafting the Mat Chair, these otherwise discarded stems, renowned for their remarkable resilience, are collected and utilized for the production of the distinctive chair shells.

Eelgrass

Still a widely overlooked material in almost every industry, eelgrass, a type of seaweed, possesses numerous qualities that also make it an ideal resource for furniture making. In Denmark, more specifically on the island of Læsø, there has been a century-long tradition of using the extremely resilient seaweed species as a roofing material. The natural plant absorbs significant amounts of CO2 and is known to be a strong and highly durable material with a low environmental impact and carbon emission output.

Eelgrass is extremely important for the underwater ecosystem and so harvesting it would mean removing a vital resource from the ocean. Instead, the eelgrass that naturally washes ashore the coastline of Denmark is collected and dried, making sure not to disrupt the plant's essential function in its natural environment.

For the production of Mat Chair, the dried eelgrass, in combination with the milled hemp fibers, offers a characterful, grainy expression, exposing the natural beauty and tactility of the materials.



Eelgrass washed ashore on the Danish coast



Mat Chair in Hemp with Cream steel legs

DESIGNED FOR CIRCULARITY

With circularity and responsibility at its core, the Mat collection is designed for disassembly and recycling, ensuring that the components of the Mat Chair can be recycled into new productions for a fully circular life cycle.



Mat Chair in Hemp with Cream steel legs

Harvesting

Mat Chair is primarily crafted from hemp fibers, harvested from near-market farmers. Only the stem is used, a part of the plant generally considered a by-product since the rest is used for textiles and foods. Another variant includes added eelgrass, a type of seaweed which is collected when it washes up on the beaches of the coastline surrounding Denmark.

Shredding

After harvesting, the hemp stems and eelgrass is sorted at the production facility. For the milling process, the hemp stems, eelgrass and recycled Mat Chair shells are shredded, ensuring a homogenous material composition and surface expression.

Binder

The milled fibers are then mixed with a special, fully recyclable binder designed for strength and durability. The mix is transformed into sheets, which ultimately will become the shell of the chair.

Compression

The sheets are compressed into chair shells. An expertly engineered process which ensures that the materials' ability to be recycled are not compromised. Hereafter, the shells are expertly cut to size, its edges meticulously hand-sanded, and its surface oiled by hand using a VOC-free linseed oil that ensures a lasting, durable finish.

Product

The result is the Mat Chair. Designed with circularity at its core, the products can be taken back at the end of their life upon agreement, whereafter they will be disassembled, sorted and re-milled for new products.

Reuse

At the production facility in Denmark, scraps from the production of the Mat shells are sorted to be shredded, and then turned into new chairs. In addition, this is where the chairs, both the shell and the steel legs, at the end of their life, can be disassembled and reused for new productions.

FOR A DIVERSITY OF SPACES

Mat Chair collection includes a dining chair with two shell typologies, a barstool in two heights, a bar chair in two heights and a bar armchair in two heights, all available with a hemp shell or a hemp shell with added eel-grass, as well as with front or full upholstery. The base is crafted using powder coated steel and is available in two timeless colors of Black or Cream. The wide-ranging nature of the collection enables the chair to cater to a diversity of spaces from restaurants to educational facilities to hotel lobbies as well as in private residential settings.



Mat Chair in Seaweed with Black steel legs and front upholstery



MAT COLLECTION



Model: Mat Chair
Design: Foersom & Hiort-Lorenzen, 2024
Dimensions: H: 79 x W: 51.6 x D: 53 x SH: 45 cm
Shell: Hemp fibers, Eelgrass (Seaweed)

Legs: Powder coated steel

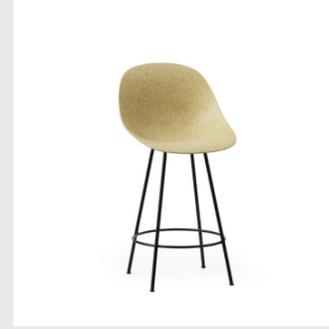
Upholstery: Comes with front and full upholstery in a wide range of textiles and leathers from Camira, Kvadrat, Sørensen Leather and JAB.



Model: Mat Armchair
Design: Foersom & Hiort-Lorenzen, 2024
Dimensions: H: 79 x W: 64 x D: 55 x SH: 45 cm
Shell: Hemp fibers, Eelgrass (Seaweed)

Legs: Powder coated steel

Upholstery: Comes with front and full upholstery in a wide range of textiles and leathers from Camira, Kvadrat, Sørensen Leather and JAB.



Model: Mat Bar Chair 65 cm
Design: Foersom & Hiort-Lorenzen, 2024
Dimensions: H: 101 x W: 51.6 x D: 55 x SH: 65 cm
Shell: Hemp fibers, Eelgrass (Seaweed)

Legs: Powder coated steel

Upholstery: Comes with front and full upholstery in a wide range of textiles and leathers from Camira, Kvadrat, Sørensen Leather and JAB.



Model: Mat Bar Chair 75 cm
Design: Foersom & Hiort-Lorenzen, 2024
Dimensions: H: 110 x W: 51.6 x D: 53 x SH: 75 cm
Shell: Hemp fibers, Eelgrass (Seaweed)

Legs: Powder coated steel

Upholstery: Comes with front and full upholstery in a wide range of textiles and leathers from Camira, Kvadrat, Sørensen Leather and JAB.



Model: Mat Barstool 65 cm
Design: Foersom & Hiort-Lorenzen, 2024
Dimensions: H: 75 x W: 47 x D: 46.3 x SH: 65 cm
Shell: Hemp fibers, Eelgrass (Seaweed)

Legs: Powder coated steel

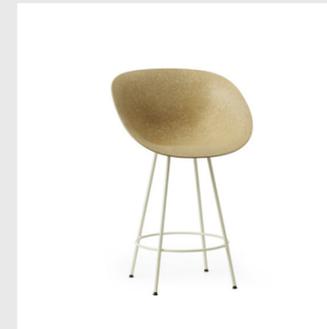
Upholstery: Comes with front and full upholstery in a wide range of textiles and leathers from Camira, Kvadrat, Sørensen Leather and JAB.



Model: Mat Barstool 75 cm
Design: Foersom & Hiort-Lorenzen, 2024
Dimensions: H: 110 x W: 51.6 x D: 53 x SH: 75 cm
Shell: Hemp fibers, Eelgrass (Seaweed)

Legs: Powder coated steel

Upholstery: Comes with front and full upholstery in a wide range of textiles and leathers from Camira, Kvadrat, Sørensen Leather and JAB.



Model: Mat Bar Armchair 65 cm
Design: Foersom & Hiort-Lorenzen, 2024
Dimensions: H: 100 x W: 64 x D: 55 x SH: 65 cm
Shell: Hemp fibers, Eelgrass (Seaweed)

Legs: Powder coated steel

Upholstery: Comes with front and full upholstery in a wide range of textiles and leathers from Camira, Kvadrat, Sørensen Leather and JAB.



Model: Mat Bar Armchair 75 cm
Design: Foersom & Hiort-Lorenzen, 2024
Dimensions: H: 110 x W: 64 x D: 55 x SH: 75 cm
Shell: Hemp fibers, Eelgrass (Seaweed)

Legs: Powder coated steel

Upholstery: Comes with front and full upholstery in a wide range of textiles and leathers from Camira, Kvadrat, Sørensen Leather and JAB.

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