
HONEXT

Raw material standardisation

We analyse, sort and classify the waste fibres based on its composition. Depending on its quality, we use 50–75% paper sludge and 25–50% post-consumer cardboard waste.

HONEXT® PROCESS

Resin-free, bio-based process

Thanks to our research, our industrial bio-based process allows us to generate stronger bindings between cellulose fibres with no need for resins.

HONEXT® BOARD

No added formaldehyde nor other volatile organic compounds (VOCs).

It has greater sound absorption properties than traditional fibreboards.

It is a material resistant to moisture and water vapor.

Current reaction to fire is class C-s1,d0. We will reach Class B-s1,d0 in 2022.

It provides better thermal insulation than other materials with similar applications.

Flexible and lighter than traditional fibreboards.

100% Recyclable. Cradle to Cradle Silver Certified and Material Health Silver Certified.

General information:

DENSITY: +/- 540 kg/m3

FORMAT: 2440×1220×12mm

THICKNESS TOLERANCE: +/- 0.5mm

We are constantly improving HONEXT®'s properties.
Visit honextmaterial.com/downloads for the latest version of our Data Sheet.

PROPERTIES	REFERENCE TEST	UNITS	12MM
Density	EN 323	kg/m3	+/- 540
Content, emission and/or release of dangerous substances (1)	EN 16516	µg/m3 (At 28 days)	85
Vapour permeability	ISO 12572:2018	µ	2,7
Reaction to fire	EN 13823 (SBI)	Euroclass	C-s1,d0
Airborne sound insulation (surface mass)	ISO 354:2004	dB	24
Acoustic absorption	ISO 354:2004	α_w	0,15
Thermal conductivity	EN 12664:2002	W/m·K	0,093
Dimensional stability (variation of length)	EN 318	mm/m	2,2
Dimensional stability (variation of thickness)	EN 318	%	1,9
Impact resistance (soft impact body energy)	EAD 210132-00-0504	N·m	1,200
Impact resistance (hard impact body energy)	EAD 210132-00-0504	N·m	10

PROCESSING HONEXT®

Cutting HONEXT®

HONEXT® boards can be easily cut and profiled as any other wood-based construction board. The best tools for cutting Honext are Circular saws and CNC machines although any other traditional wood cutting/ processing machines will work as well.

The boards have short fibres and no resin binders therefore must be cut using higher RPM than other fibreboards. To avoid tool wear and burns caused by high friction, the tools should never reach more than 300 degrees Celsius.

Circular saws:

Recommended blade:
80+ tooth, composite blades

Provider:
Leitz Tooling

Product:
Circular sawblade Katana / Ref 161200–06

Technical information:
Katana tooth combination with alternate angle of cutting face for best cutting results. Excellent design with plastic filled laser ornaments for vibration damping and reduction of noise level.

Machines:
Table and sizing saws, vertical panel sizing machines without scoring unit, cross, trimming and mitre cutting saws.

RPM: 4000+ **Speed:** 3m/min

MITRE SAW

BAND SAW

PROCESSING HONEXT®

CNC MACHINING

Recommended CNC tooling:

B. PROFILING

DIXI 72420-SH PCD, 6–8 mm diameter, 2 flutes, straight flute
Chip Load: 0.03 - 0.04mm

DIXI 7112, 5 - 5–8mm diameter, 2 flutes straight
Chip Load: 0.03 - 0.045mm

C. POCKETING

DIXI 7112, 5 - 8mm diameter, 2 flutes
Chip Load: 0.03 - 0.045mm

DIXI 7800, 20 - 35mm diameter, 4 - 6 flutes, straight
Chip Load: 0.01 - 0.017mm

D. DRILLING

DIXI 1290, 3 - 8mm diameter, 2 flutes, extraction
Chip Load: 0.04 - 0.06mm

E. ENGRAVING AND EDGING

DIXI 7628, 20mm diameter, 2 flutes, straight
Chip Load: 0.025mm

DIXI 7112, 5 - 8mm diameter, 2 flutes,
Chip Load: 0.03 - 0.045mm

DIXI 7834, 6 - 25mm diameter, 4 flutes, extraction.
Chip Load: 0.01 - 0.026mm

F. 3D MILLING

Roughing / Finishing:

DIXI 7834, 6 - 25mm diameter, 4 flutes, extraction.
Chip Load: 0.01 - 0.026mm

DIXI 7032, 12 - 16mm, 2 flutes, extraction.
Chip Load: 0.015 - 0.03mm

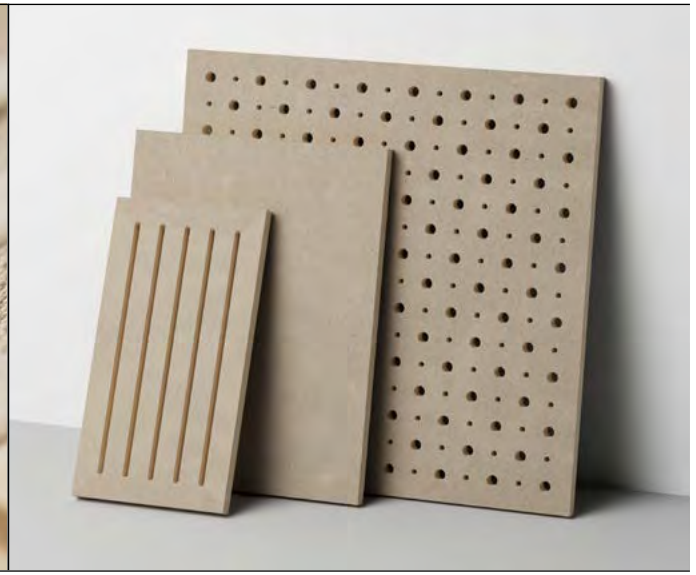
G. FACING

DIXI 7800, 20 - 35mm diameter, 4 - 6 flutes, straight
Chip Load: 0.01 - 0.017mm

CNC Machining

A. General parameters:
HONEXT® boards have to be routed with high revolutions to obtain clean results. The recommended speeds and feeds for CNC machining can be determined by using the chip load chart on the right.

TOOL DIAMETER	HONEXT	HARD WOOD	PLYWOOD	MDF/PARTICLE	SOFT PLASTIC	HARD PLASTIC	COMPOSITES
3mm	0.02 - 0.04	0.08 - 0.13	0.10 - 0.15	0.10 - 0.18	0.08 - 0.15	0.05 - 0.1	0.08 - 0.13
6mm	0.03 - 0.04	0.23 - 0.28	0.28 - 0.33	0.33 - 0.41	0.18 - 0.26	0.15 - 0.23	0.23 - 0.31
10mm	0.04 - 0.05	0.41 - 0.46	0.43 - 0.51	0.51 - 0.59	0.26 - 0.31	0.20 - 0.26	0.41 -0.46
13mm - >	0.05 - 0.06	0.48 - 0.54	0.54 - 0.59	0.64 - 0.69	0.31 - 0.41	0.26 - 0.31	0.59 - 0.64
1/8 inch	.0008 - .0015	.003 - .005	.004 - .006	.004 - .007	.003 - .006	.002 - .004	.003 - .005
1/4 inch	.0011 - .0015	.009 - .011	.011 - .013	.013 - .016	.007 - .010	.006 - .009	.009 - .011
3/8 inch	.0015 - .0019	.015 - .018	.018 - .020	.020 - .023	.010 - .012	.008 - .010	.015 - .018
1/2 inch - >	.0019 -.0023	.019 - .021	.021 - .023	.025 - .027	.012 - .016	.010 - .012	.019 - .021



Sanding and Calibrating

HONEXT® board's surface and edges can be sanded or using industrial sanding and calibrating machines as well as standard manual equipment and processes commonly applied for wood based boards.

The surface texture can be sanded smooth using fine grit sandpaper. Sanding the surface will eliminate any characteristics such as watermarks and ink spots. Sanding the outer layers of the board may cause a reduction of the material's mechanical properties, as well as increase its porosity. It is always recommended to apply the same process on both sides of the board to avoid tensions.

Recommended sandpaper:

Calibration:
Grit 40 - 80

Smooth finish:
Grit 320+

CALIBRATION

PROCESSING HONEXT®

Dust

The dust generated when processing HONEXT® boards is dense, but in no case it is toxic nor emits formaldehyde or VOCs. Regardless, the dust should not be inhaled and the use of protection gear and dust extraction systems is highly recommended.

Drilling and Screwing

HONEXT® boards do not require pre-drilling before screwing on their edges main surfaces. However, it is always recommended to drill a pilot hole for maximum performance. Although the material does not split easily, edges should always be pre-drilled to avoid it.

A. RECOMMENDED SCREWS

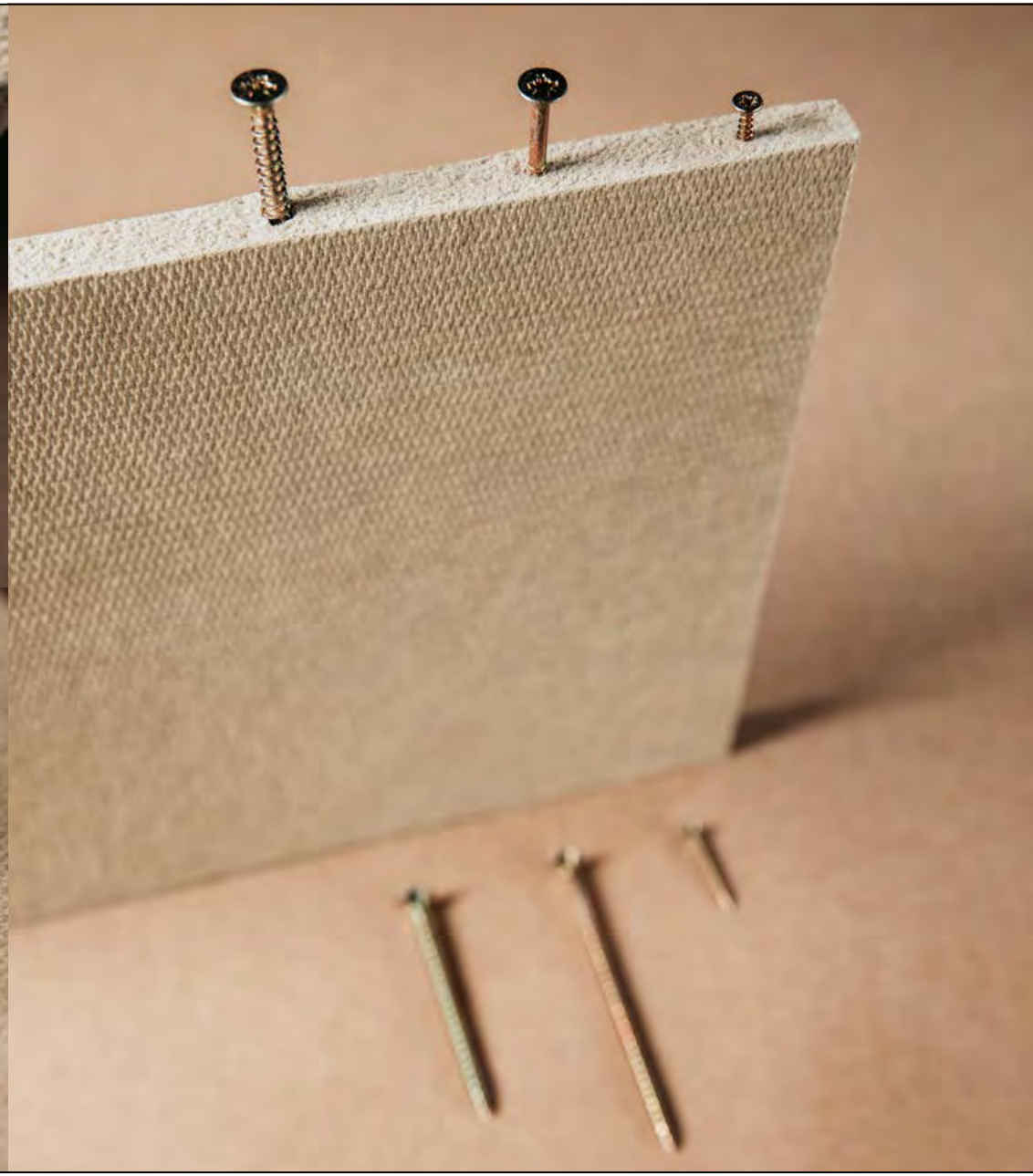
All wood screws will work on HONEXT® boards, as well as untapered sheet-metal or production screws that can give even better results for some applications.

B. TENSILE LOAD

A 540kg/m3 HONEXT® board has around 65% of the screw tensile load of a 700kg/m3 fibreboard.

PROCESSING HONEXT®

EDGE SCREWS WITHOUT PRE-DRILLING

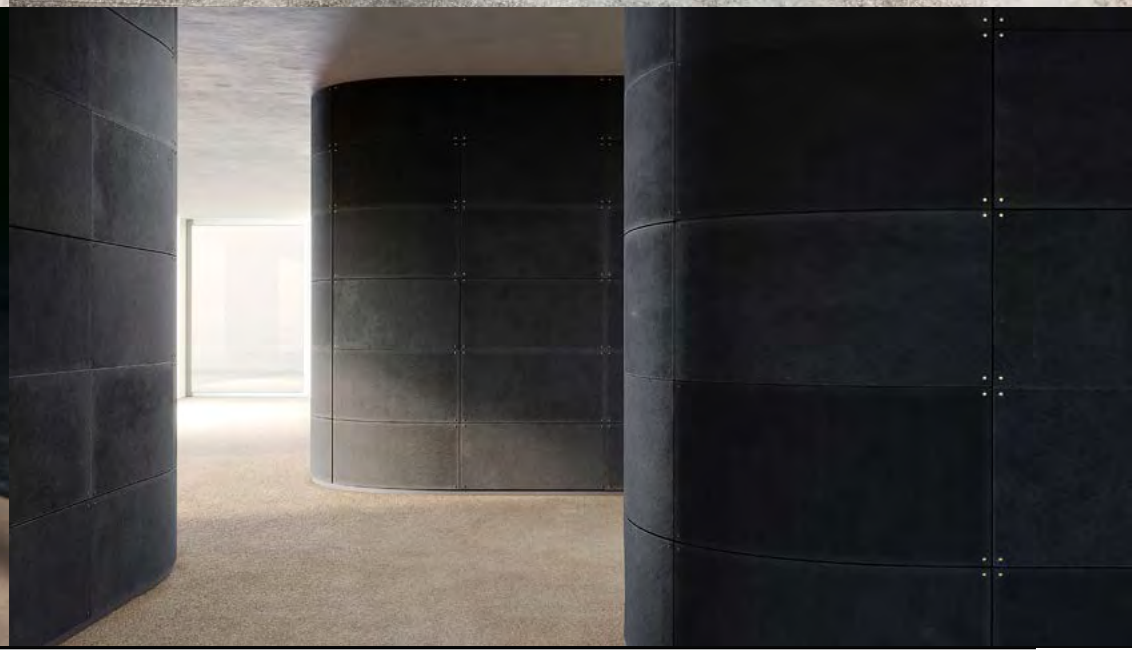


Bending

HONEXT® is a light and flexible material which does not require water, steaming or adhesives to be bent. Without any mechanisation the raw board can be bent to a 110cm radius on all axis before the risk of breaking. When left under pressure the tension leaves the material and the board will remain in shape of the mold.
The same board can as well be pressed flat again.

SHAPE MEMORY

BENDING



Kerfing check

Kerfing HONEXT® has many advantages over wood or other fibreboards. The surface is more flexible and will not brake when curving down to 50mm diameter.

PROCESSING HONEXT®

KERFING

HONEXT® FINISHES

Coating

HONEXT® can be coated with most common types of paints, oils using and varnishes using a spray gun or a roll. It is always recommended to use water-based products without any dissolvent. If transparent or bright dissolvent-based products are used, ink particles from the paper waste may dissolve and become visible.

Coating should be applied on both sides to avoid any tension that results in the unwanted curvature of the board. A single-sided finish should only be applied when the product is fixed to a solid structure. To minimise absorption, use a primer or a base coat and let it fully dry before applying the final coating.

Visit honextmaterial.com/downloads for product recommendations.

COATING

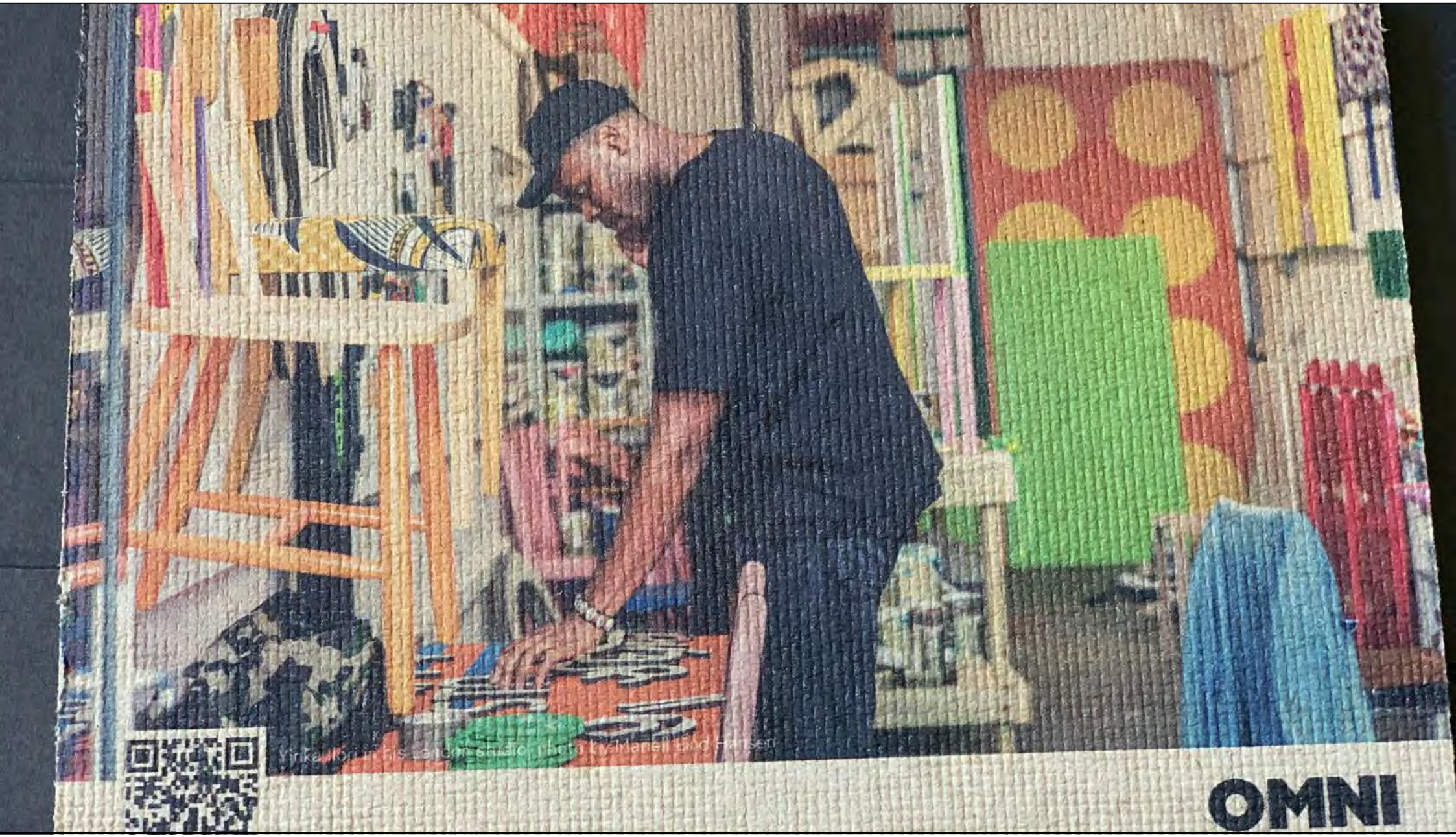
PROCESSING HONEXT®

Digital Printing

HONEXT® is an excellent material to print on using digital printing technologies. As the material is based with paper fibres it takes both colours and high resolution

PROCESSING HONEXT®

DIGITAL PRINTING



Lamination

HONEXT® can be laminated in a traditional manner as other fibreboards. Standard industry glues and processes can be applied for HPL, wood veneer, vinyl, linoleum and many more. Due to the boards +/-0.5 mm thickness tolerance it is recommended to calibrate the boards before lamination. We always recommend using low emission or formaldehyde-free glues to ensure recyclability of our boards.

Visit honextmaterial.com/downloads for glue recommendations.

Laser

HONEXT® can be engraved using a Laser cutter with minimum voltage. Although HONEXT® can be cut and profiled using a high-power laser cutter it is not recommended doe to burned edges.

Texturing

HONEXT® can be textured in a traditional industrial manner using moulds and a hot press. The low density allows the material to form easily without returning to its original shape.

Pressure: 100 - 500 kg/m2

Temperature: 95 °C

Time: 280 sec

Edging

HONEXT® boards can be edged with traditional industry equipment and adhesives.

HONEXT® PROJECTS

Construcía Sant Cugat

ACOUSTIC

Client: **Construcía**
Architect: **Construcía**
Builder: **Construcía**
Industrial Joinery: **Mecakim, Envernissats R. Vila.**
Suppliers: **ICA Lab, DIXI Polytool**

Date of completion: **January 2022**
Location: **Sant Cugat, Barcelona**
Area: **300m²**
Sector: **Office**

HONEXT® in use

Product: **HONEXT® Board**
Application: **Acoustic Clouds and Ceilings**
Area: **60m²**

Project Description:

Circular construction company Construcía used HONEXT® for suspended clouds and ceilings to improve the acoustics at they offices in Sant Cugat. HONEXT® met all the requirements of a Cradle to Cradle certified solution, allowing for healthy sound absorption with zero emissions and a look and feel that contributes to a pleasant work environment.

Processing:

1. Cut to size using a table saw. RPM: 5000, Cutting speed: 3m/min, Blade: 96 tooth, composite blade.

2. Perforated at Mecakim with CNC technology creating a grid of 8mm diameter holes every 16mm. Tool: Dixi Polytool 1290 Parameters: Speed: 2000mm/min, RPM: 18000

3. Acoustic fabric glued at the back of the panel. Glue: PVA

4. Varnished at Envernissats R. Vila. 2 layers on both sides using a spray gun. Dried in a UV drying tunnel. Product: Transparent varnish, AO800G5, ICA Lab

Installation:

Acoustic Islands: **Screwed at 5cm to the edge with 30cm spacing on a metal profile that is hung from the ceiling. Fixings: Self drilling metal screws 3.5x35mm directly to metal profile. Screw spacing 30cm.**

Acoustic ceiling: **Screwed at 5cm to the edge with 30cm spacing trough pre-drilled screw holes on wooden battens mounted to walls/ceilings. Fixings: Wood screws 3.5x35mm directly to wooden battens. Screw spacing 30cm. Acoustic wool is then placed in the metal frame.**


neros en
circular

Stella McCartney Store

WALL CLADDING

Client: **Stella McCartney**
Architect: **Stella McCartney**
Builder: **Stella McCartney**
Industrial Joinery: **Mecakim, Wood Finishes**
Suppliers: **Rubio Monocoat**

Date of completion: **November 2021**
Location: **Saudi Arabia**
Area: **97m²**
Sector: **Retail**

HONEXT® in use

Product: **HONEXT® Board**
Application: **Wall cladding**
Area: **265m²**

Project Description:

Fashion retail company Stella McCartney used HONEXT® to build interior cladding of their store in Saudi Arabia. Previously they had been using concrete for the same design which has now been replaced with Honext material.

Processing:

1. Three 12mm boards were glued and pressed together to make 36 mm thick boards.
Glue: PVA

2. The boards were machined with a CNC router creating the requested design and surface texture.
Tool: BallEnd 50mm, 2 flute.
Parameters: RPM: 18000. mm/min: 1500.

3. Varnished at Wood Finishes
Product: Rubio Monocoat Oil, Custom RAL.
Application: Spray gun, 2 layers

Installation:

The material was installed on a custom metal structure with metal fixtures.

TEXTURE SAMPLES

MECHANIZED CLADDING

Wallbox Headquarters

Client: **Wallbox**
Architect: **Construcía**
Builder: **Construcía**
Industrial Joinery: **Mecakim, Envernissats R. Vila**
Suppliers: **ICA Lab, DIXI Polytool**

Date of completion: **May 2021**
Location: **Barcelona**
Area: **1.000m²**
Sector: **Office**

HONEXT® in use

Product: **HONEXT® Board**
Application: **Acoustic Clouds and Ceilings**
Area: **192,2m²**

Project descrtiption:

Circular construction company Construcía turned to HONEXT® to build acoustic islands that improved the office acoustics of electric car charger manufacturer Wallbox. Honext's circular process met all the requirements of a Cradle to Cradle certified solution, allowing for healthy sound absorption with zero emissions and a look and feel that contributes to a pleasant work environment.

Processing:

1. Cut to size 240x120cm, 180x120cm and 60x60cm at Mecakim with circular saw at 5000 RPM, 3m/min.

2. Perforated at Mecakim with CNC technology creating a grid of 8mm diameter holes every 16mm. Tool: Dixi Polytool 1290, Diameter: 8mm. Cutting Parameters: Speed: 2000, RPM: 12000

3. Acoustic fabric glued at the back of the panel. Glue: PVA

4. Varnished at Envernissats R. Vila.
Product: Transparent varnish, AO800G5, ICA Lab

Installation:

Acoustic Islands: **Screwed at 5cm to the edge with 30cm spacing on a metal profile that is hung from the ceiling. Fixings: Self drilling metal screws 3.5x35mm directly to metal profile. Screw spacing 30cm.**

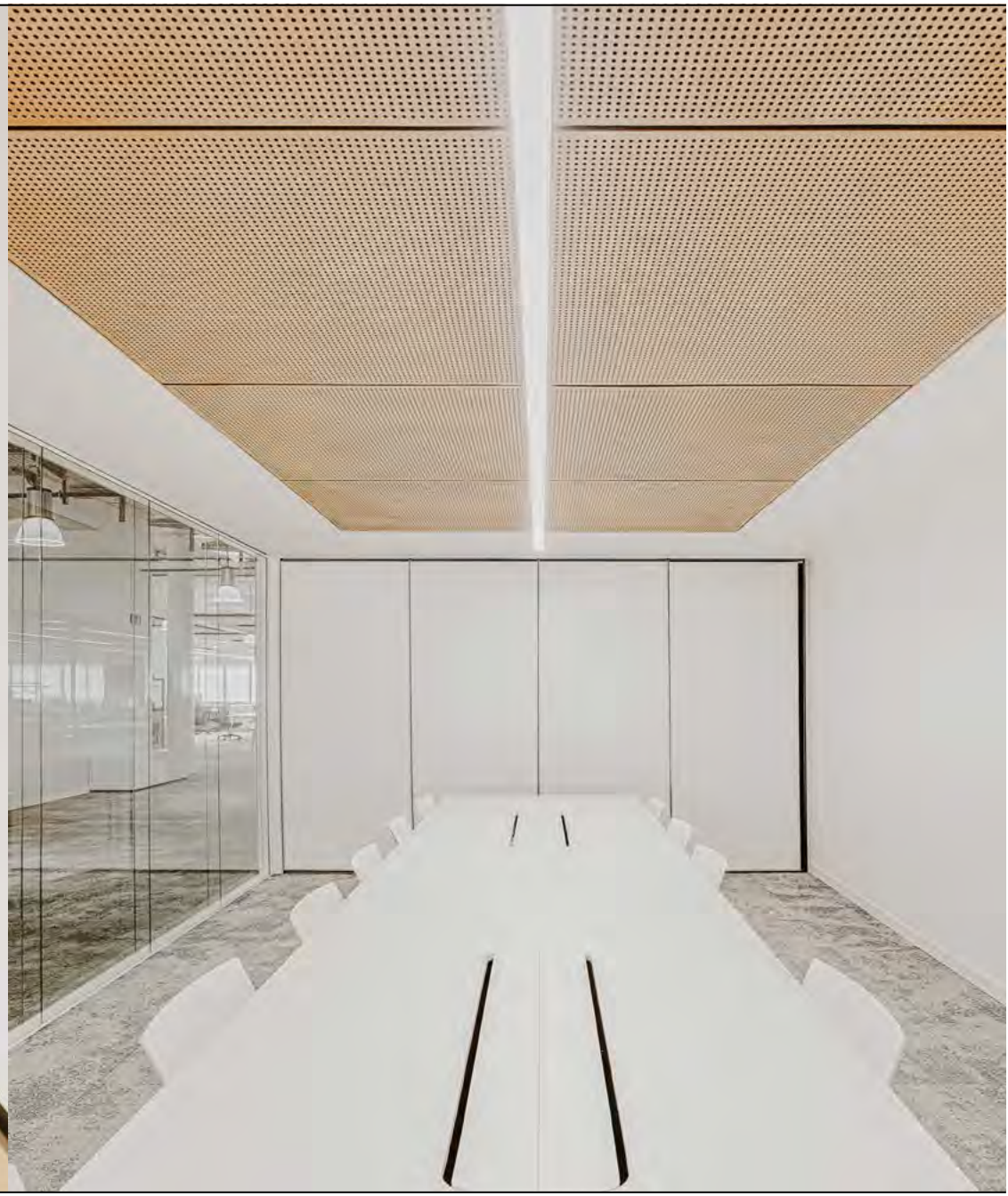
Acoustic ceiling: **Screwed at 5cm to the edge with 30cm spacing trough pre-drilled screw holes on wooden battens mounted to walls/ceilings. Fixings: Wood screws 3.5x35mm directly to wooden battens. Screw spacing 30cm.**

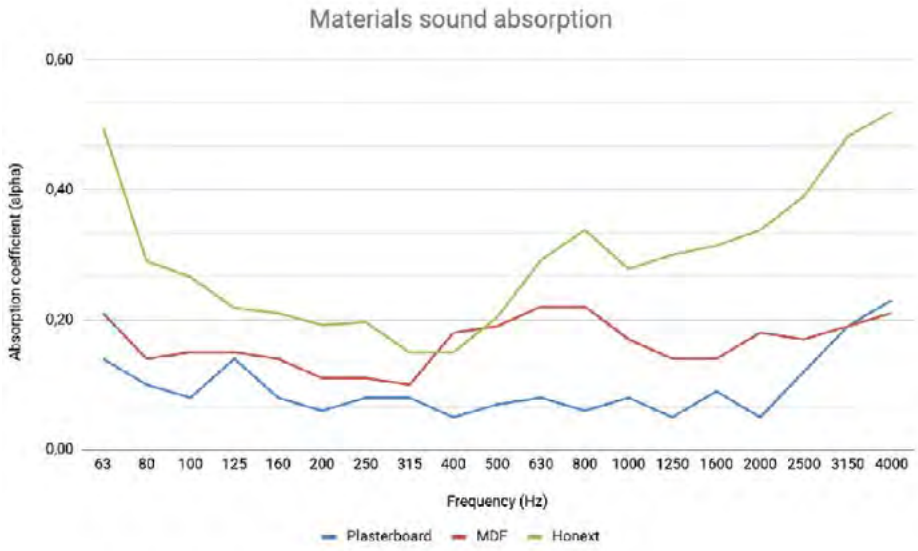
WALLBOX

ACOUSTIC ISLANDS

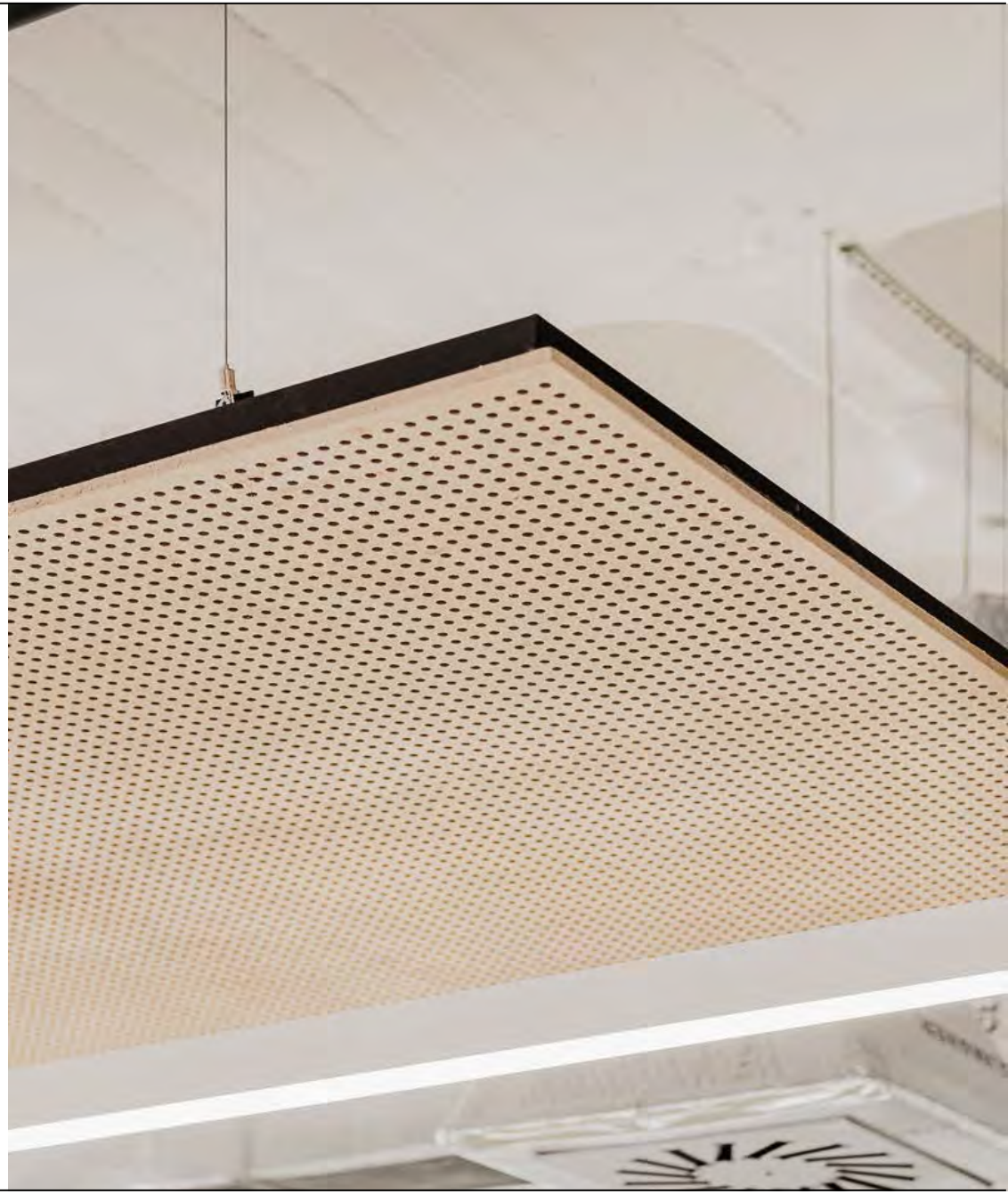
WALLBOX

ACOUSTIC CLADDING





Comparison between MDF, Plasterboard and HONEXT of 10mm thickness.
By the UPC (Barcelona).



APPLICATIONS

DROP CEILING

Adidas Store

RETAIL

Client: **Adidas**
Architect: **Adidas**
Builder: **Kimak**
Industrial Joinery: **TMDC, Wood Finishes**
Suppliers: **ICA Lab**

Date of completion: **October 2021**
Location: **Hamburg**
Area: **900m²**
Sector: **Retail**

HONEXT® in use

Product: **HONEXT® Board**
Application: **Shopfitting**
Area: **100m²**

Project Description:

Adidas Germany renovated their Hamburg store using recycled materials from various material manufacturers. This project was a new concept they are implementing in their stores all around Europe. Honext was used as a shelving surface for product display in the whole store.

Processing:

1. Cut to size at TMDC with a circular saw at 5000 rpm.
Blade: 96 tooth, composite

2. The surface texture was sanded smooth on one side of the board using an industrial sanding machine.
Paper grid 320p.

3. Varnished at Wood finishes.
Product: Idomat Natural Effect, Verinlegno. Hydro primer
Application: Spray gun on both sides.

Installation:

The material was placed in the metal frames and fixed with screws in pre-drilled holes.
Screws: 2.5x10mm wood screws


adidas

RETAIL


END PLASTIC WASTE
EXTERREX


STORE
RECYCLED STEEL
RECYCLED WOOD
RECYCLED PAPER
RECYCLED PLASTIC
RECYCLED FABRIC

Más que abejas

Client: **Intervento**
Architect: **Xavier Torrent**
Builder: **FLISX**
Industrial Joinery: **FLISX**
Suppliers: **AkzoNobel**

Date of completion: **October 2021**
Location: **Barcelona Botanical Garden**
Area: **50m²**
Sector: **Temporary installations**

HONEXT® in use

Product: **HONEXT® Board**
Application: **Exhibition display**
Area: **100m²**

Project Description:

HONEXT® partnered with museography expert Intervento to create the information boards for More than bees, a Barcelona Botanical Garden temporary exhibit highlighting the essential role of insect pollinators. HONEXT® boards were painted, varnished and digitally printed on to resemble honeycomb-like structures, being later bound together using wooden slats and fine nails. All treatments applied are eco-friendly and can be easily broken down to allow for the complete reusability of the material once the exhibit is over, in line with sustainability efforts to preserve wild bee populations.

Processing:

1. Cut to size with a table saw at 5000 rpm.
Blade: 96 tooth, composite blade

2. Painted using a spray gun. 2 layers
Product: Cetol WF 771, Black, AkzoNobel

3. Digital printing at Digiprint Center

Installation:

The boards were mounted using glue and pins on a wooden structure.
Glue: PVA


ABIÒTICA
ABIÓTICA
ABIOTIC
POL·LEN
POLEN
POLLEN
Els agents pol·linitzadors
Los agentes polinizadores
Pollinating agents
El joc de la seducció
El juego de la seducción
The seduction game
Les flors
Las flores
Flowers
On és l'abella?
¿Dónde está la abeja?
Where is the bee?
POL·LEN
POLEN
POLLEN
FLORS
FLORES
FLOWERS
INSECTES
INSECTOS
INSECTS
BIÒTICA
BIÓTICA
BIOTIC

Torre d’Ara Coworking

Client: **Torre d’Ara**
Architect: **Construcía**
Builder: **Construcía**
Industrial Joinery: **Hermanos Gómez**
Suppliers: **ICA Lab**

Date of completion: **December 2020**
Location: **Badalona**
Area: **1000m²**
Sector: **Office**

HONEXT® in use

Product: **HONEXT® Board**
Application: **Wall cladding**
Area: **180m²**

Project Description:

Circular economy pioneer Construcía chose HONEXT® to design a healthy co-working space at the seaside building of Torre d’Ara. Raw HONEXT® boards were treated with renewably-sourced varnish and used as internal cladding and furniture finish, creating an office environment that promotes the user’s well-being while ensuring full recyclability. HONEXT® was also used for the construction of phone booths, leveraging the boards’ superior sound absorption capabilities when compared to materials with similar applications.

Processing:

1. 3cm wide stripes of HONEXT® were cut, glued and pressed on a full board of HONEXT®. The boards were then cut to size using a table saw.
Glue: PVA
Saw blade: 96 tooth, Composite

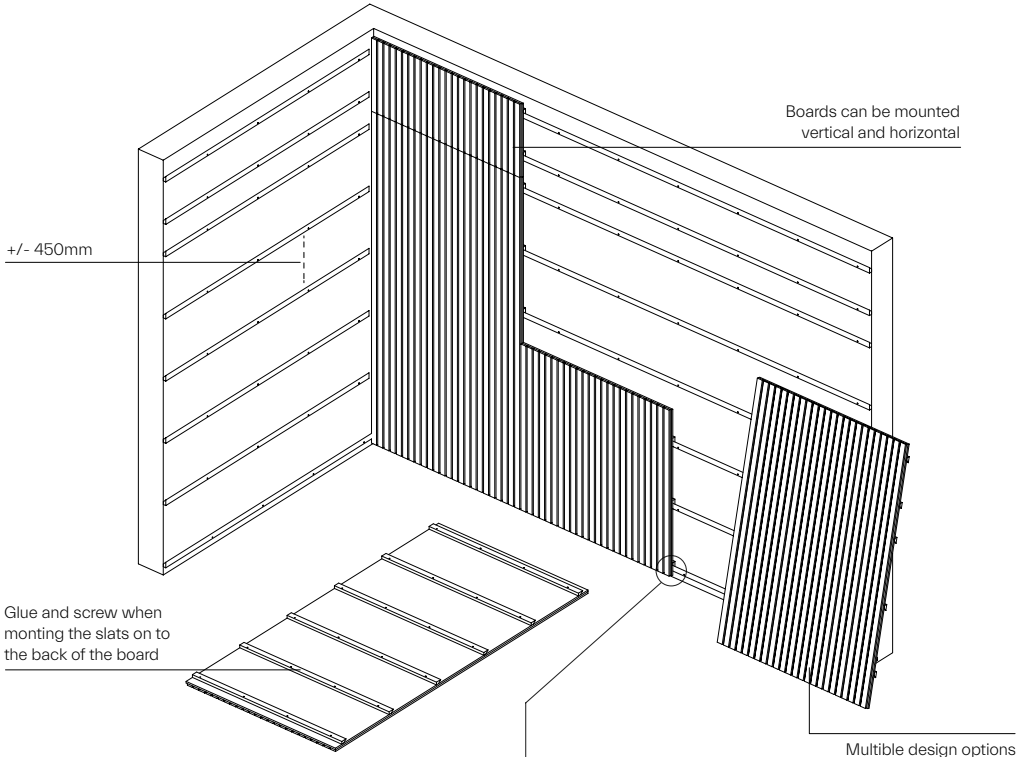
2. The boards were varnished using a spray gun.
Product: Transparent varnish, AO800G5, ICA Lab

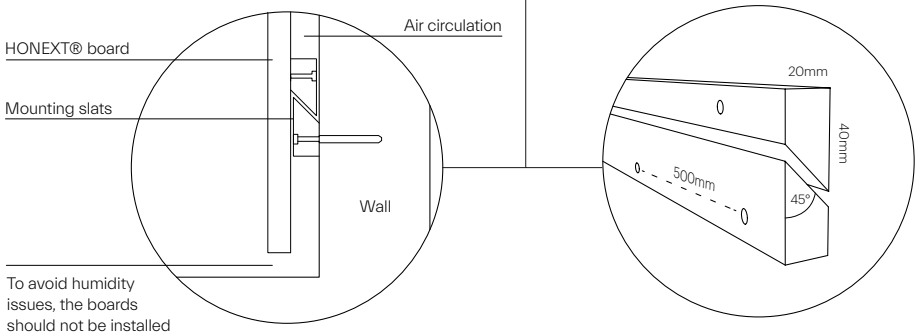
Installation:

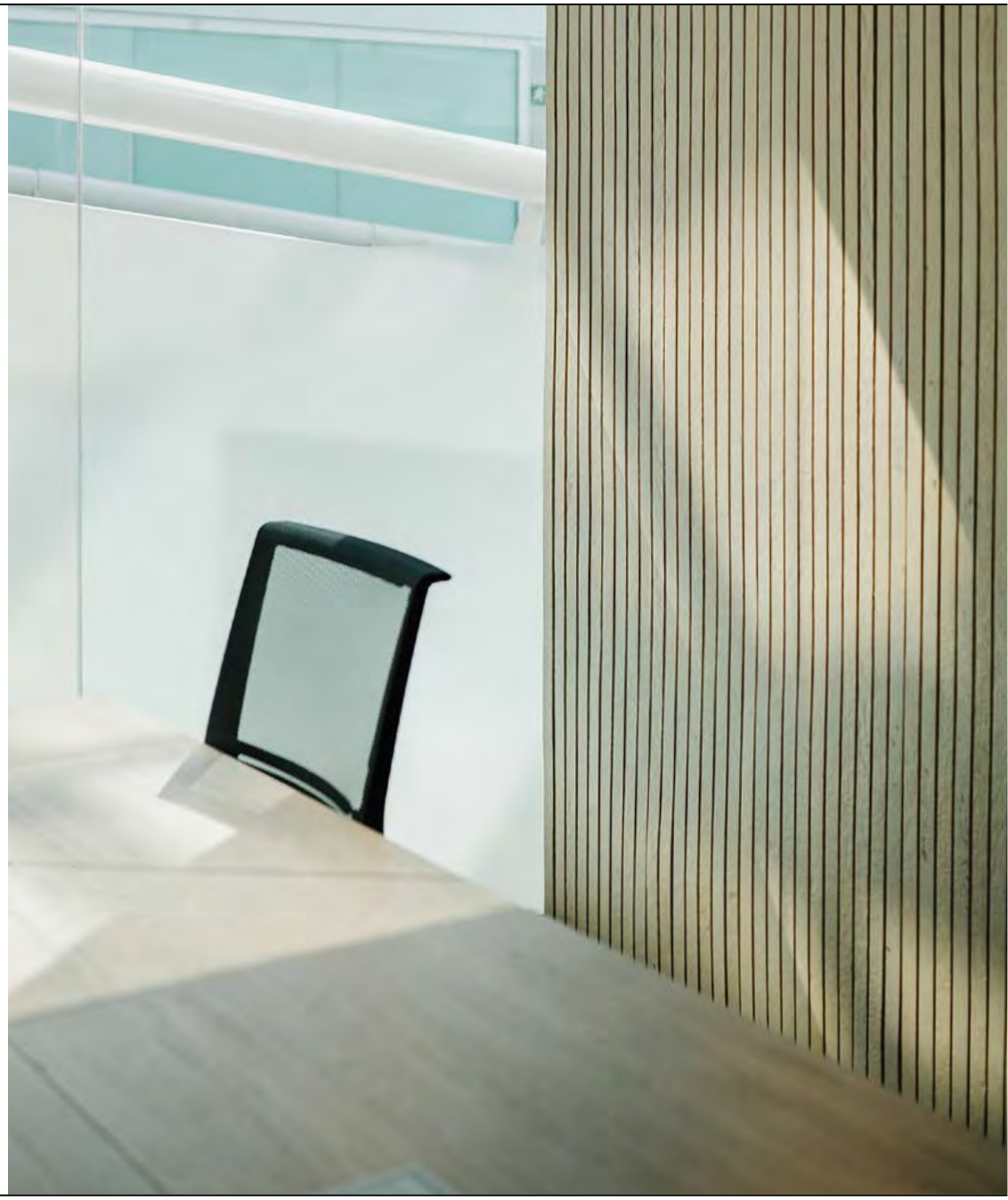
Mounting slats with 45° angle were fixed on the walls and glued and screwed on the back of the HONEXT® boards. The boards were then hanged and fixed on the wall structure.
(see on the following page)

APPLICATIONS

WALL CLADDING : HANGED







WALL CLADDING

Pool Berlin

RETAIL

Client: **Pool Berlin**
Architect: **Pool Berlin**

Date of completion: **November 2021**
Location: **Berlin, Germany**
Area: **220m²**
Sector: **Retail**

HONEXT® in use

Product: **HONEXT® Board**
Application: **Wall cladding**
Area: **90m²**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DROP-OFF
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SWAP WHENEVER YOU WANT
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The Circular Office Düsseldorf

OFFICE

Client: **Urselmann interior**
Architect: **Urselmann interior**

Date of completion: **March 2022**
Location: **Düsseldorf, Germany**
Area: **120 m²**
Sector: **Wall Cladding**

HONEXT® in use

Product: **HONEXT® Board**
Application: **Wall cladding**
Area: **40m²**

Project description:

Urselmann interior is a one contact service for circular interior design. At the end of 2020, the team of designers and craftsmen started to rethink their own planning and manufacturing processes. The goal, step by step, is to make a complete transition to a circular economy based on the Cradle to Cradle school of thought and design. According to the principle “nutrient remains nutrient”, all materials used should be able to circulate permanently in one of the two cycles. At the beginning of the design process, all constructions must already be designed to be circular and decomposable, as well as collectable and separable by type, in order to enable upcycling at the end of the life cycle.

ui c2c office

M:
DIN A3

urselmann interior

v 1.1

APPLICATIONS

INTERIOR

Neutrale Store

Client: **Neutrale**
Architect: **estudio DIIR**
Builder: **TMDC, estudio DIIR**
Suppliers: **Cedria**

Date of completion: **April 2021**
Location: **Madrid**
Area: **90m²**
Sector: **Retail**

HONEXT® in use

Product: **HONEXT® Board**
Application: **Wall cladding**
Area: **50m²**

Project Description:

Sustainable lifestyle brand Neutrale wanted to revive its charming old retail location in downtown Madrid. To do so, it teamed up with estudio DIIR to imbue its store with the brand's essence while respecting the original architecture of the space. HONEXT® and Neutrale shared the vision of re- thinking waste as an untapped resource, so there was a perfect match. HONEXT® was used as cladding in the store's main room to mark the line defined by the granite base of the façade. The boards unifies this first room and the store's reception space and gives them a cosy feel that serves as a letter of introduction to the brand.

Processing:

1. The boards were cut to size using a table saw.
Saw blade: 96 tooth, Composite

2. The surface was sanded by hand to create a "clay-like" finish.
Sandpaper: Grit 280

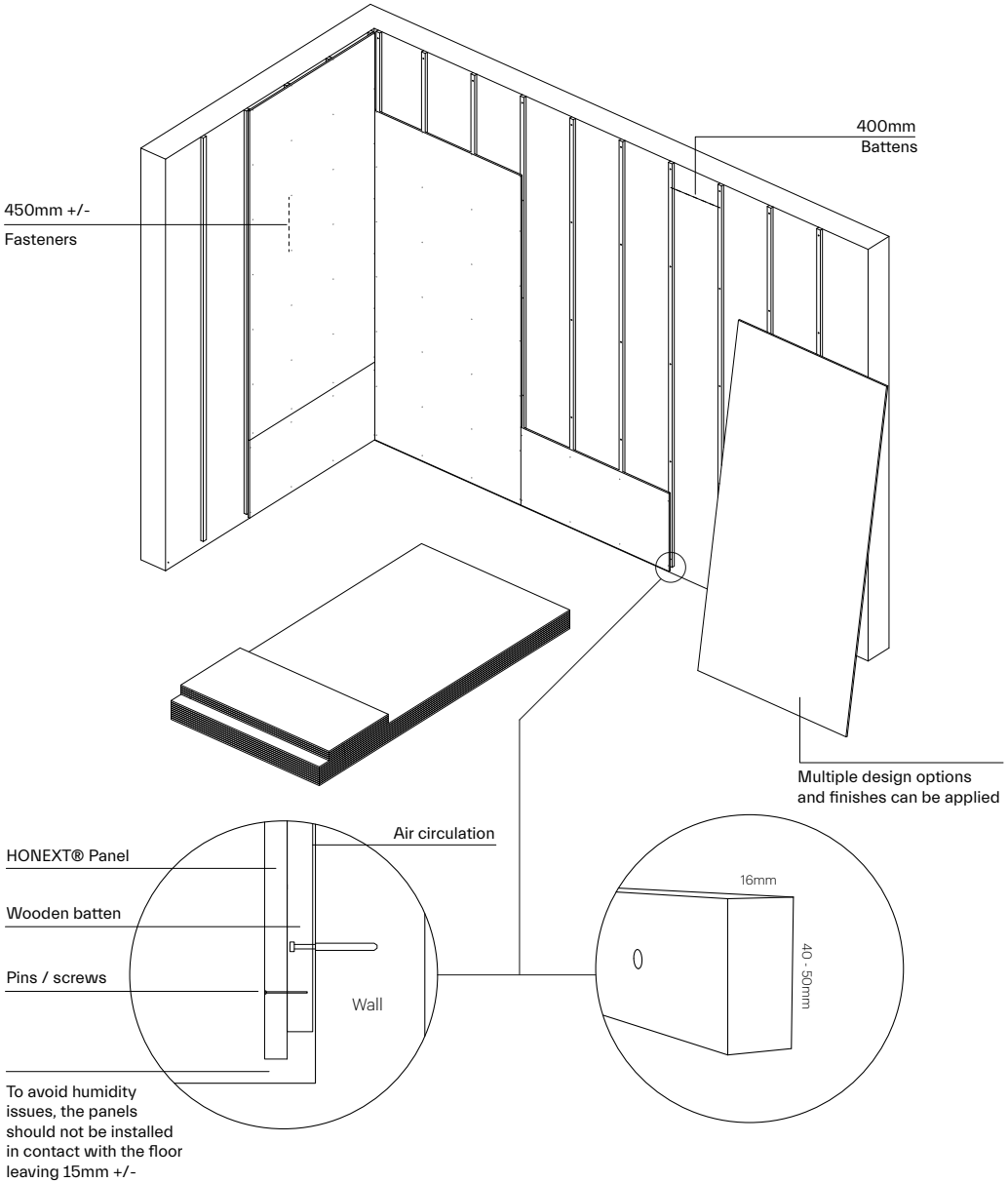
3. The panels were varnished with a transparent finish using a spray gun.
Product: CS-Cedria, Transparent

Installation:

Wooden mounting slats were fixed on the walls. HONEXT® was glued and pinned using a nail gun on the wall structure. Glue: PVA
(see on the following page)

APPLICATIONS

WALL CLADDING : FIXED




002 SHOP

What a Waste

TEMPORARY INSTALLATION

Client: **Dutch Design Week**
Architect: **Dutch Design Week**
Builder: **TMDC**
Suppliers: **OurCarbon**

Date of completion: **October 2021**
Location: **Eindhoven, Holland**
Area: **150 m²**
Sector: **Temporary installations**

HONEXT® in use

Product: **HONEXT® Board**
Application: **Exhibition Display**
Area: **50m²**

Project description:

Within the context of Dutch Design Week 2021, the largest design event in Northern Europe uniting thousands of designers and architects in Eindhoven, October 16-24, OurCarbon's What a Waste exhibit will be presenting this ground-breaking material and its various applications. The showcase will be made of HONEXT® boards painted with OurCarbon pigment. OurCarbon pigment, is a circular alternative to traditional colourants that involve carbon- and chemical-intensive production processes.

APPLICATIONS

EXHIBITION

500 Reasons why

TEMPORARY INSTALLATION

Client: **Domistic Data Streamers**
Architect: **Domistic data streamers**
Supplier: **Our-Carbon**

Date of completion: **October 2021**
Location: **TEDx Barcelona, Edinburgh**
Area: **1000 m²**
Sector: **Temporary installation**

HONEXT® in use

Product: **HONEXT® Board**
Area: **10 m²**
Application: **Display**

Project descrtiption:

Ahead of the crucial 26th UN Climate Change Conference (COP26), the TED Countdown Summit (October 12-15, Edinburgh) is bringing together global leaders in the fight against climate change to explore solutions for a net-zero future. As part of the event, the 500 Reasons Why installation by Domestic Data Streamers will gather reasons to cut down emissions and has been built with OurCarbon-coated HONEXT® boards.

More Information

Please consult the “Technical documents” on our website, at honextmaterial.com/downloads or contact your supplier for further details.

This leaflet has been produced by: Honext Material SL, B65494072, Passeig Marina Julià, 43

HONEXT®

Carrer d’Aragó, 383, 10ma

08013 Barcelona

info@honextmaterial.com

+34 623 379 238