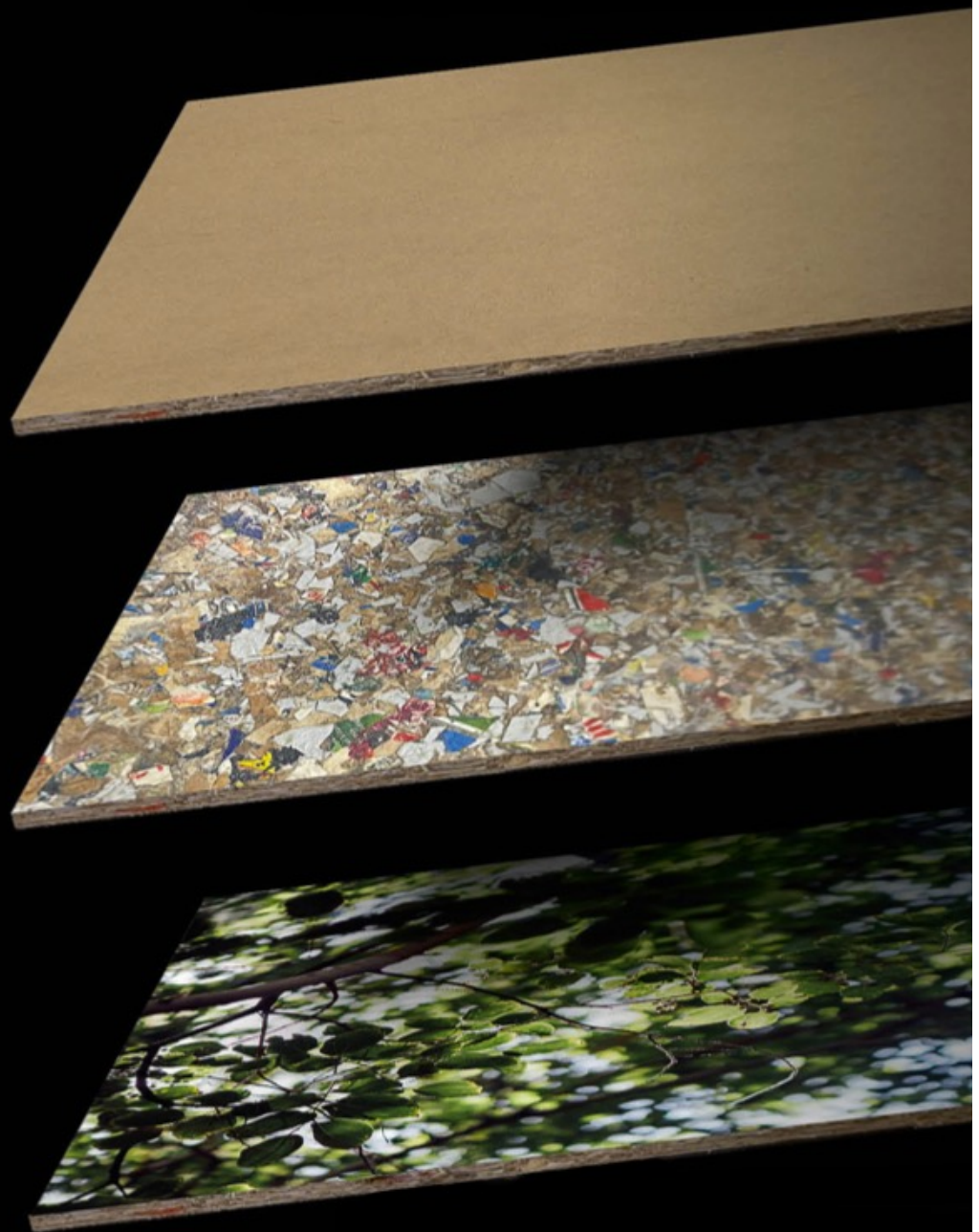




RECOMA

TECHNICAL DATASHEET



PACK  ALL

Description

About RECOMA

RECOMA saves waste from incineration and gives it new life as high performance construction. RECOMA manufactures its products from 100% recycled composite packaging in a process generating 0 waste, 0 emissions while using 0 water and 0 additives. The product is also 100% recyclable, contributing to the transition to a circular economy. RECOMA uses 100% food-grade material in its production, without adding any glues or other chemicals, making it safe to use and handle.

About PackWall

PackWall is a construction board designed for use in construction and furniture manufacturing. The boards are offered as standard in dimensions 1200x2500, 900x2500, 600x2500 and 300x2500 mm. Thickness of the boards vary between 8 and 18 mm. The surface of the boards is laminated with LDPE (low density polyethylene, 25 g / m²) and paperboard (205 g / m²) which contributes to a smooth surface ready for treatment. Density of the boards is cca 900-950 kg / m³. Tolerance of thickness +/- 0.7 mm. The product is made from recycled beverage cartons, a majority of which are "post-consumer" food packaging that have been diverted from the waste flow to avoid incineration. This means that our product does not contribute to deforestation or mining of natural resources but fits into the future of circular material usage in construction. The composite core of crushed beverage cartons (septic and aseptic) is composed of 65-75% carton, 25-35% LDPE and 1-5% aluminum (film).

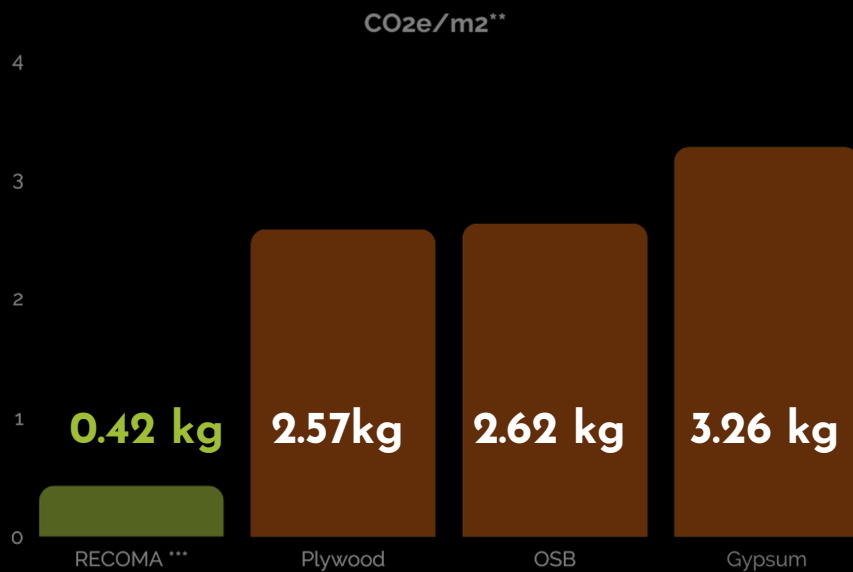
RECOMA PackWall is produced with patented technology in Hässleholm, Sweden



RECYCLING METHODS



MATERIAL PRODUCTION



* IVL Swedish Environmental Research Institute

** Boverket Construction Product Climate Database

*** Environmental Product Declaration (Third party verified Life Cycle Analysis)

Description

Variants

RECOMA PackWall is manufactured and sold in a variety of shapes. The manufacturing process and raw material is identical for each product, and the properties of the final product are the same with the exception of thickness and other qualities that are directly correlated with density; for example, hardness, insulating properties, and permeability. The boards are offered in standard dimensions 1200 x 2500 mm, 900 x 2500 mm, 600 x 2500 mm and 300 x 2500 mm. varies between 850 and 1000 kg / m³. The edge comes straight or beveled for joint putting, and other types of edge treatment are offered per request.

Application

- 10-11 mm: Construction board for interior usage. Used as a structural element as a replacement for OSB/Plywood/Particleboard
- 12 mm: Can be ordered with beveled edges for easy plastering to achieve seamless surfaces with invisible joints.
- 8-10 mm: board for exterior sheathing or interior renovation. Joints can be taped with water resistant tape to achieve a weather-proof construction quickly.
- 14-18 mm: board for furniture manufacturing and other interior details. Can be painted, veneered, or treated in other manners..

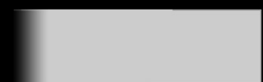
Basic



Design



Straight edge:



Beveled edge:



Product	Thickness	Dimensions	Variant	Edge	Front surface layer	Back surface layer
RECOMA PackWall	8-18 mm	1200x2500 mm	Basic	Straight	Paperboard 205 g / m ² ±10%	Paperboard 205 g / m ² ±10%
		900x2500 mm		Beveled	LDPE -film 25 g / m ² ±10%	LDPE -film 25 g / m ² ±10%
		600x2500 mm	Design	Straight	Paperboard 40 g / m ² ±10%	Paperboard 205 g / m ² ±10%
		300x2500 mm			LDPE -film 25 g / m ² ±10%	LDPE -film 25 g / m ² ±10%

Eco Labels

Logo	Name	Assessment	Comment
SundaHus	Sunda Hus	B	Based on "worst case" / "default"-elements
EPD Hub	Environmental Product Declaration (EPD)	0,42 kg CO _{2e} / m ²	Declared unit: 1 square meter
Basta	Basta	Basta (highest level)	100% circular, 75% renewable
BYGGVARU BEDÖMNINGEN	Byggvarubedömningen (BVB)	Recommended	"Recommended" in all categories
Svanens Husproduktportal	Svanens Husproduktportal	Listed	Awaiting revision of criteria
CE	CE-märkning	CE-marked	EAD, ETA, och DoP (declaration of performance)

Intended Use

RECOMA PackWall is designed as a high performing sustainable substitute for construction and carpeting, replacing traditional materials such as OSB, MDF, Plywood, cement fiber boards as well as gypsum products as the surface is paper-covered and treatment-ready. Even though the product contains cellulose fibers, considered a living material, movement of the board due to temperature and moisture changes are minimal as the fibers are surrounded by solidified LDPE.

RECOMA PackWall is suitable for construction of interior and exterior walls (although not as an outermost layer), roofing substrate, floor underlayment, concrete molds, site barriers (interim) and SIP-panels.

Due to its moisture resistant properties, the board is considered semi-permeable, but not waterproof. Usage in bathrooms and other wet areas is therefore not recommended without waterproofing treatment.

For exterior sheathing the joints should be taped with waterproof tape to achieve weatherproofing. Panel can be mounted directly on the boards. Primer and mesh usage is recommended for plastering.

For flooring, additional insulation and even spread of subfloor heating can be expected. Consider that the board is more flexible than particleboard. For ceilings, consider the fire standards and the weight of the board.

RECOMA PackWall is rated for interior and exterior non-structural application: (EN 335)

UC1: inside a construction, not exposed to the weather and wetting.

UC2: under cover and not exposed to the weather (particularly rain and driven rain) but where occasional, but not persistent, wetting can occur.



Technical Performance of the Product

Basic Works Requirement 1: Mechanical Resistance and Stability

Modulus of elasticity in bending	> 488 N/mm ²	EN 310, EN 13986+A1, EN 326-1
Bending strength	> 4,4 N/mm ²	EN 310, EN 13986+A1, EN 326-1
Tensile strength for structural use	N/A	EN 789, EN 13986+A1, EN 1058
Compressive strength for structural use	N/A	EN 789, EN 13986+A1, EN 1058
Shear strength for structural use	N/A	EN 789, EN 13986+A1, EN 1058
Load factor and creep factor for structural use	N/A	EN 1156, EN 13986+A1, EN 1995-1-1
Impact resistance	N/A	EN 1195, EN 12871, EN 596

Basic Works Requirement 2: Safety in Case of Fire

Reaction to fire	>18mm D - s1, d1	EN 13501-1
	<18mm E	EN 13501-1
Propensity to undergo continuous smouldering	No	EN 16733

Basic Works Requirement 3: Hygiene, Health and the Environment

Vapour permeability (Basic / Design)	482 / 1977	EN ISO 12572
TVOC emissions	< 0.1 mg / m ³	EN 16000

Basic Works Requirement 4: Safety and Accessibility in Use

Tensile strength perpendicular to faces	> 0.033 N/mm ²	EN 319, EN 13986+A1, EN 326-1
Pull through resistance to fasteners	> 3,43 N/mm ²	EN 1383, EN 14358
Indentation hardness by means of a durometer	56,2	EN ISO 868
Residual swelling after immersion in water	< 6,7%	EN 317, EN 326-1, EN 13986+A1
Durability - Moisture resistance	≥ 0,023 N/mm ²	EN 326-1, EN 319, EN 317, EN 321
Durability to biological agents	N/A	EN 350, ENV 12038

Basic Works Requirement 5: Protection against Noise

Airborne sound insulation	> 34 dB	EN ISO 10140-2, EN ISO 10140-4
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Basic Works Requirement 6: Energy Economy and Heat Retention

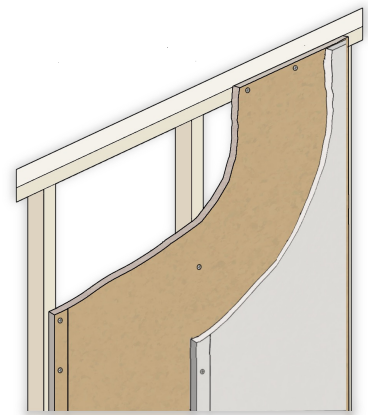
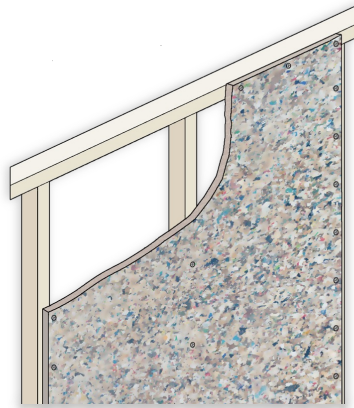
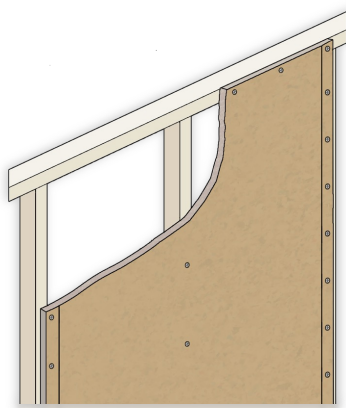
Thermal conductivity	< 0,157 W/(mK)	EN 12664
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Other

Critical moisture conditions for mould growth	80% < RF _{krit} ≤ 85%	SP-4927
Hygroscopic dimensional changes (30-85% RF)	Weight -1,37/+1,10,	EN 318:2002
	Length -0,12/+0,04,	
	Width -0,49/+0,68	
Fastener shear strength (Recoma 12mm)	Medium: 8111 N	RI.SE 1139776-01
	4mm shear: 5006	
Absorptive surface	Yes	

Installation

	WALL CONSTRUCTION	SOUND INSULATION	FIRE RESISTANCE
	12.5mm Recoma board 70mm Wood Tube studs with Ekolution HF	44 Rw (dB)	N/A
	2x 12.5mm Recoma board 70mm Wood Tube studs with Ekolution HF	52 Rw (dB)	N/A
	12.5mm Recoma board 70mm Wood Tube studs with Ekolution HF 12.5mm plasterboard	53 Rw (dB)	60 minutes
	12.5mm Recoma board 70mm Wood Tube studs with Ekolution HF 2x 12.5mm plasterboard	56 Rw (dB)	120 minutes
	12mm Recoma 95mm C+ studs	44 Rw (dB)	N/A
	12mm Recoma 95mm C+ studs with 45mm mineral wool	52 Rw (dB)	N/A
	12mm Recoma 95mm C+ studs with 95mm mineral wool	54 Rw (dB)	N/A
	12mm Recoma 95mm C+ studs with 95mm mineral wool 13mm plasterboard	59 Rw (dB)	N/A



RECOMA's boards can be used as any traditional wood-based construction boards. No need for special knowledge, tools, or methods.

Fastener distance C/C
Type of fastener
Stud distance
Stud type
Installation:

250 mm (not closer than 9.5mm from edge)
Board Screws, Nails
450, 600 mm
Wood, Steel, Wood Tube
Vertical or Horizontal

Working with RECOMA PackWall



Surface Treatment

Boards of the Basic variant can be treated largely as a gypsum board after installation. The edge can be ordered rounded to leave room for paper strip and putty for easy and smooth joints.

Keep in mind that the surface of the board is somewhat textured and that the puttied areas can be smoother than the board after grinding. An alternative to get a completely homogenous surface is putting the whole board, alternatively fiberglass wallpaper, for example Easy Cover. There is also a risk that the board will have a slight bump around some screws. These spots might also have to be cut/puttied.

Paint

Boards of the Basic variant can be painted by the indoor paint of your choice.

Wallpaper

Various wallpapers can be applied to the boards of the Basic variant using the recommended glue..

Plaster

Boards of the Basic variant can be plastered; The material does not move but primer and net for this use is recommended to completely mitigate the risk for cracks.

Ceramic tiles

Boards of the Basic variant can be clad with ceramic tiles the same way as you would do with a gypsum board.



Fastening

RECOMAs construction boards are typically fastened with screws, nails or staples. The board is fastened with a stud distance of 450 mm (for 900 mm wide boards) or 600 mm (for 1200 mm boards) vertically or horizontally with a distance between the screws of 250 mm. Expansion joints are not needed.

Somewhat longer screws, for example 2" drywall screw, is recommended to fasten properly in the stud/board behind. If the RECOMA board will be used as a surface layer and the head of the screw will be countersunk, a screw with a smaller head is recommended, for example hard drywall screw /board-screw.

The board is suitable for hanging shelves or furniture. The pull out resistance is cca 65 kg per 4,5 mm screw at 12 mm thickness of the board.

The content of the board is not completely homogenous - in some spots there is less paper and in other spots there can be more plastic. Therefore the board can feel harder in some spots than in others. Successfully tested with sheet metal-, wooden-, and Wood Tube studs.

Recommended screws:

VSB RBH1035

Ejot Extra 904085 or 904096



Cutting

The material is somewhat harder than wood and contains a significant amount of thermoplastics. Therefore it can be a bit harder to cut and wear the blades out faster. The wear is caused by friction between the blade and the plastic which is heated when cut.

To decrease this effect, blades with as coarse / few teeth as possible is recommended. Lower RPMs on the machine is also recommended.

The best results are achieved with a table saw or circular saw but for smaller cuts a jigsaw or manual saw can be used.

Always use appropriate safety gear when cutting consisting of face mask and safety goggles.



Other handling

Recommended glue: Jowacoll 124.00

Exterior usage

We recommend painting the edges with a waterproof paint to further increase the moisture resistance properties of the board..

Milling

The material can in rare cases contain small pieces of non-ferrous metal or pebbles. Milling is therefore not recommended.

Veneer/laminate/edgebands

Can easily be applied to the board. Keep in mind that the surface is not completely smooth and that can bleed through if the laminate is thin.

Bending

The material can be shaped and bent when heated with a heat gun or in a veneer press to a temperature of around 100 degrees C.

Environment & Health

RECOMA's manufacturing complies with relevant policy and local regulations and possesses the necessary permits for its operation. RECOMA works towards both the EU's and UN's climate goals and considers environment and health in every aspect of operations. RECOMA PackWall is not hazardous to humans, animals, or the environment. The product is made from 100% food grade material. No dangerous substances are included in the composition, and no adverse symptoms arise from normal handling of the product. The raw material is sterilized during production and the product is not emitting volatile organic compounds.

Manufacturing

No adverse effects on health or environment as a result of the manufacturing process.

Installation

No adverse effects on health or environment as a result of the installation process.

Smell: The product has a smell of paperboard that can be perceived as strong while cutting or drilling in the material, and a few days after installation. It gradually disappears and is gone within 2 weeks. Any perceived smell is not associated with gas emissions hazardous to health or environment

Unforeseen Circumstances

Fire: No abnormal effects on health or environment. The product consists of cca 70% carton (cellulose) and 30% LDPE (polyethylene) which is a thermoplastic consisting of carbon and hydrogen. Incineration of such plastic results in the same emissions as with incineration of natural polymers such as paper and wood; heat, water and carbon dioxide.

Water Damage: No adverse effects on health or environment.



Raw Material & Process

Material Composition

RECOMA PackWall construction boards are 100% made from recycled material, the composite core is composed of composite packaging from the food industry. The surface layer of paperboard is made from recycled paper and attached to the core by a thin film of recycled LDPE (low density polyethylene). Beverage cartons and other composite packaging are difficult to recycle in traditional technologies. RECOMA combines the advantageous qualities of this material with the demand for sustainable solutions in the construction industry. We give new life to a material that is otherwise viewed as waste, and a significant portion of it ends up being incinerated.



Carton (paper fiber)
Polyethylene (LDPE)
Aluminium

65-75%
25-35%
1-5%



Manufacturing Process

RECOMA's manufacturing is located in Hässleholm, Scania, Sweden. The construction boards are produced with patented technology. The raw material is dried, sterilized, shredded, and pressed under high temperatures to form high quality boards. In the process no water, chemicals, glues, or other additives are added. Heat and pressure is generated by 100% renewable energy. No waste or spill is generated in the production process, everything is reintroduced to the process to become new construction boards. The manufacturing process does not contribute to emissions of greenhouse gases.

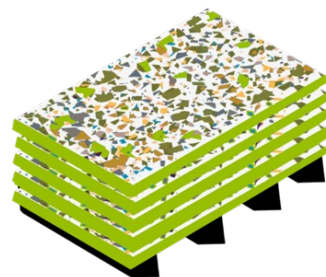


Packaging

RECOMA packages its products horizontally on dunnage from its own recycled/recyclable composite material. The load is secured by plastic strapping made of recycled PP.

Storage

- Store dry on a plain surface, not directly on the ground outdoors or exposed to direct sunlight.
- Rain can miscolor the surface paperboard, this can bleed through later when painting
- Not recommended to handle boards outside during adverse weather conditions
- Not recommended to store the product more than 12 months before usage



Care / Maintenance

A board installed in a wall construction (or used as a surface with finish) does not require any particular care or maintenance. When the Design board is used as a surface layer, it can be cleaned with a damp cloth with a soft cleaning agent. Avoid letting water absorb into the edges. If it is treated with lacquer or similar, water and cleaning chemicals can be used according to supplier instructions of the finish.

Waste Management

Excess material, waste, and material from demolishing can be fully recycled to new boards at RECOMA's facility in Hässleholm. With bulk orders RECOMA provides a "big bag" of 1 m³ for the purpose of collecting and returning waste generated from its products. Energy recovery is possible through deposit at Solid Waste Management Facilities, and the product should be sorted as: 17 09 04 "Annat bygg- och rivningsavfall".





Terms of Use / Purchase

RECOMA operates in accordance with the Byggtjänst ABM 07 agreement for trade (general provisions for trade of goods in professional construction). No other terms apply.

Assumed Working Life

Based on the assumption that the product is handled, installed, and used according to the manufacturer's recommendations, an assumed working life of 30 years can be expected.

This claim does not constitute a guarantee from the manufacturer but can be regarded as guidance for planning a project or purchase.

LCA (Life Cycle Analysis)

0,424 kg CO₂e GWP-fossil A1-A3 per declared unit (1 square meter 12mm thickness).

(Reference Standard: EN 15804+A2:2019 and ISO 14025, third party verification by EPD Hub)



RECOMA AB
Business ID: 559323-9774
VAT-no: SE559323977401
Norra Kringelvägen 13,
281 41 Hässleholm

Phone: +46 (0)451 390 500
Email: info@recoma.se