

LOWIE

BRICKS

PRESENTS

THE BRICK REVOLUTION

SUSTAINABLE – AFFORDABLE - AUTHENTIC



**LOWIE STANDS FOR: LOW IMPACT ON THE
ENVIRONMENT.**

**LOWIE BRICKS ARE NEITHER CLAY, NOR CONCRETE -
WITH THE KEY TECHNICAL PROPERTIES OF BOTH**

**REVOLUTIONARY VIBROPRESS & MIXING PROCESS
REPLACES ENERGY-INTENSIVE KILN FIRING.**

MAXIMIZING NATURAL CARBONATION

NOW = 80% CO₂ REDUCTION VS CLAY FIRED BRICKS

GOAL = 100% CO₂ REDUCTION

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“WE BELIEVE THAT REAL ECOLOGICAL PROGRESS IS
ONLY POSSIBLE IF IT IS ALSO AFFORDABLE”



SUSTAINABLE

CO₂ reduction of **76.1%-81.3%**
versus clay bricks



AFFORDABLE

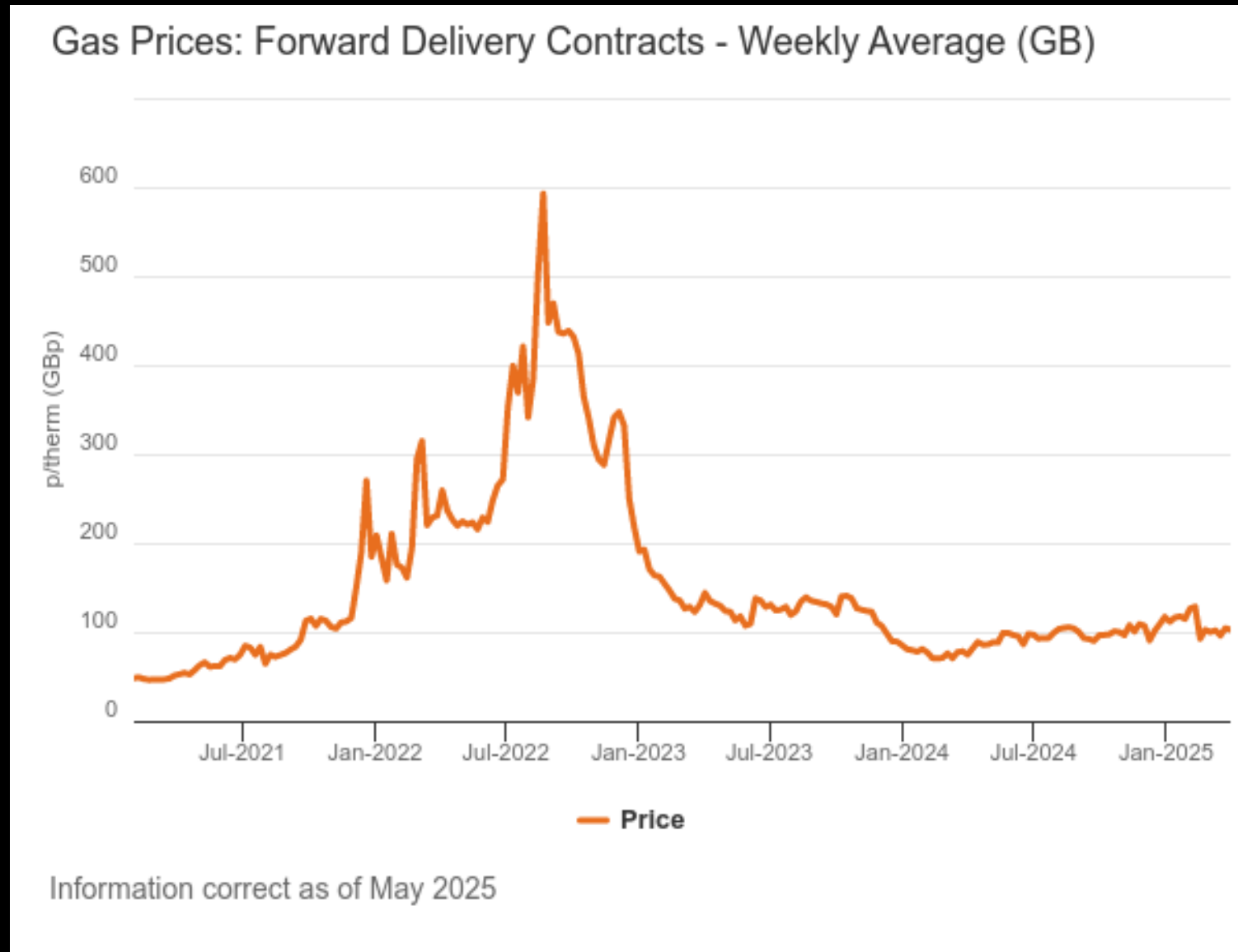
Prices are competitive
with soft-mud equivalent



AUTHENTIC

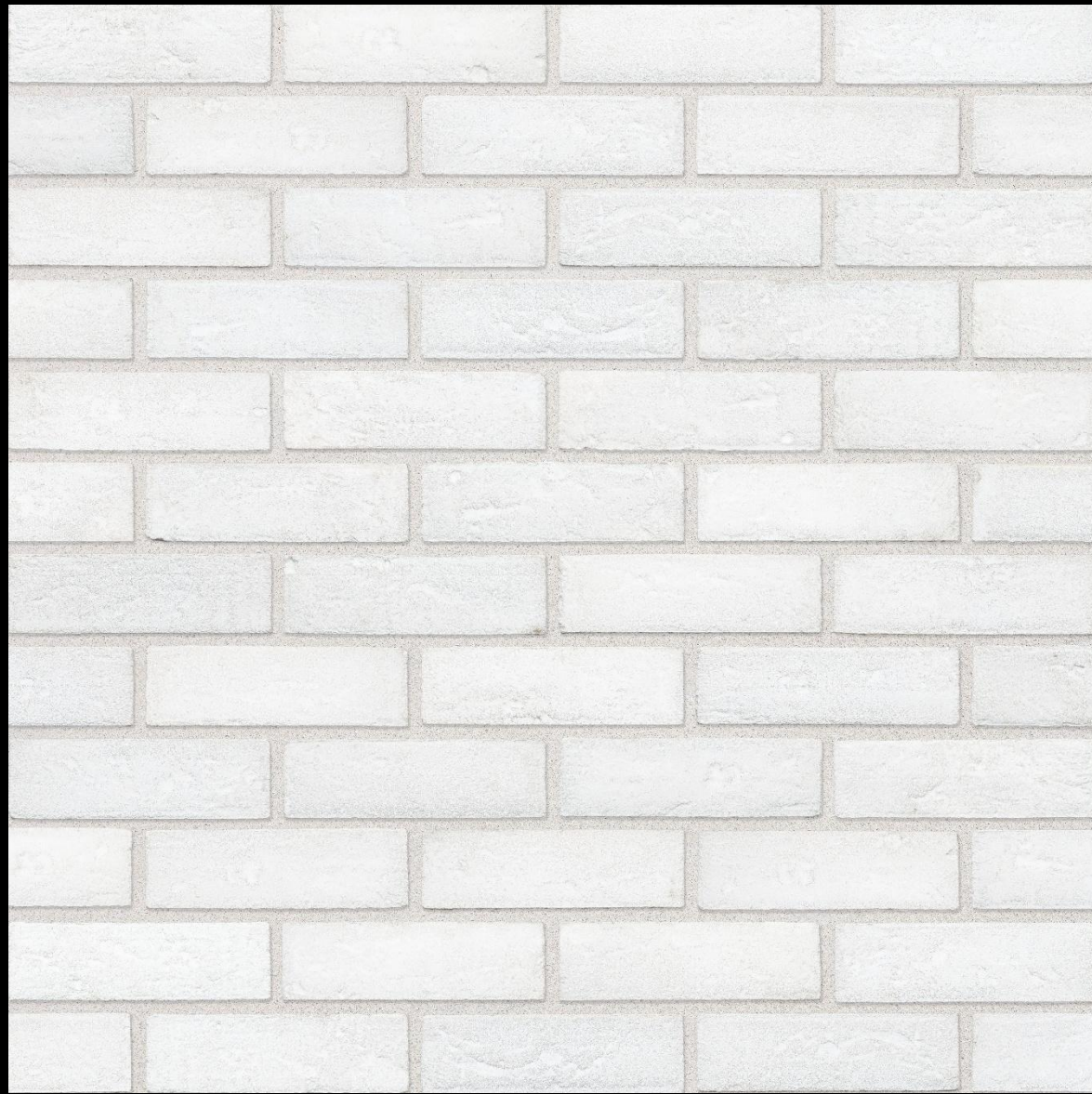
Maintains the look and feel of
traditional clay-facing brick..

PRICE STABILITY



- MODERN BRICK KILNS ARE GAS FIRED
- FUEL = UP TO 40% OF THE COST OF A BRICK
- RECORD GAS PRICES IN JULY 2022
- RECORD BRICK PRICES IN JANUARY 2023
- VIBRO-PRESS PRODUCTION USES NO FOSSIL FUELS

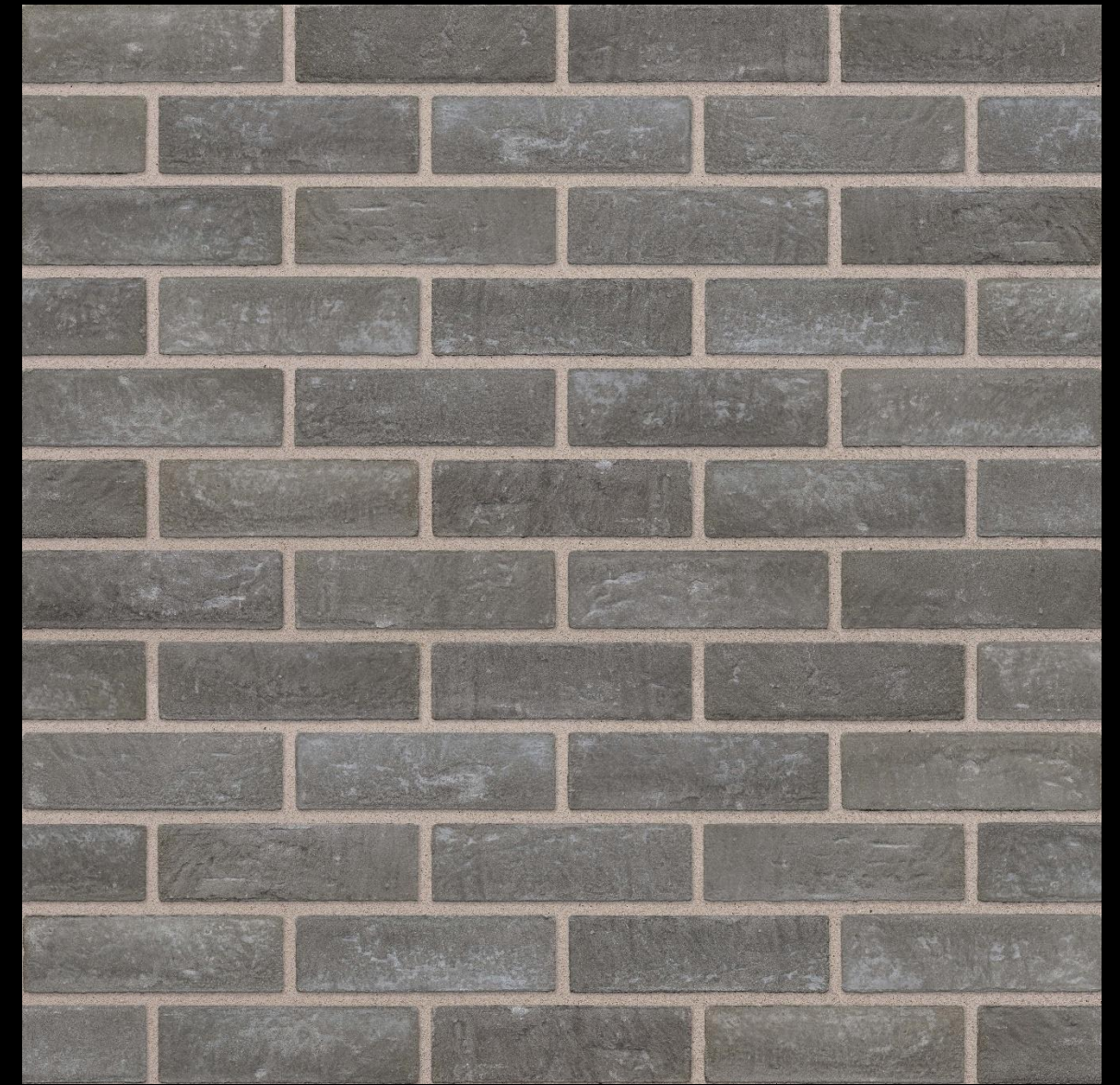
FORMATS: HANDMADE



WHITE



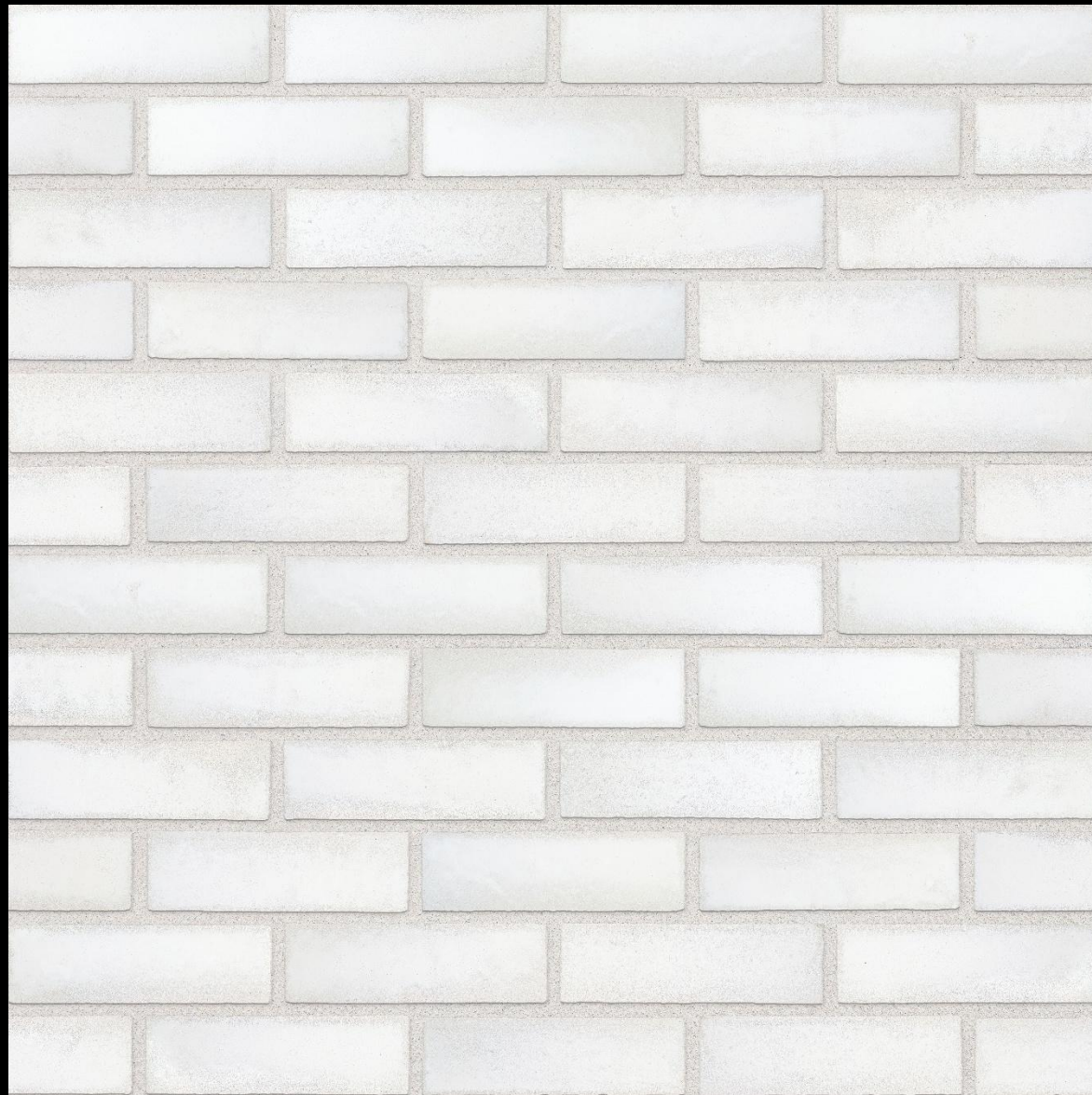
WHITE-GREY



GREY

AVAILABLE SIZES [mm]: 210 x 50 x 80 / 215 x 65 x 102.5

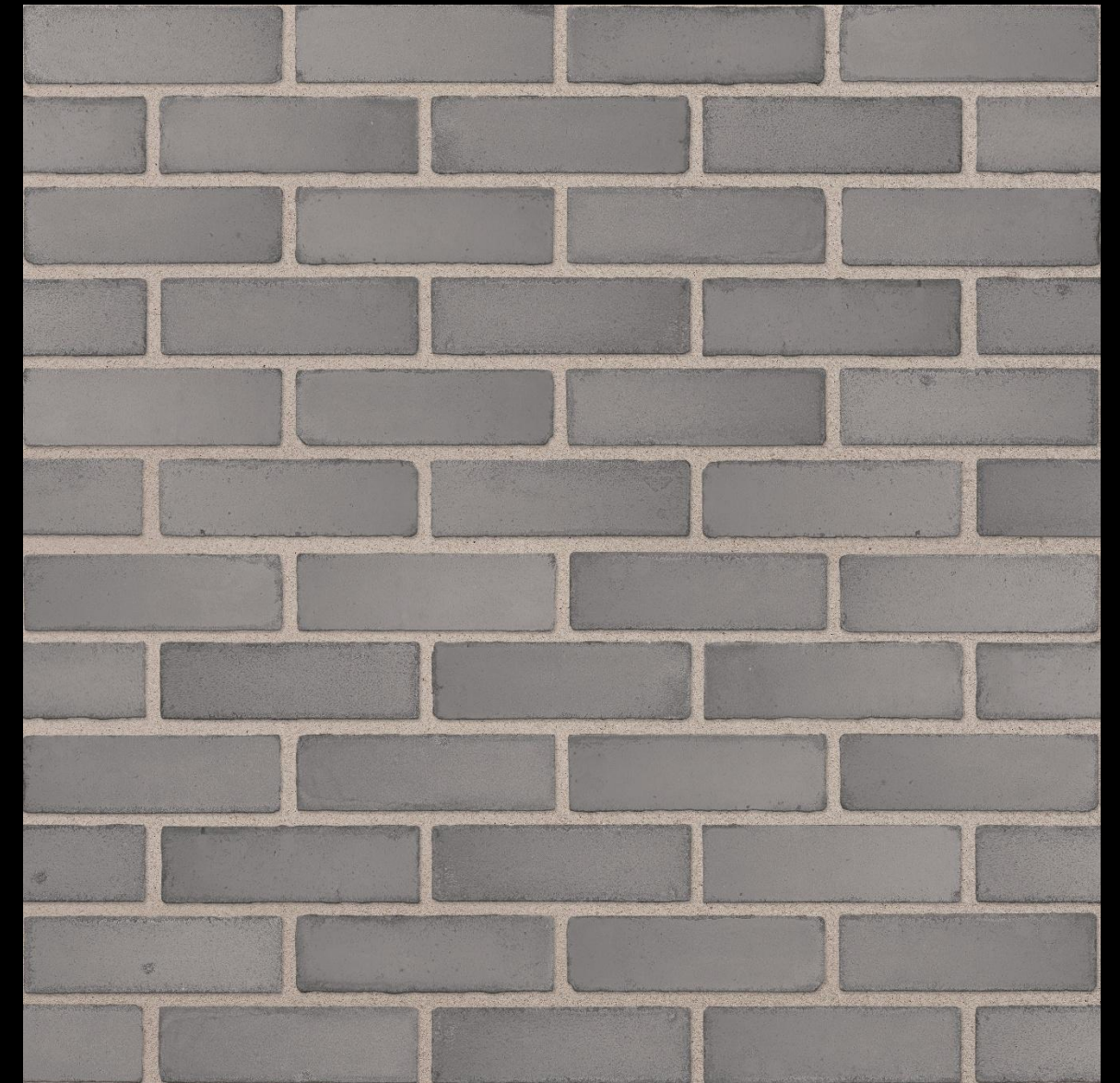
FORMATS: STOCK



WHITE



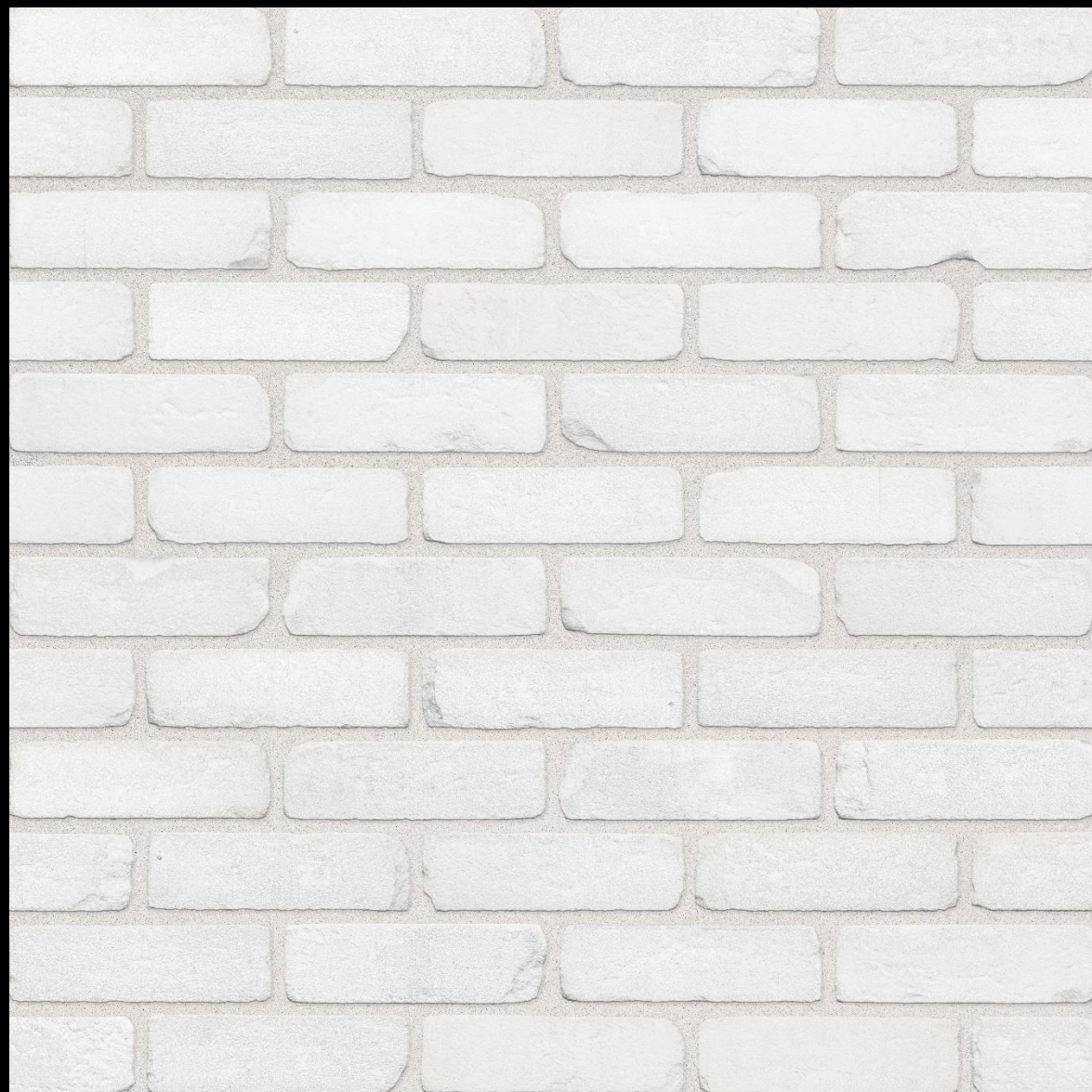
WHITE-GREY



GREY

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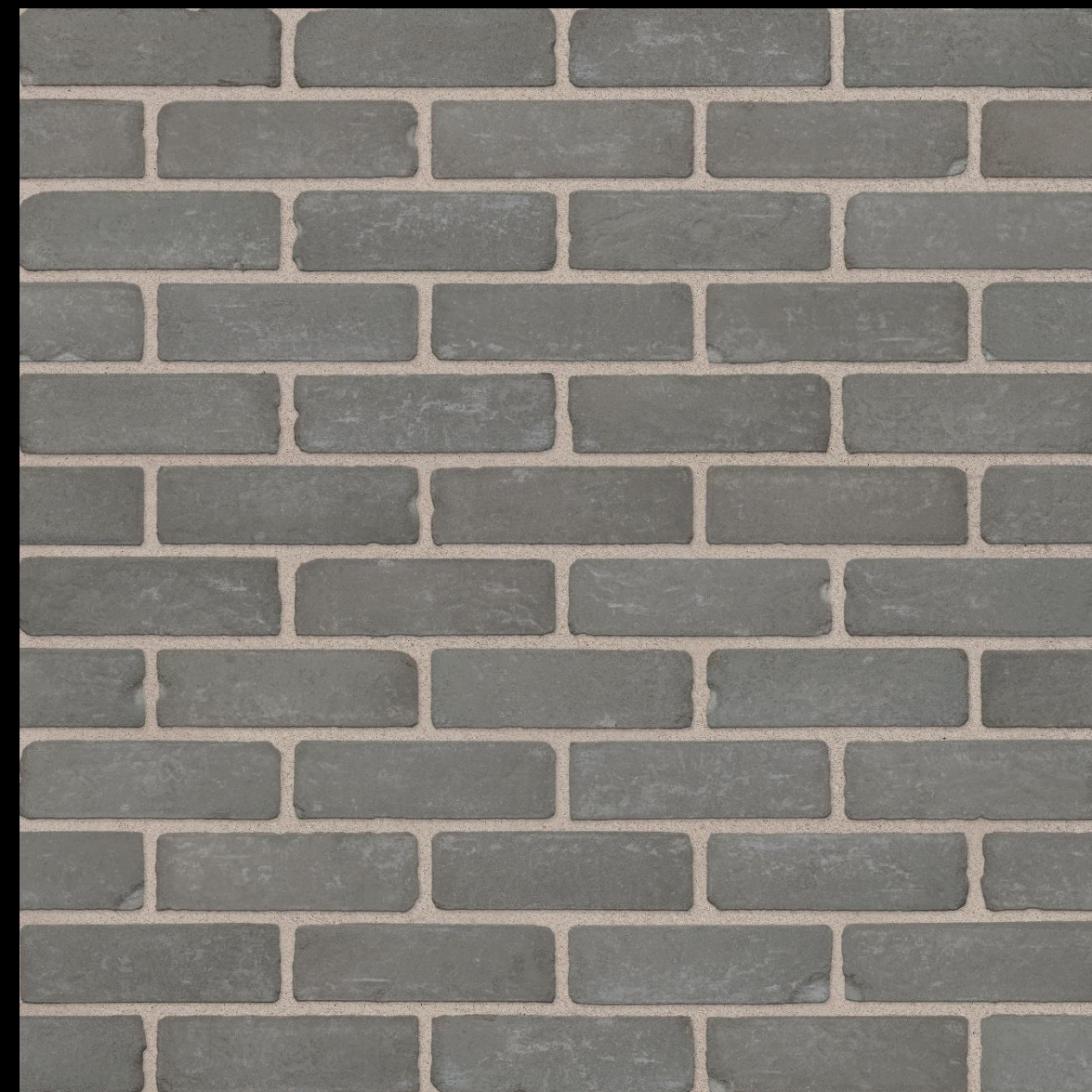
FORMATS: TUMBLED



WHITE



WHITE-GREY



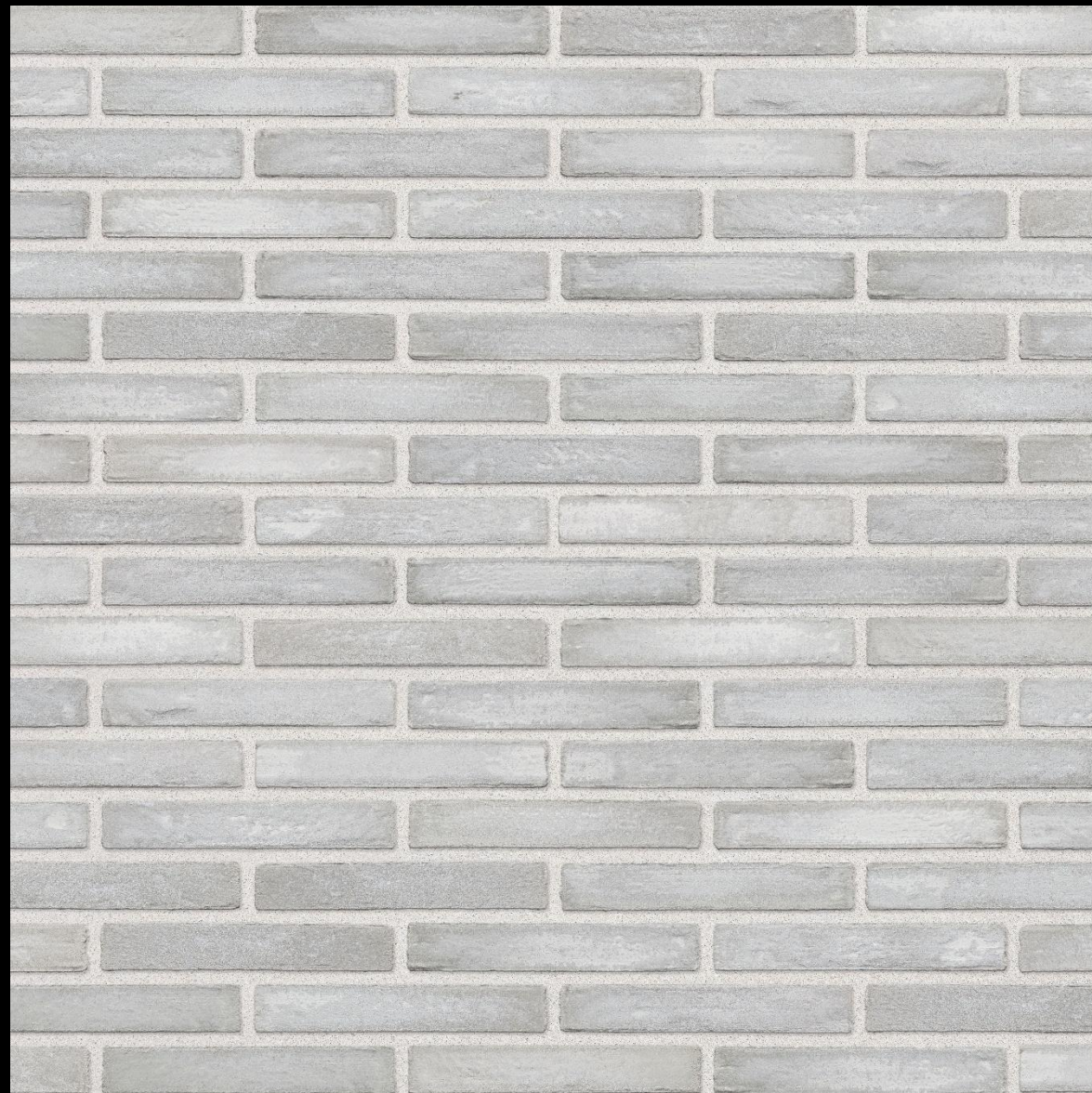
GREY

AVAILABLE SIZES [mm]: 210 x 50 x 80 / 215 x 65 x 102.5

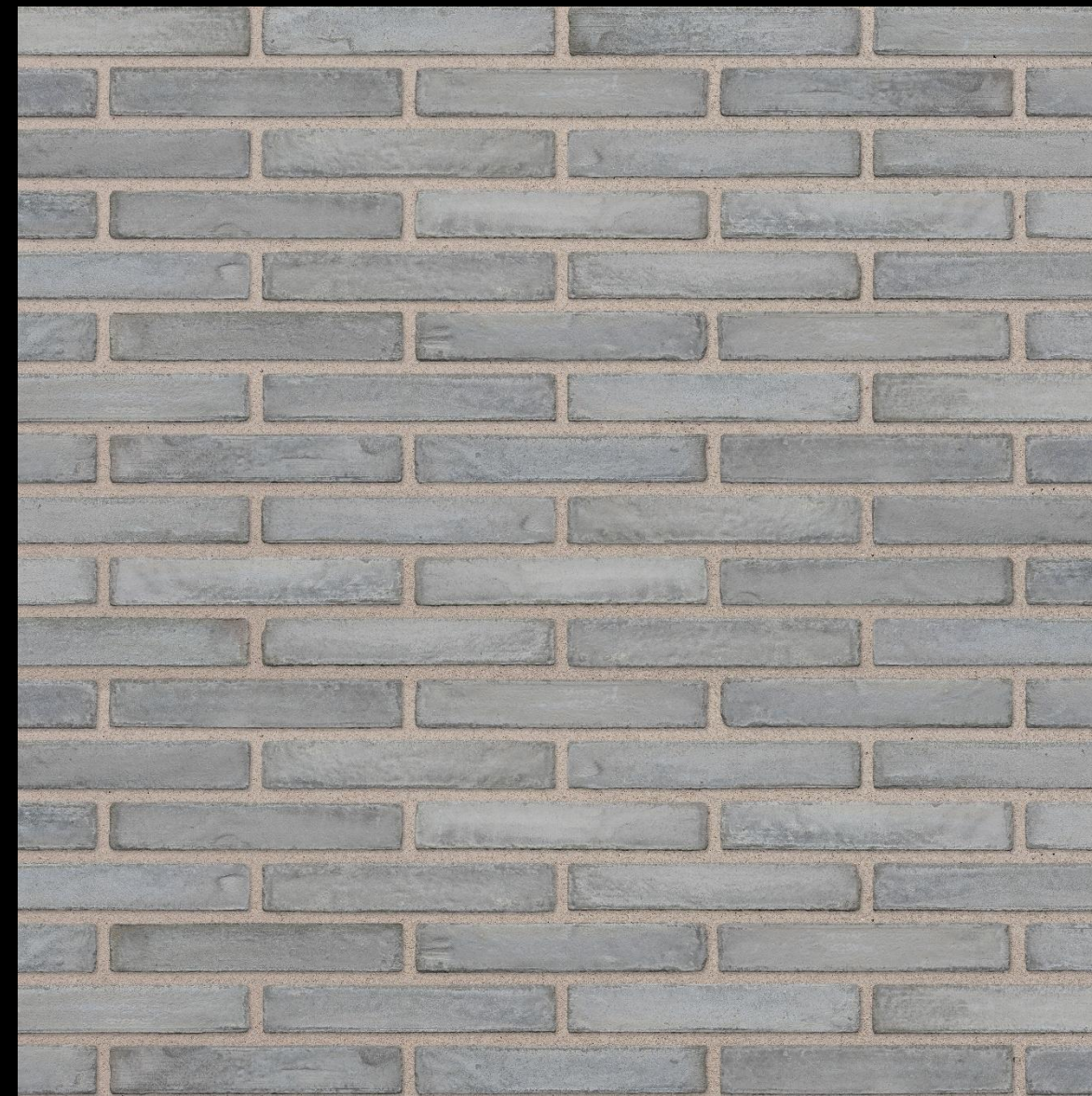
FORMATS: LINEAR



WHITE



WHITE-GREY



GREY

AVAILABLE SIZES [mm]: 240 x 40 x 80

CARBON REDUCTION BY SIZE FORMAT

	215 x 65 x 102.5 Clay Brick	210 x 50 x 80 Lowie Brick	240 x 40 x 80 Lowie Brick	215 x 65 x 102.5 Lowie Brick
% Carbon Reduction	0%	81.3%	81.3%	76.1%
KG CO ₂ /m ²	45.36	8.47	8.47	10.85

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HOW MUCH CO2 WILL I SAVE BY USING LOWIE BRICKS?

Quantity of Bricks	CO ₂ Reduction (Tonnes)
10000 / 167m ²	5.75
50000 / 833m ²	28.76
100000 / 1667m ²	57.52
200000 / 3333m ²	115.03
500000 / 8333m ²	287.58

NATURAL CARBONATION



58%

WHEN THIS PROCESS IS COMPLETE,
58% OF BINDERS' CO₂ EMISSIONS HAVE
BEEN CAPTURED

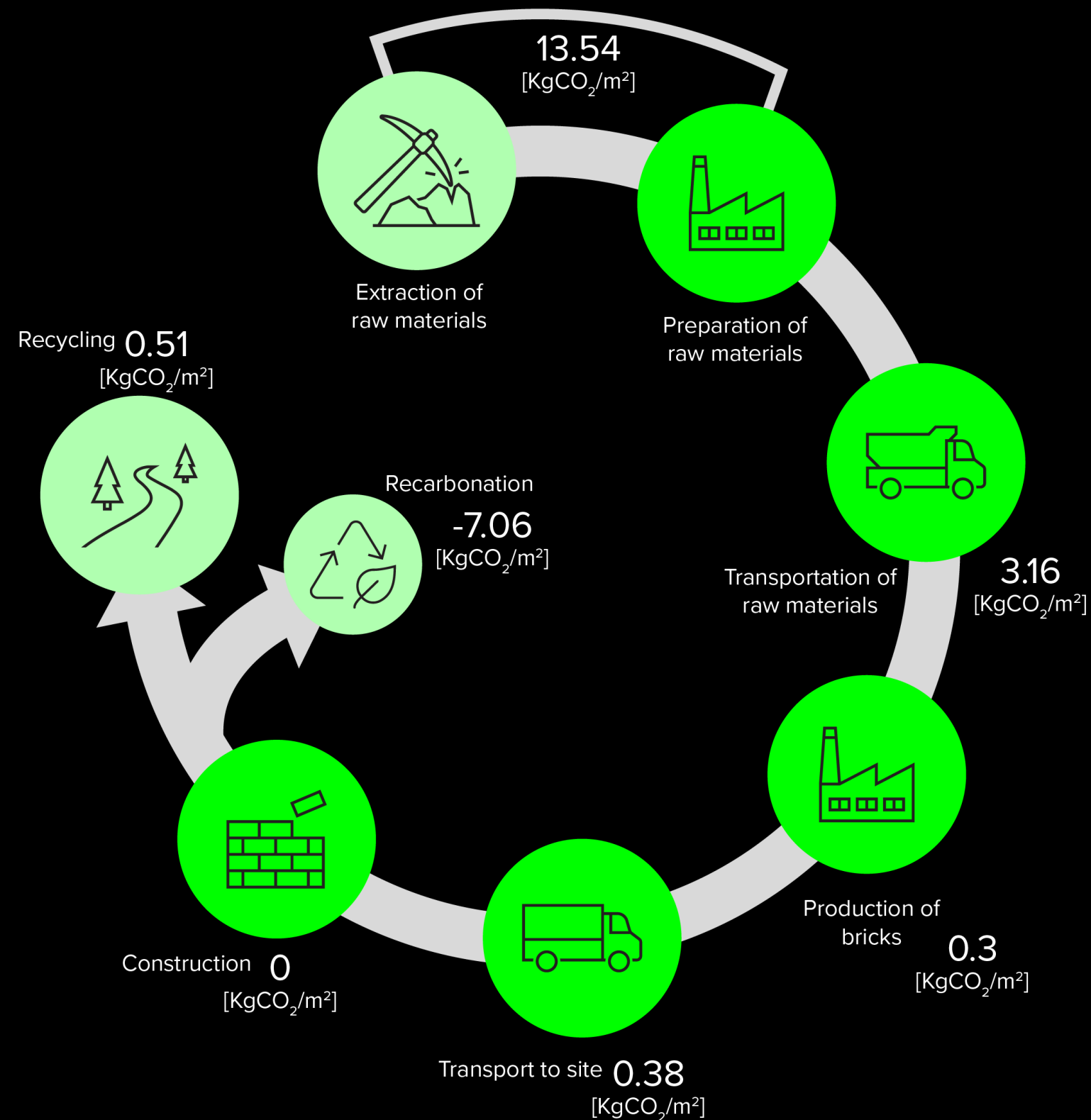
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ENVIRONMENTAL PERFORMANCE STUDY

LIFE CYCLE ANALYSIS

THE LCA HAS BEEN VERIFIED BY AN
EXTERNAL ORGANISATION, APPLYING
FOLLOWING STANDARDS:

GHG PRODUCT LIFECYCLE STANDARD
ISO 14044 STANDARD
CRADLE-TO-GRAVE APPROACH



**TOTAL EMISSIONS OF LOWIE BRICKS =
10.85KG CO₂/M²**

**MAIN EMISSIONS = EXTRACTION OF RAW
MATERIALS**

**CARBONATION = 40% REDUCTION IN
EMISSIONS**

NO MORE ENERGY-INTENSIVE FIRING

REQUIRED TEMPERATURES:

DRYING PROCESS:

SOFT-MUD CLAY BRICK = BETWEEN 3 TO 7 DAYS AT 50° TO 80°.

LOWIE BRICK = **NOT REQUIRED.**

FIRING PROCESS:

SOFT-MUD CLAY BRICK = TYPICALLY 3 DAYS AT 1200 °C

LOWIE BRICK = **UNFIRED**

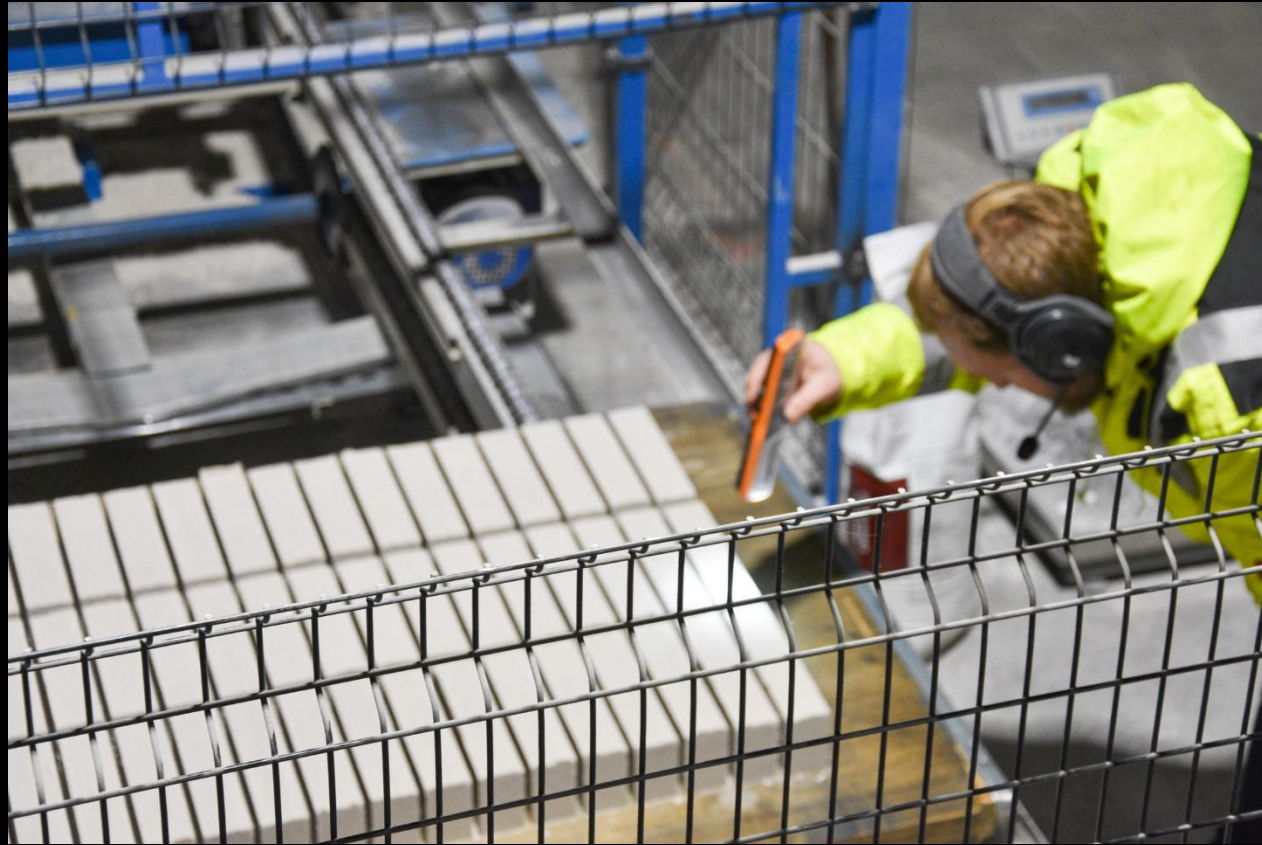
EMISSION PRODUCTION:

SOFT-MUD CLAY BRICK = 4.96 KgCO₂/m²

LOWIE BRICK = **0.29 KgCO₂/m²**

**= 94.2%
REDUCTION**

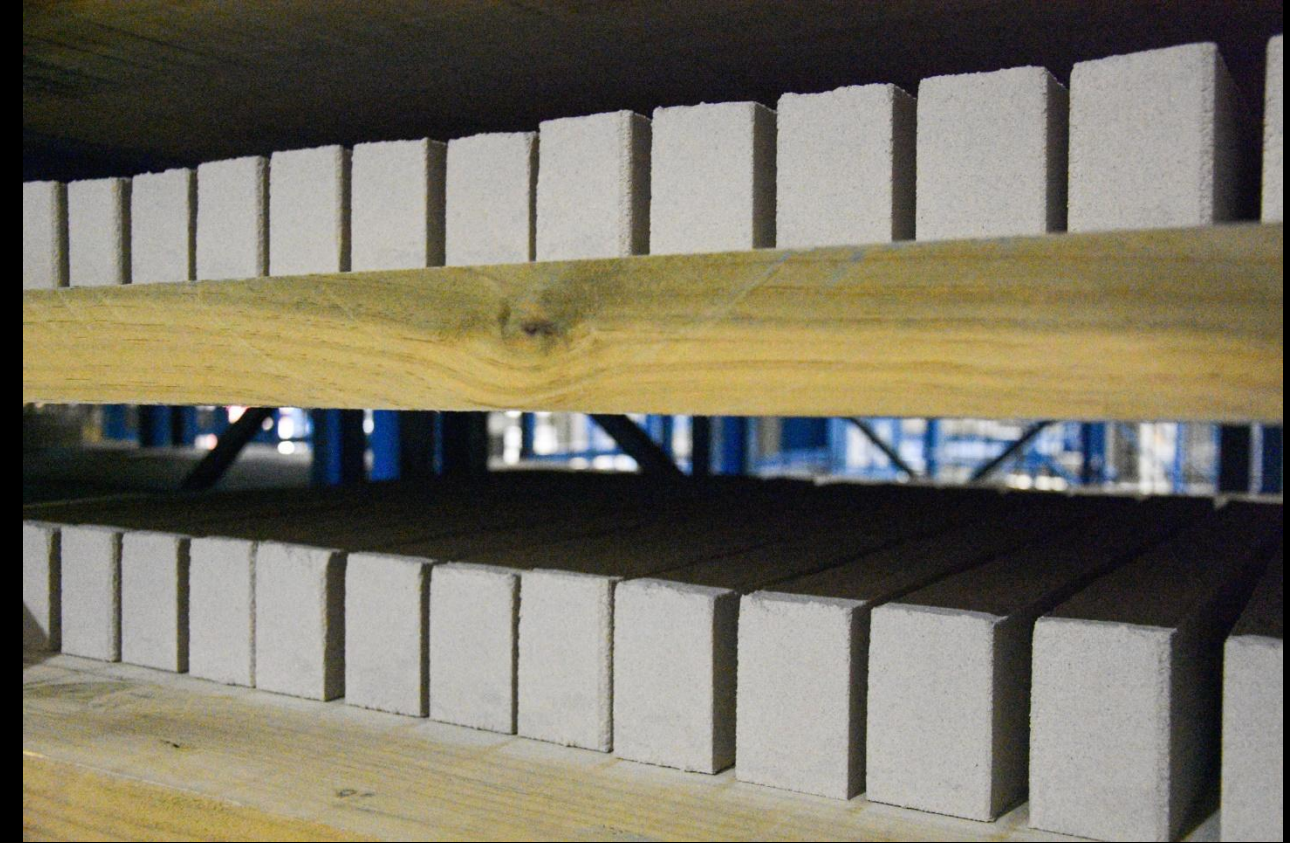
PRODUCTION PROCESS



INSPECTION / AUTOMATED STOWAGE

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PRODUCTION PROCESS



CURING

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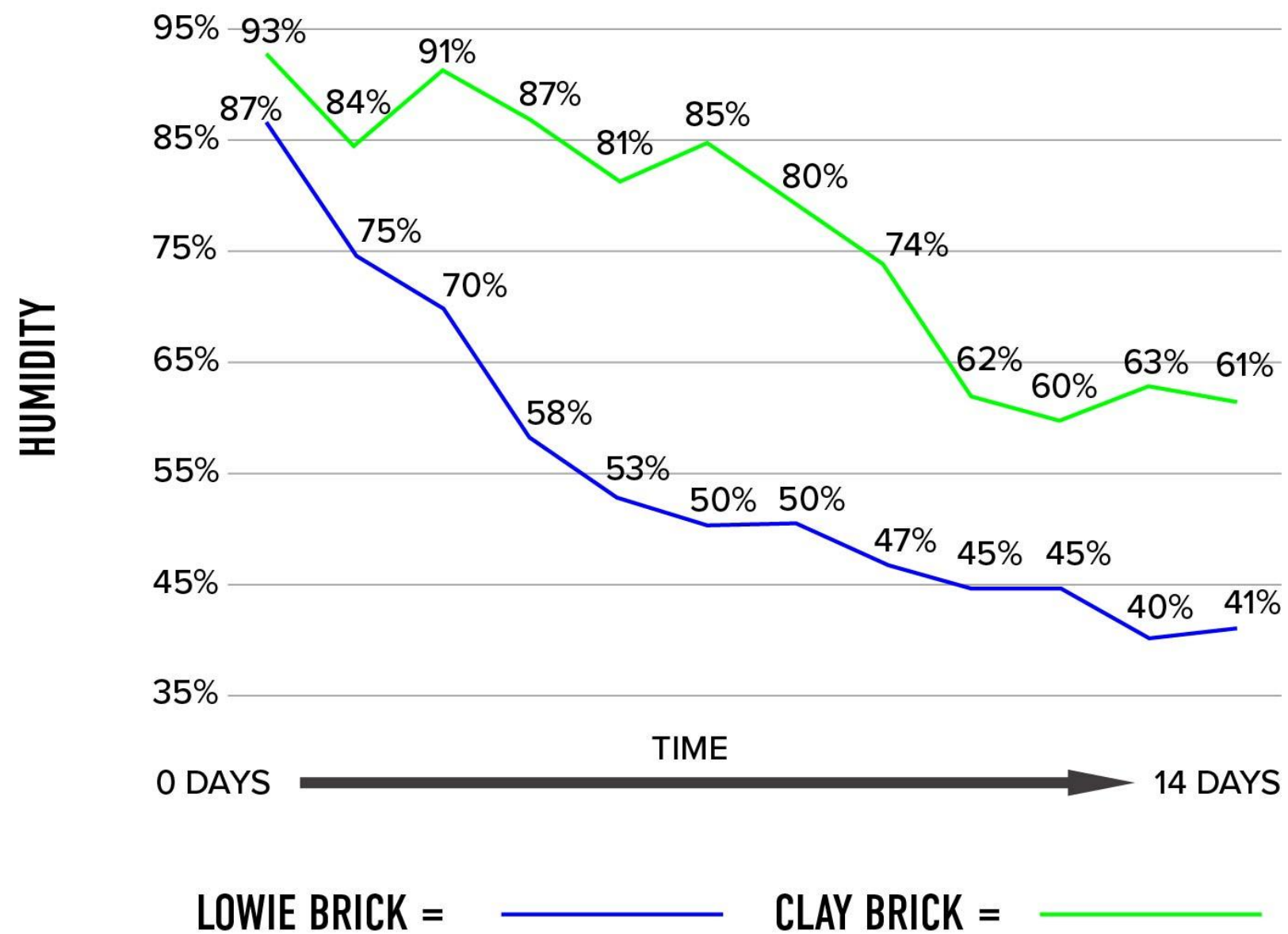
COMPOSITION

- Granulate < 2mm
- Monotonous structure
- Higher moisture movement
- Technical performance resembles clay brick
 - Aesthetically similar to clay brick
- **Locally sourced aggregates** reduce transport emissions.
- Permanent carbon capture through natural carbonation



MOISTURE MOVEMENT

DEHYDRATION TEST



THE HIGH MOISTURE MOVEMENT OF LOWIE BRICKS HAS SEVERAL ADVANTAGES:

- DRIES OUT FASTER THAN CLAY
- REACHES FINAL COLOUR IN DAYS INSTEAD OF MONTHS
- IT IS EASY TO PROCESS

DURABILITY



F2 RATING

100 FREEZE/THAW CYCLE TEST
CONDUCTED BY AN INDEPENDENT LABORATORY

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COMPRESSIVE STRENGTH

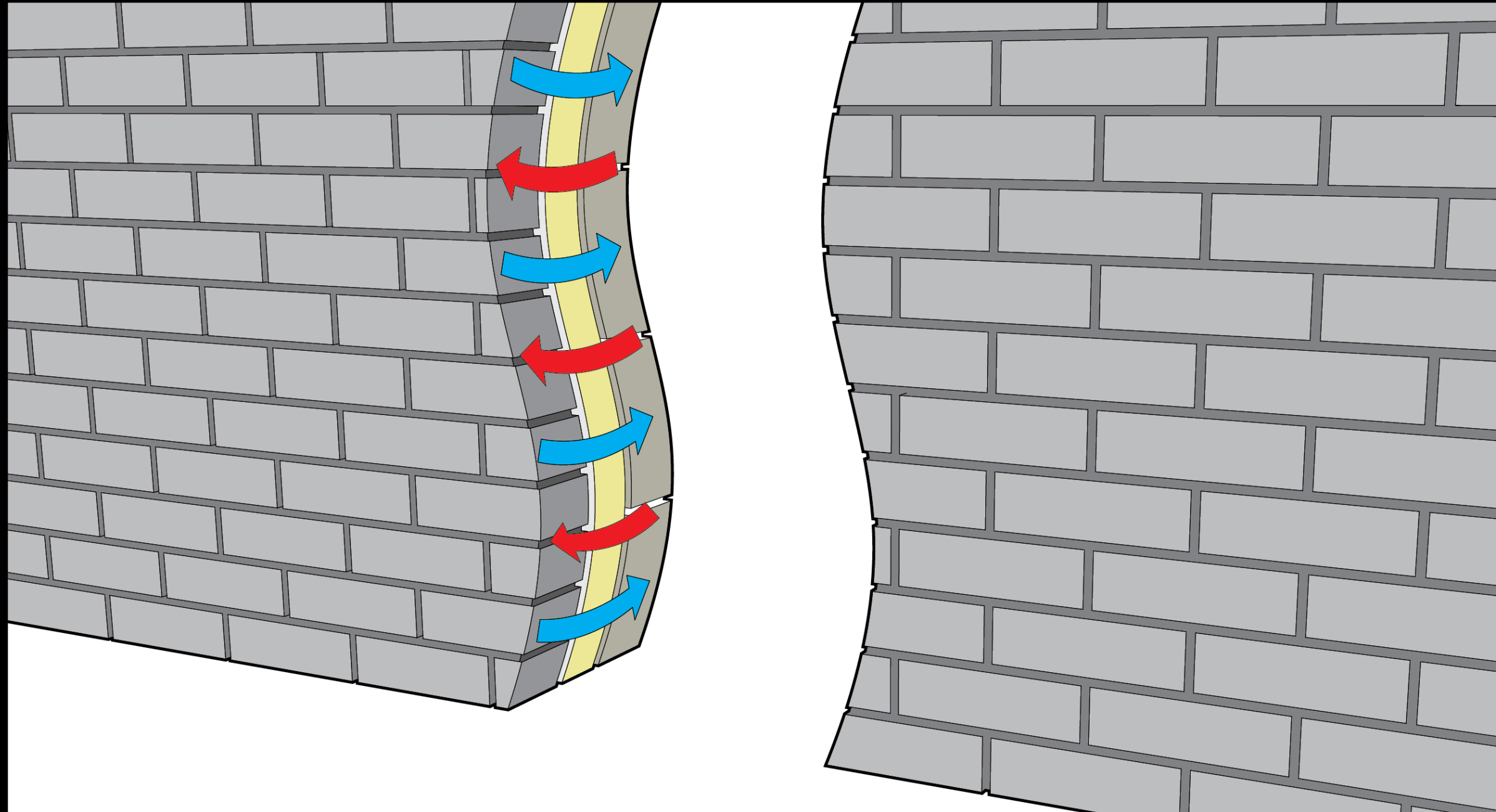


20 N/MM² STRENGTH OVER THE BEDDING FACE OF 215MM X 102.5MM RESULTS IN A RESISTANCE OF 44,944KG PER BRICK. FOR LOWIE BRICKS WEIGHING ABOUT 2.5KG THIS IS A WALL OF:

15,772 BRICKS OR 1,183M HIGH!

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THERMAL CONDUCTIVITY



USING LOWIE BRICKS CAN CONTRIBUTE TO LOW U-VALUES AND BETTER ENERGY PERFORMANCE
LOWIE BRICKS K VALUE = $0.62 \text{ W/(m} \cdot \text{k)}$

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RECYCLING AND REUSE APPLICATIONS

- CAPPING AND SUB-BASE LAYERS (TYPE 1/TYPE 3)
- PILING MATS & HARDSTANDING BUILD UPS
 - TEMPORARY WORKS PLATFORMS
- ENABLES ON-SITE OR LOCAL PROCESSING WITH A DEFINED END-OF-LIFE ROUTE

IN COMPARISON

	LOWIE FACING BRICKS	SOFT MUD CLAY FACING BRICKS	CLAY WIRE-CUT FACING BRICKS	CONCRETE BRICKS
European Standards	EN 771-1: Part 1: Clay masonry units EN 771-3: Part 3: Aggregate concrete masonry units	EN 771-1: Part 1: Clay masonry units	EN 771-1: Part 1: Clay masonry units	EN 771-3: Part 3: Aggregate concrete masonry units
Compressive Strength	≥ 20N/mm ²	≥ 10 N/mm ² - 25N/mm ²	≥ 30 N/mm ² - 65N/mm ²	≥ 2 N/mm ² - 40N/mm ²
Water Absorption	<14%	<10-25%	<6-16%	<5-9%
Size Tolarence	T2	TM, T1, T2	TM, T1, T2	D1, D2, D3
Composition	Natural sands and minerals, sustainable binders	Excavated clay, sand and additives	Excavated clay, sand and additives	Produced from naturally occurring aggregates, portland cement, various admixtures and supplements
Durability	F2	F0, F1, F2	F0, F1, F2	C7-C15 (F0), C16-C21 (F1), C22+ (F2)
Soluble Salts	S2	S1, S2	S1, S2	N/A
Fire Rating	A1	A1	A1	A1

PLEASE NOTE: THE ABOVE TABLE PROVIDES A GENERAL OVERVIEW. VARIATIONS CAN OCCUR BASED ON SPECIFIC MANUFACTURING PROCESSES AND COMPOSITIONS. DIFFERENT MANUFACTURERS MAY PRODUCE CONCRETE OR CLAY BRICKS WITH VARYING SPECIFICATIONS.

PRODUCT DEVELOPMENT

- BUFF/YELLOW SUMMER 2026
- RED AND ORANGE NEXT, Q4 2026
- OTHER SHADES AND MULTITONES EARLY 2027



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CASE STUDY

- FIRST UK PROJECT – 28 HOUSES
- 422,000 LOWIE BRICKS
- SWITCHED FROM SOFT MUD CLAY FIRED BRICK TO LOWIE
- SAVING 242 TONNES OF CO2 EMISSIONS



CASE STUDY

- APARTMENT BLOCK IN NORTH LONDON
- LOWIE SELECTED FOR AESTHETIC QUALITIES
- 182,000 BRICKS
- SAVING 104 TONNES OF CO2 EMISSIONS







CERTIFICATE CARBON FOOTPRINT - PRODUCT

A comprehensive CO₂e (carbon dioxide equivalent) footprint was calculated for the full life cycle for one pallet of 800 Lowie Bricks, produced by Lowie Bricks (Belgium).

What did we investigate?

The calculation of the Product Carbon Footprint of one pallet Lowie Bricks, consisting of 800 bricks which do not longer rely on energy intensive high temperature furnacing.

How did we investigate this?

The product carbon footprint was calculated according to the GHG Protocol Product Life Cycle Standard.

Based on the principles of a Life Cycle Assessment according to the Cradle-to-grave.

- All elements of the life cycle of the product have been taken into account.
- Calculations were made based on direct usage data from Lowie Bricks.
- Estimates and approximations were made based on scientific literature study and the international Ecolnvent database.

Investigators result:

The calculations are made for 1 pallet of 800 Lowie Bricks, which are characterized by their high carbonation rate in the use stage:

- Total (including CO₂e uptake): 82,19 kg CO₂e/pallet

Investigation period:
28/04/2023 – 31/01/2024

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Awarded on January 31st 2024 by
Ans Grauls, Project Engineer Carbon Strategy, Encon

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