

Rewards



Workshop européen 2025

**SHARING KNOWLEDGE FOR REDUCING
IMPACTS**

GROUP 5 : DESIGN AND FABRICATE UNIQUE TILE SHAPE USING
3D PRINTING

THE TEAM

THE VIDEOMAKER



Lou-lynn

THE PHOTOGRAPH



Agatha

THE DESIGNER



Thomas

THE 3D MAKER



Kelian

THE MANAGER



Nathan



THE CONCEPT

In France, **160,000 tonnes of coffee grounds** are produced every year, and there are **over 3,500 coffee shops** throughout the country. Coffee grounds can be reconsidered as a material for producing bio-sourced decorative tiles from a 12 cm² module. Three dies will be manufactured using a 3D printer, enabling the creation of unique decorations.

These tiles could be displayed in concept stores, where the emphasis is on immersion, with decoration that appeals to the **sense of touch and smell**, underlining the strength of the concept in terms of **sustainability and waste management**.

COFFEE GROUNDS ?

The addition of coffee to our project is not only part of an ecological approach but also brings an aesthetic and sensory dimension. The natural pigment of coffee creates warmer tones on our clay tiles. By incorporating coffee, the tiles release a scent that can **stimulate the senses** while also helping to **absorb strong odors**.

ORGANISATION OF THE WEEK

24/02

25/02

26/02

27/02

28/02



MONDAY

- Brainstorming and sketching
- Establishing the context
- Designing the mold

TUESDAY

- Starting 3D printing
- Completing the mold design
- Beginning to establishing component lists

WEDNESDAY

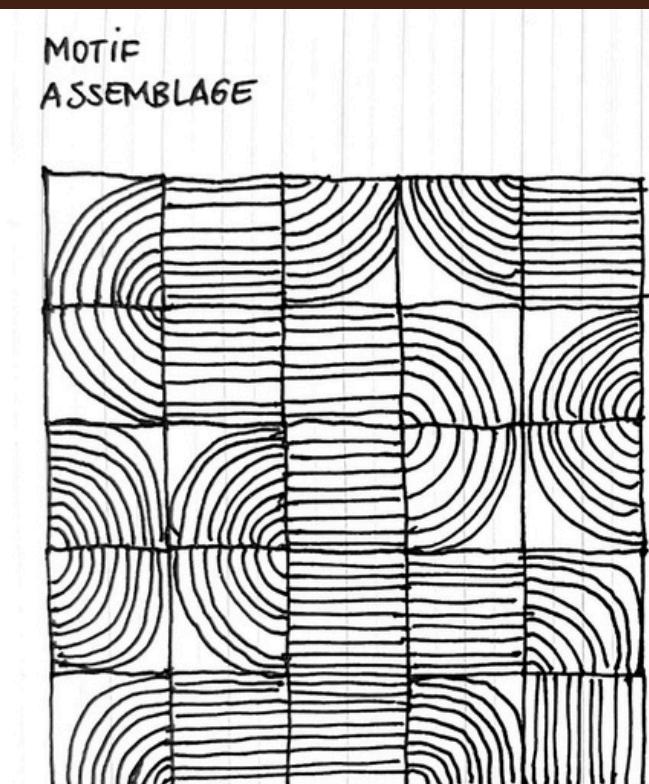
- Trying the first 3D printed mold
- Establishing the matrix
- Creation of the matrix with different dosages

THURSDAY

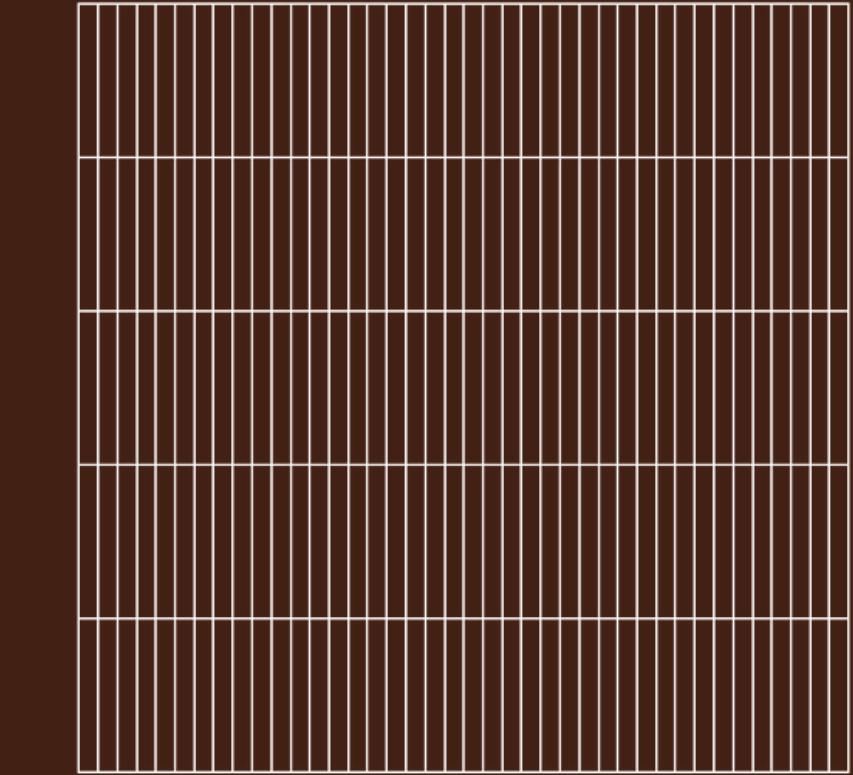
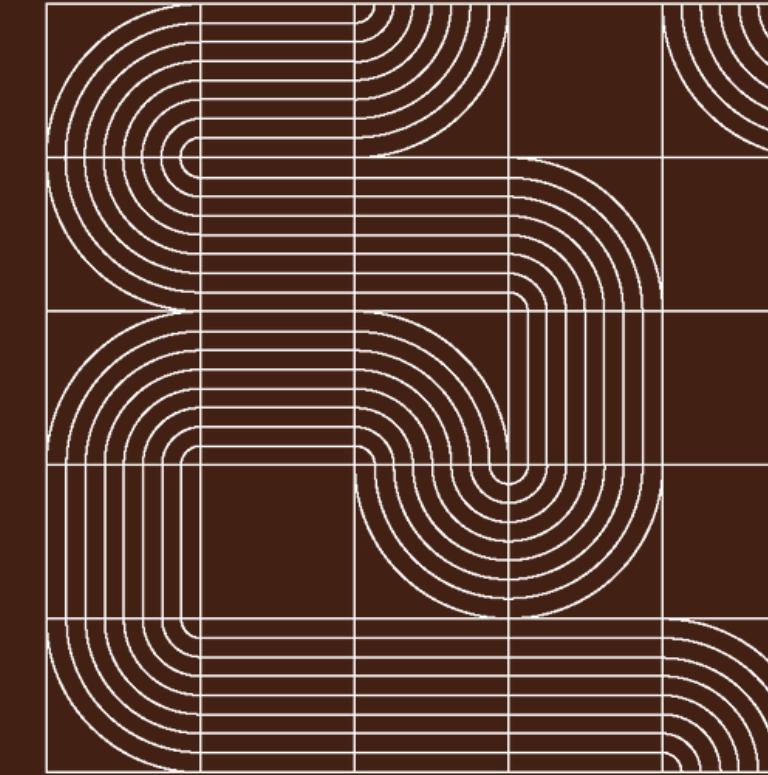
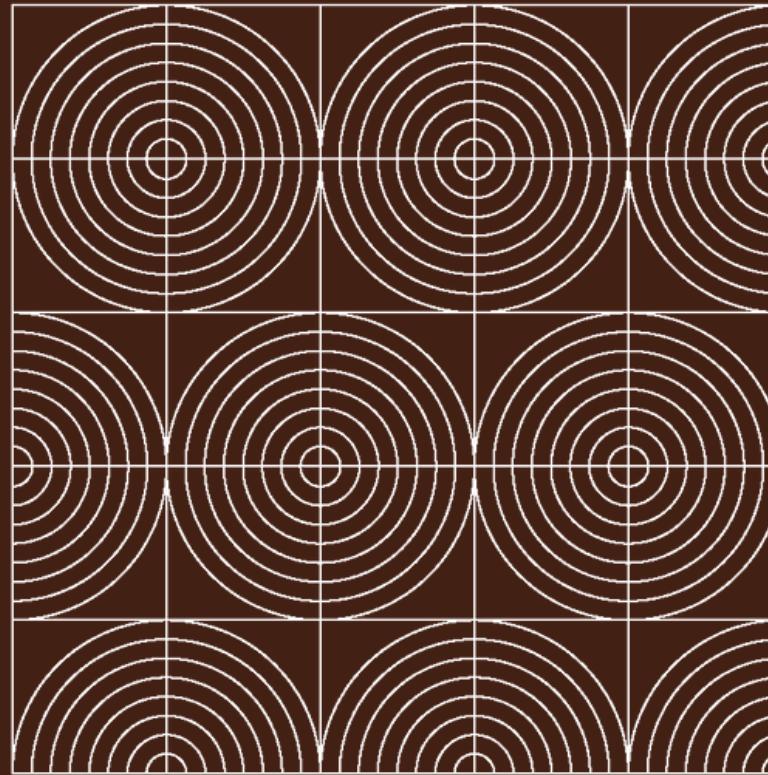
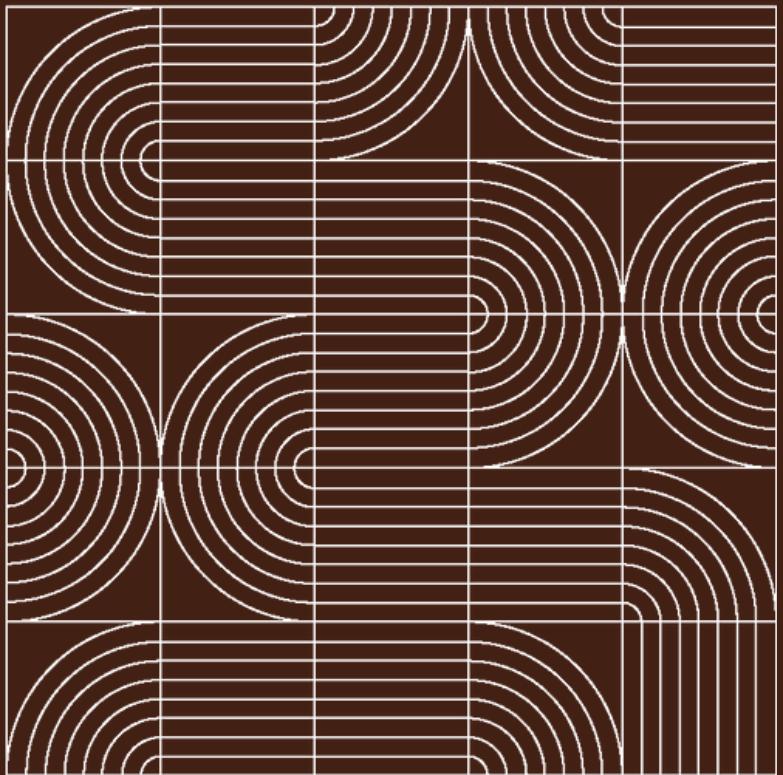
- Finalising the mold improvement
- Searching for the final recipe
- Starting producing final tiles

FRIDAY

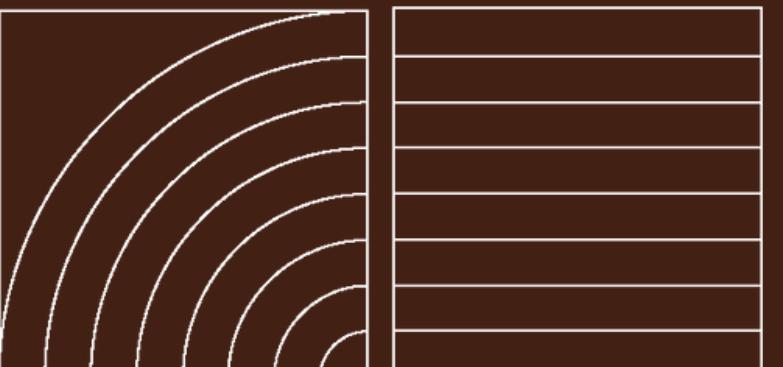
- Validation of the final recipe
- Finalising production of tiles
- Preparing the presentation



THE DESIGN



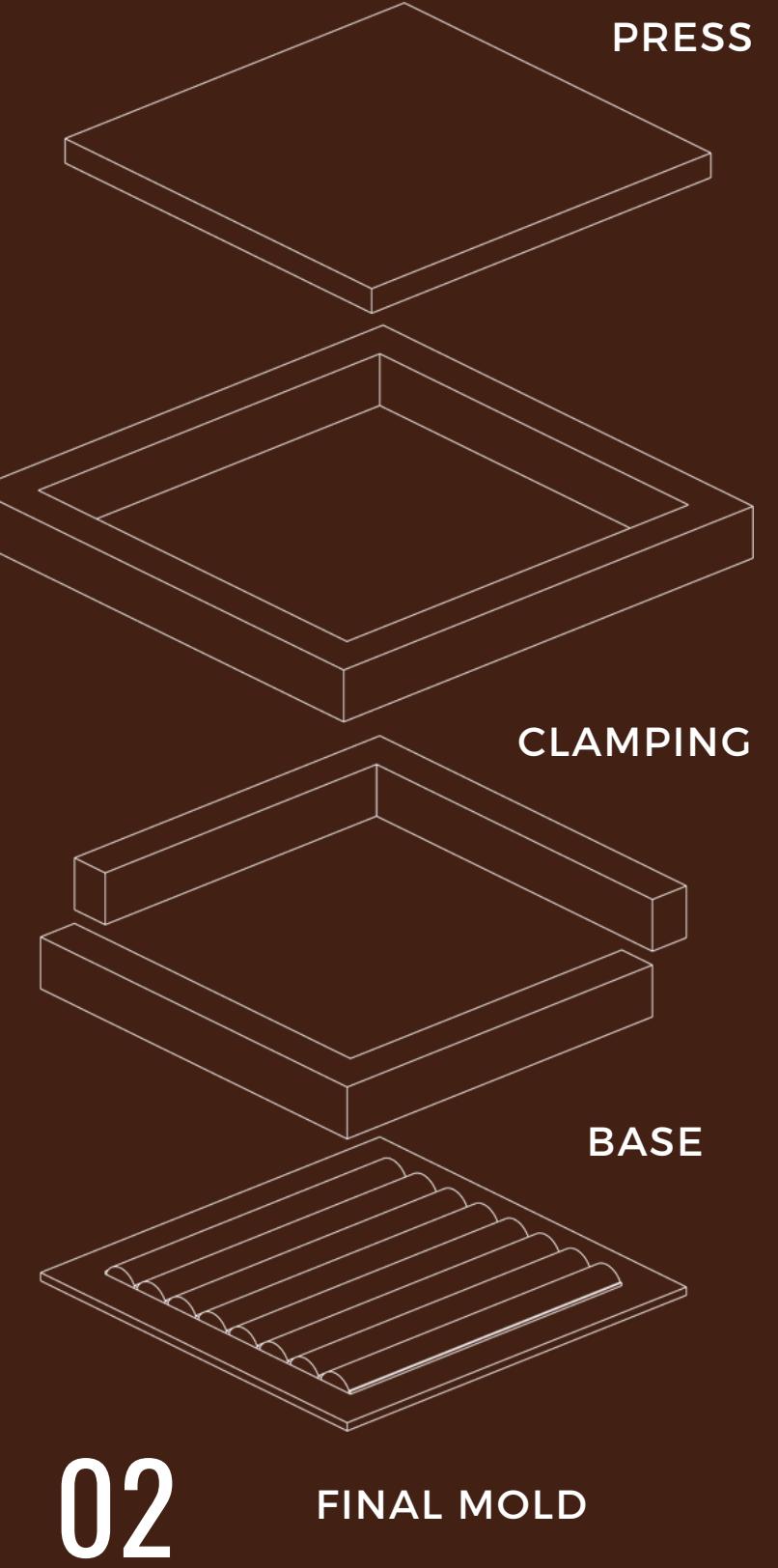
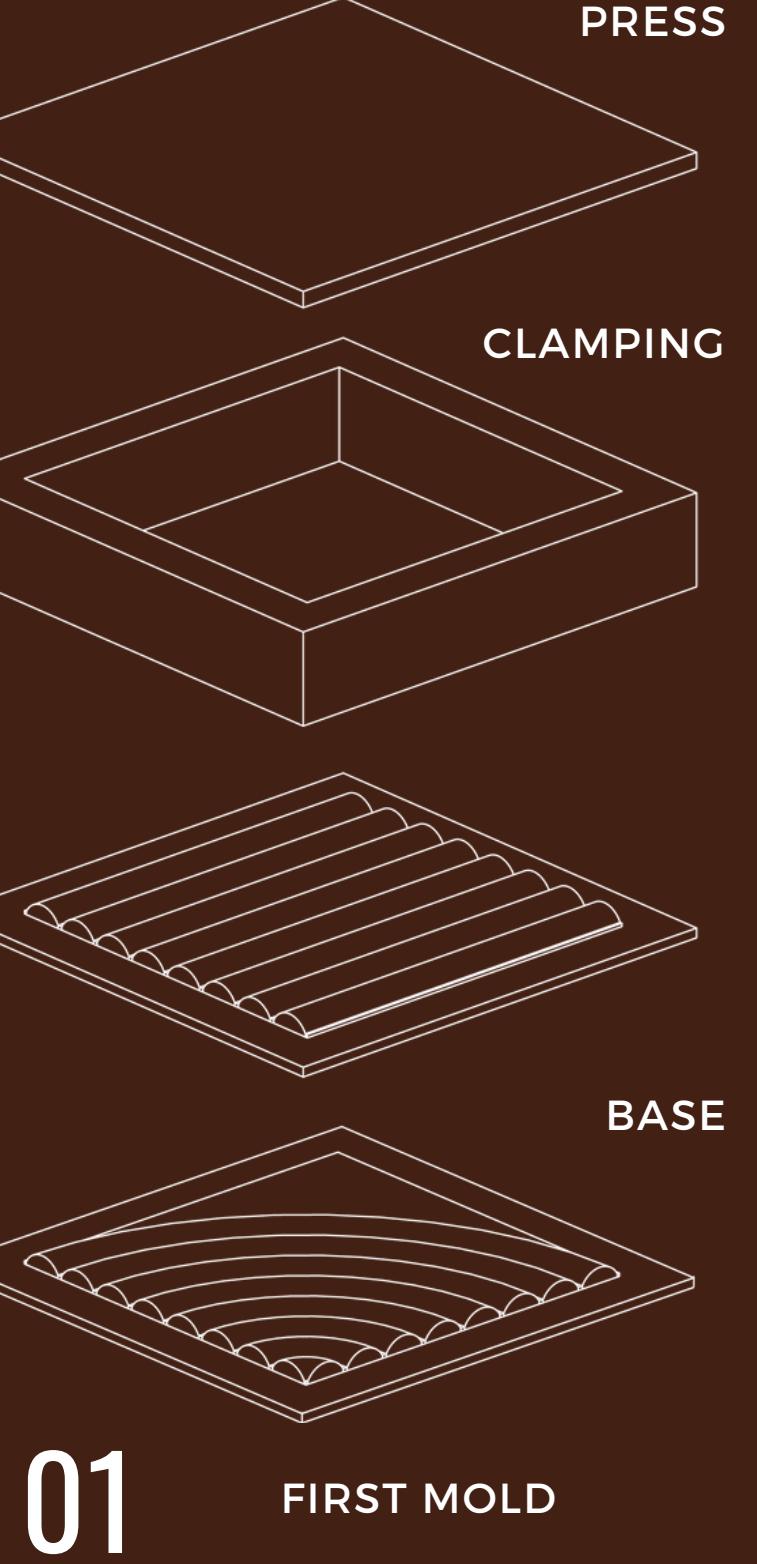
LINEAR PATTERN



CURVE PATTERN

Our initial idea was to design a tile specifically for coffee shops and concept stores. Its pattern, inspired by the flow of coffee, creates a sense of movement and allows for multiple composition possibilities with two different matrices.

THE MAKING OF THE MOLD



3D PRINTED FINAL MOLDS

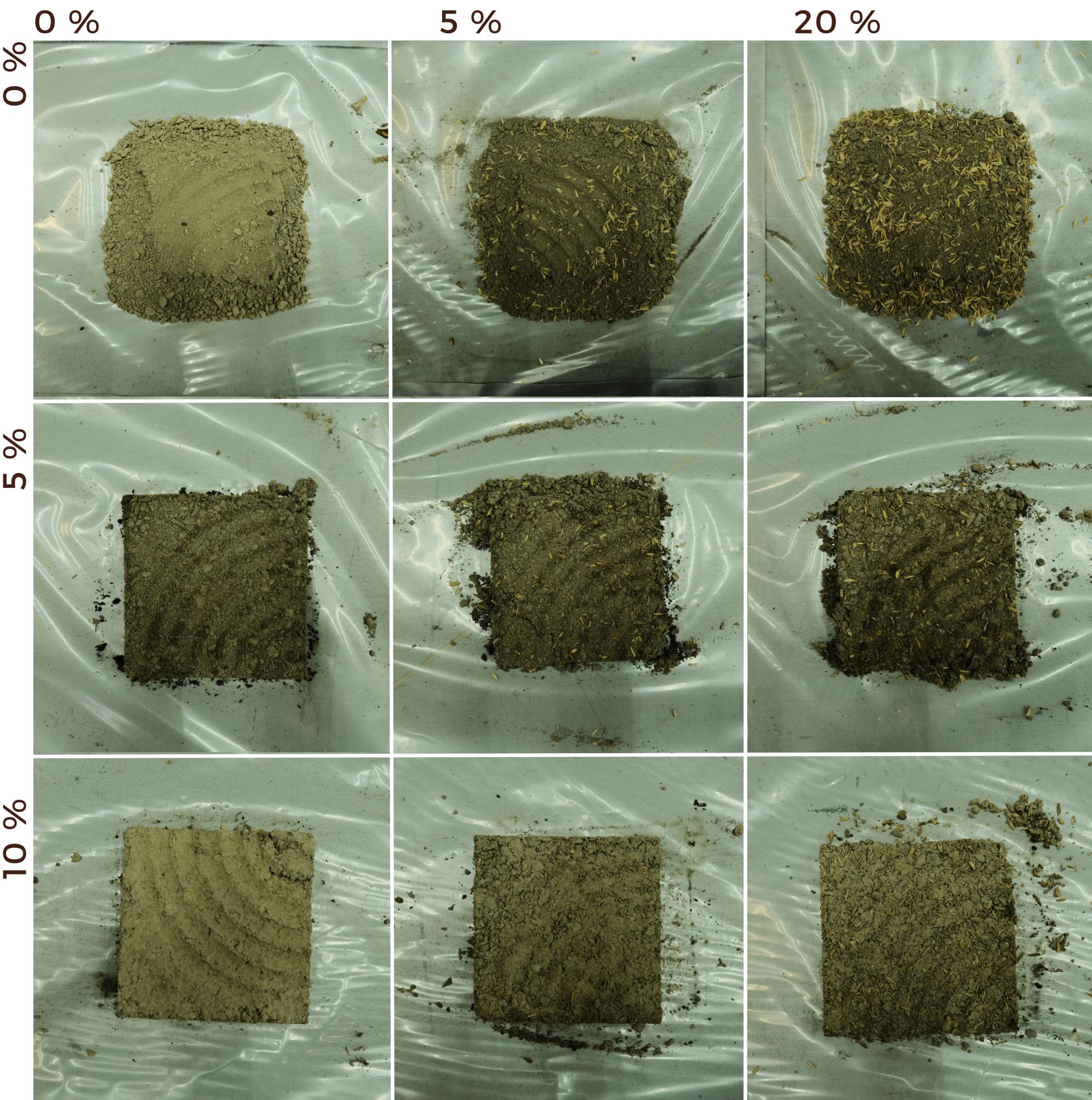


EXPERIMENTING

FIBERS & WATER PROPORTIONS MATRIX

The matrix consists of a base of earth to which varying proportions of water and fibers, ranging from 0 to 20%, are added. This experiment allows us to observe how the earth behaves depending on the added components. In the first case, with 0% water and 0% fiber, the earth does not hold together. As more of either component is added, its cohesion improves, up to a point where an excess of water causes it to break down. It is also observed that fiber plays a crucial role in binding the earth and water, significantly enhancing their cohesion.

WATER PROPORTION





1st TEST



1 CUP OF SOIL
1 CUP OF COFFEE GROUNDS
1 CUP OF SAWDUST
1/2 CUP OF RICE HUSKS
1 CUP OF WATER

- ✖ Very low strengthness
- ✖ No pattern possibility
- ✓ Nice coffee color and smell

TOO CRIMBLE



2nd TEST



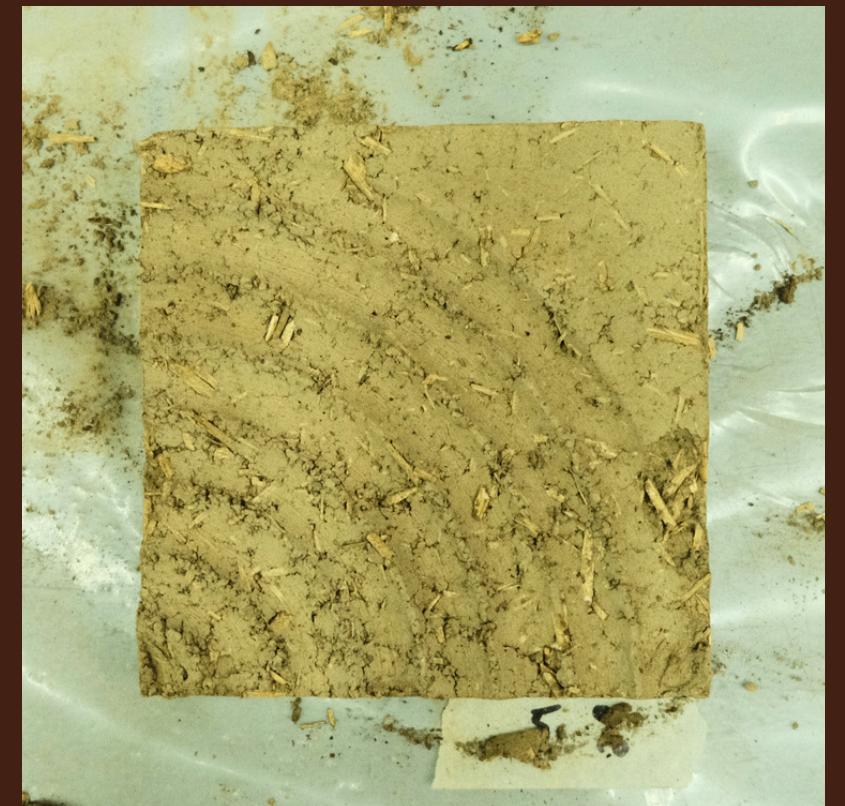
1.5 CUP OF SOIL
1.5 CUP OF COFFEE GROUNDS
1/2 CUP OF HEMP
1/2 CUP OF WATER

- ✖ Very low strengthness
- ✖ No pattern possibility
- ✓ Nice coffee color and smell

LOOKING WEIRD



3rd TEST



2 CUPS OF SOIL
1 CUP OF CLAY
1/2 CUP OF HEMP
1/2 CUP OF WATER

- ✖ Low strengthness
- ✖ Average pattern possibility
- ✖ No coffee color or smell

NO REAL QUALITY

4th TEST

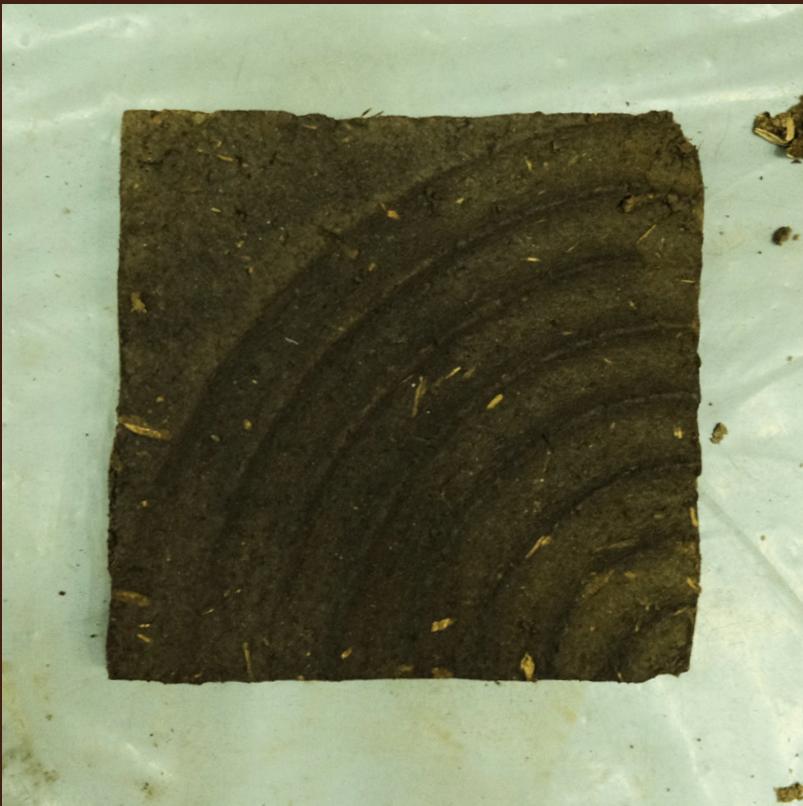


1 CUP OF SOIL
3 CUPS OF CLAY
1/2 CUP OF COFFEE GROUNDS
1 CUP OF HEMP
1 CUP OF WATER

- Good strengthness
- Clear pattern
- Low coffee color and smell

NICE BUT COFFEE IS MISSING

5th TEST

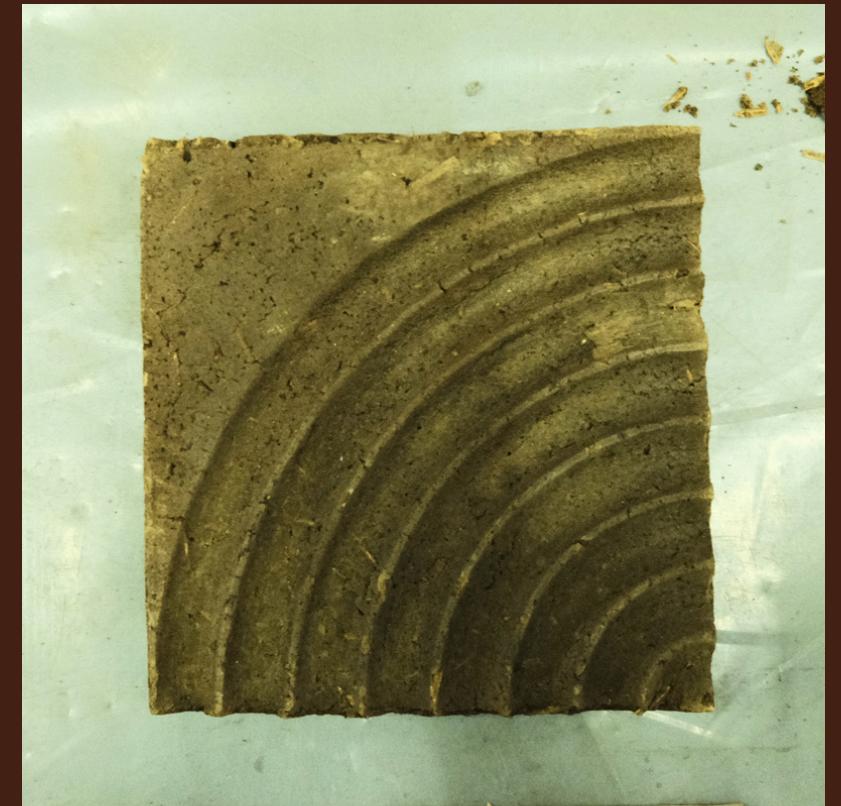


1 CUP OF SOIL
1 CUP OF CLAY
1 CUP OF COFFEE GROUNDS
1/2 CUP OF HEMP
1,5 CUP OF WATER

- Average strengthness
- Clear pattern
- High coffee color and smell

A BIT RISKY

6th TEST



1,2 CUP OF SOIL
1,2 CUP OF CLAY
1 CUP OF COFFEE GROUNDS
1/2 CUP OF HEMP
1,1 CUP OF WATER

- Good strengthness
- Clear pattern
- Nice coffee color and smell

THATS IT !

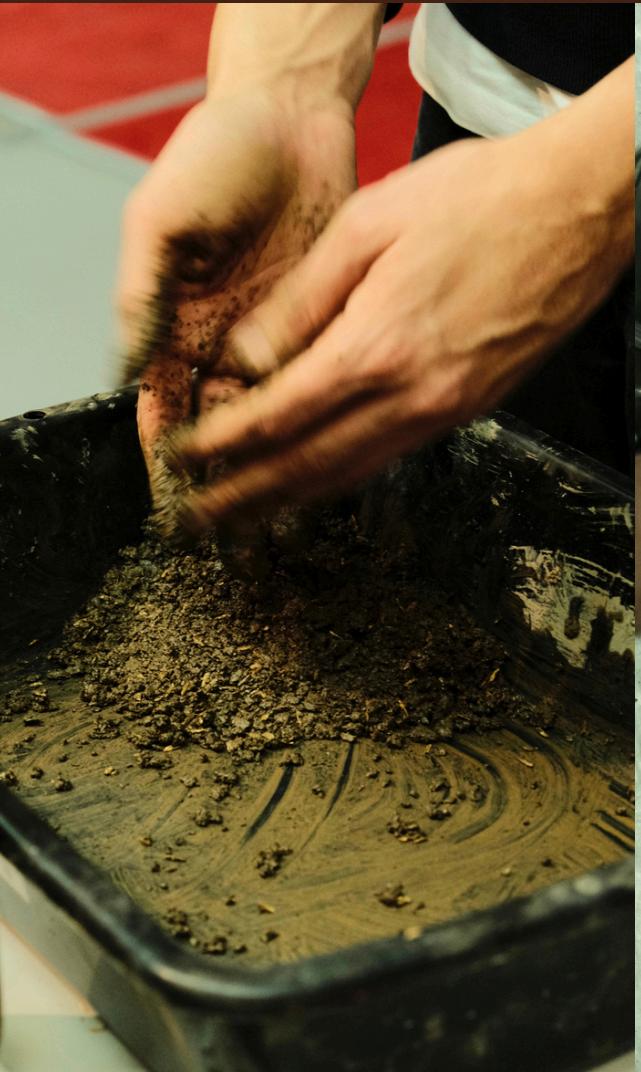
TILE FABRICATION

01



DOSAGE OF
COMPONENTS

02



HANDLY MIX
MATERIALS

03



MOLD ASSEMBLAGE
AND PREPARATION

04



MODEL
PREPARATION

05

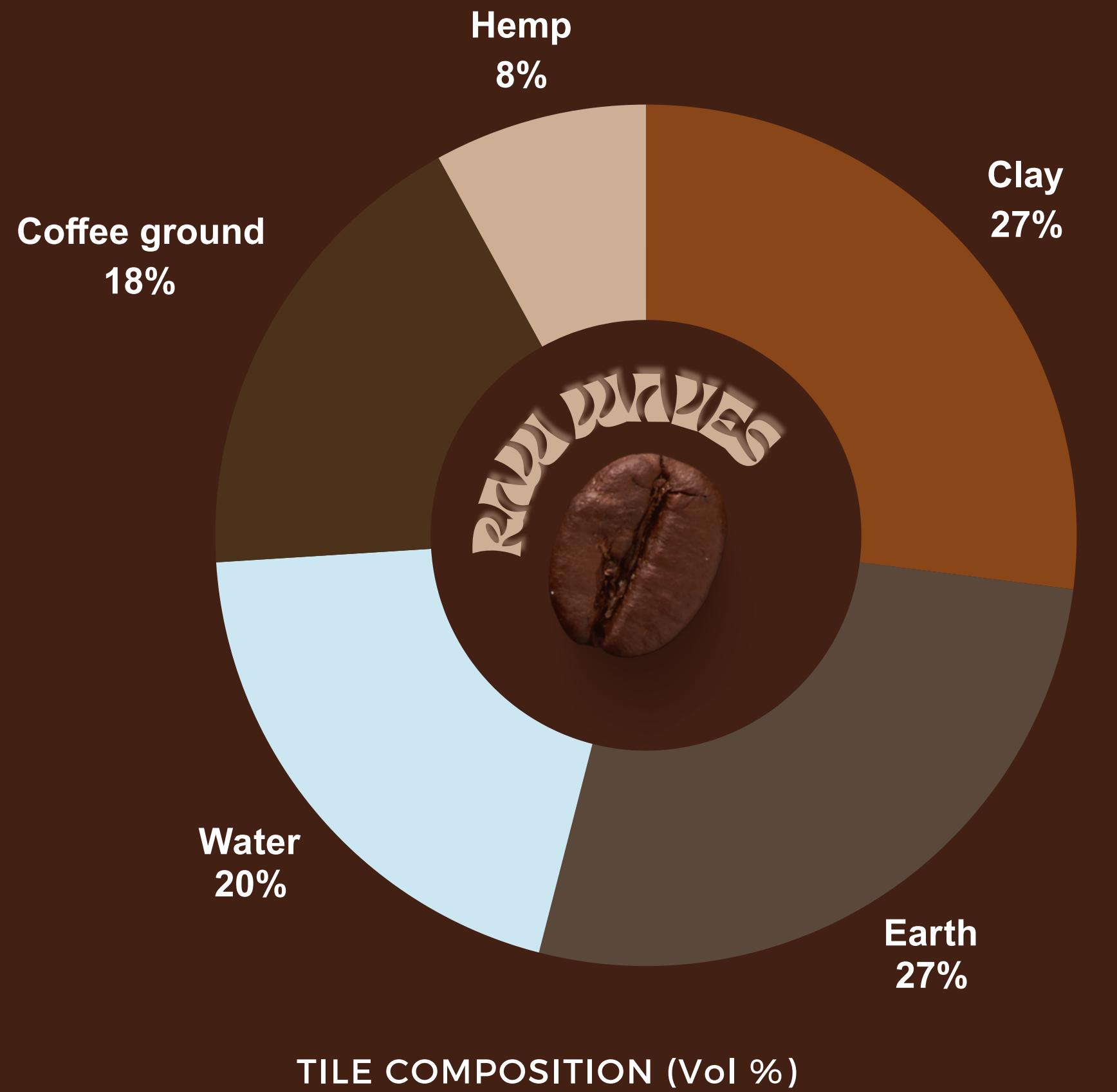


COMPACTON WITH
PRESS AND MALLETT

06

THEN LET IT DRY FOR 24 HOURS...

THE RESULT



WEIGHT
280 g

SIZE
12 x 12 x 1,8 cm

PATTERNS
curve waves
linear waves



THE SECRET INGREDIENT... HAVING FUN!

