

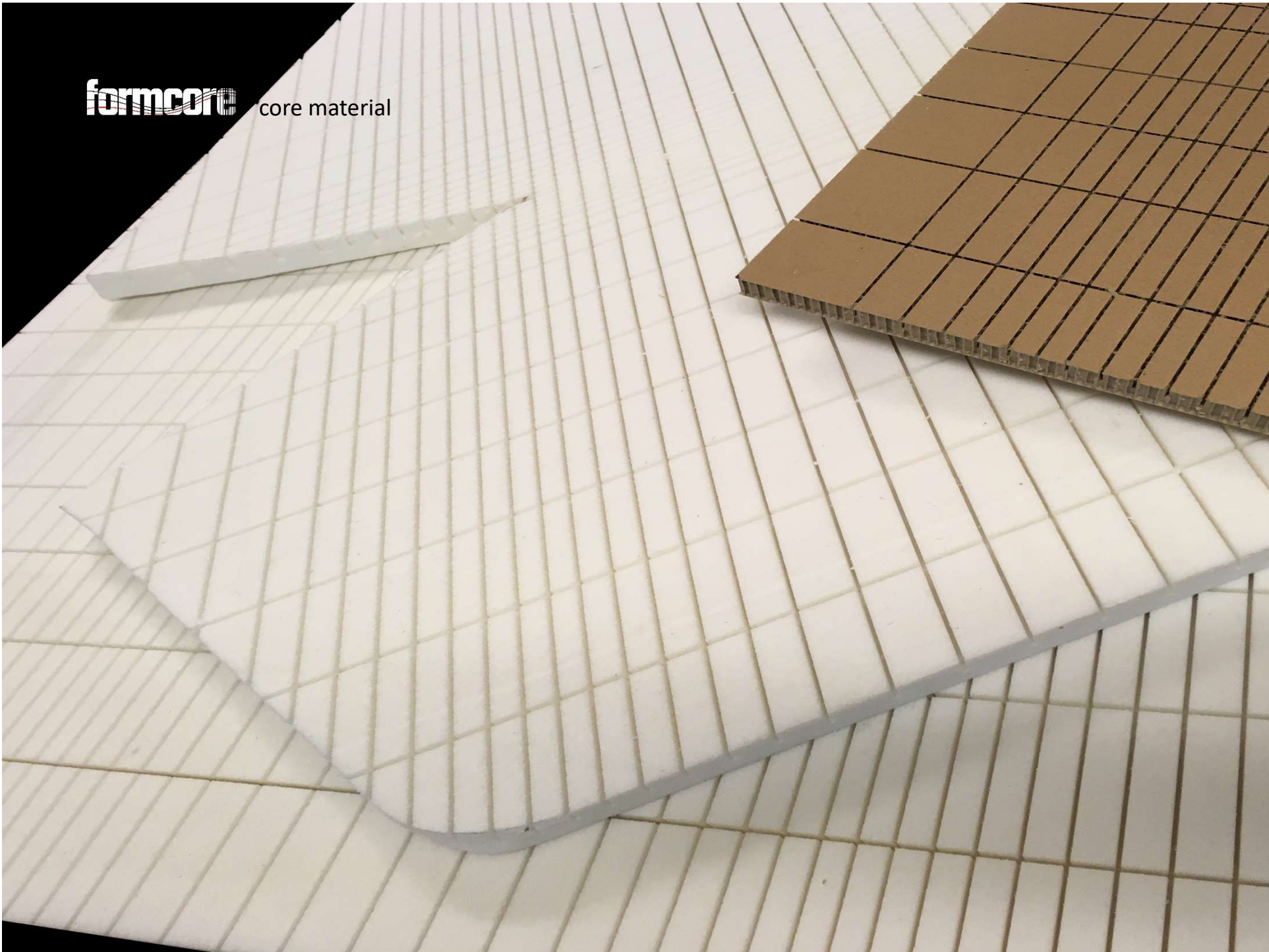
formcore

the economic production process for freeformed sandwich elements

troi.composite *components*

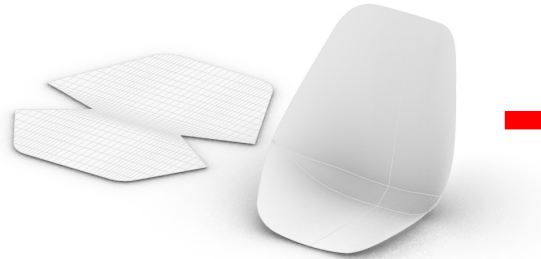
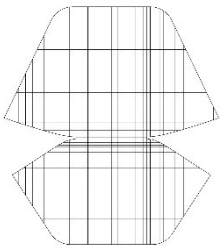
formcore

core material

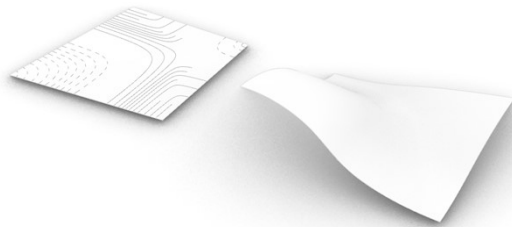
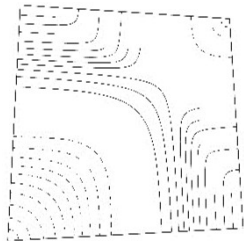


formcore concept

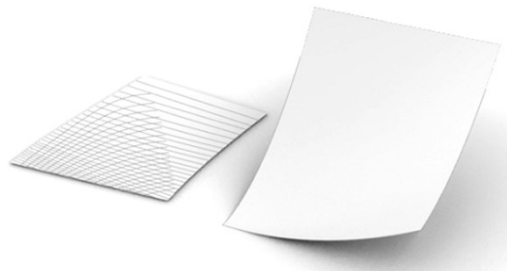
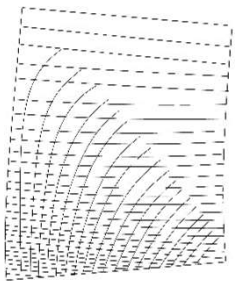
Formcore are core material plates with a unique **slit pattern concept**, that enables the production of free-formed sandwich elements without using moulds or tools, so that the production of single items or small number of pieces get's economically feasible.



furniture



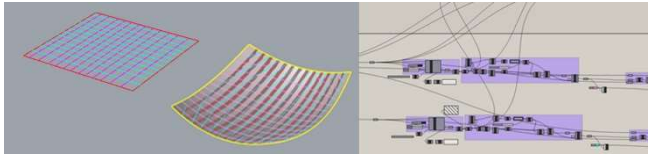
interior design



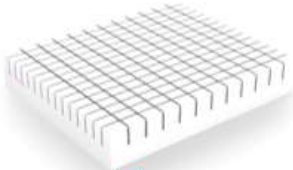
facade



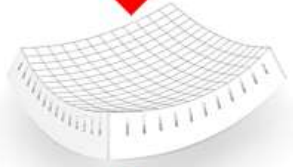
formcore process



_____ **definition** of slit pattern with *formcore unroll software*



_____ **slitting** of the core material (PET, Balsa, EPS, XPS, MDF, HPB)



_____ **forming** with evacuation process in vacuum bag



_____ **fixing** of the form with optionally thermo process (for thermo-plastic core material), glueing, addition of top sheet (FRP) or coating (Polyurea)

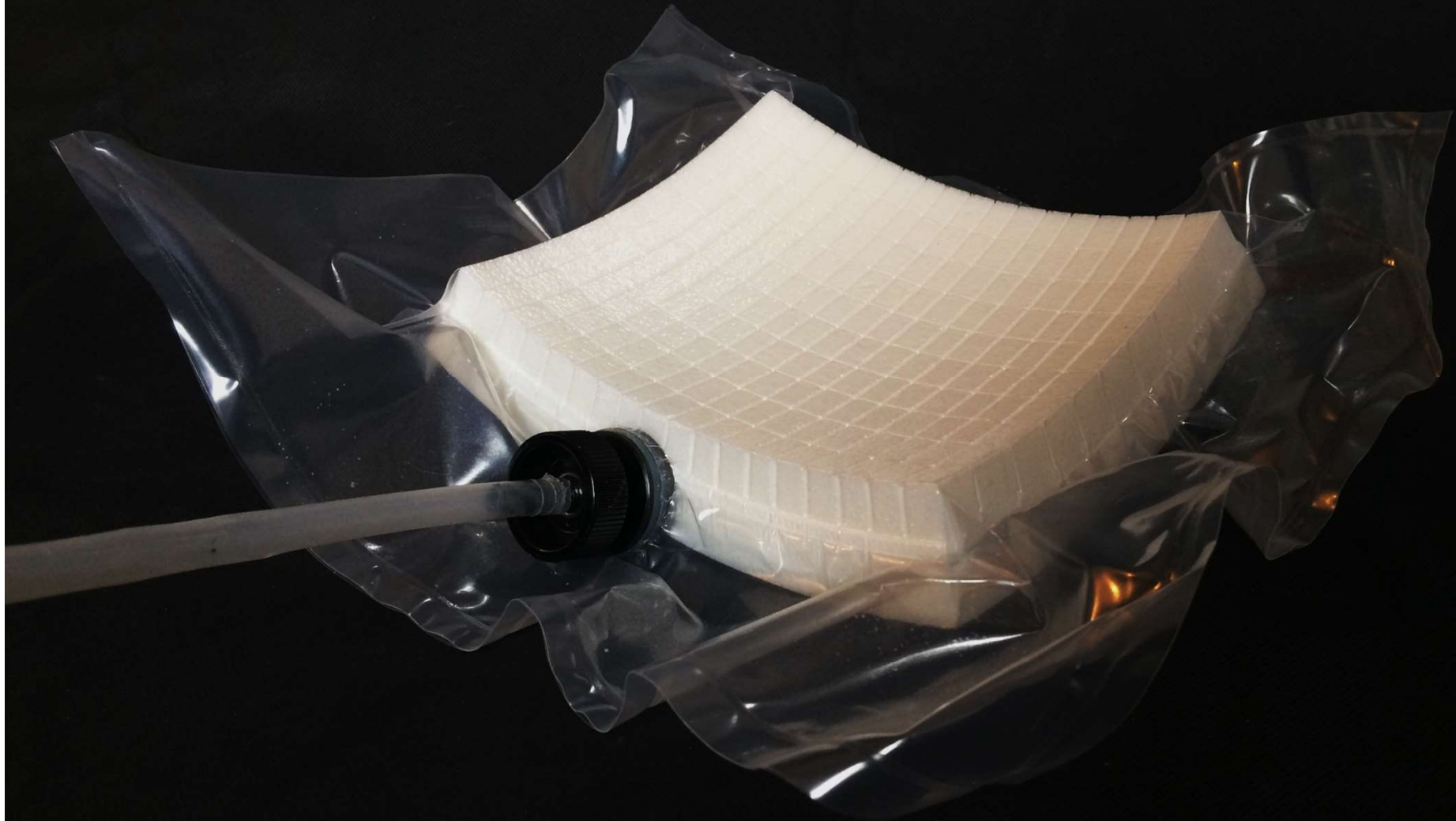


_____ optional **coating** of the element with an optical or functional layer

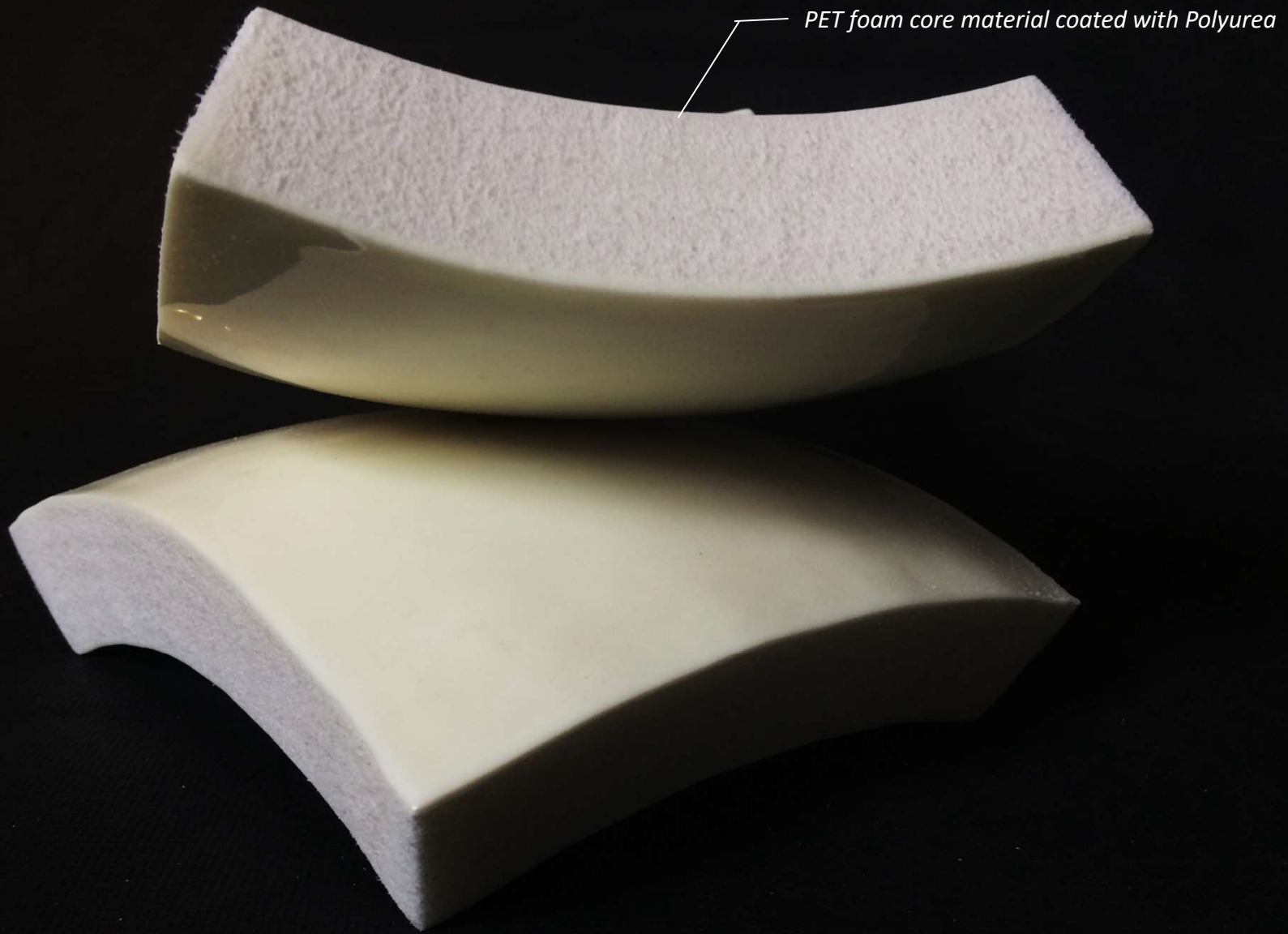
formcore slitted core material PET, honeycomb paperboard, Balsa, MDF



formcore evacuation process in vacuum bag

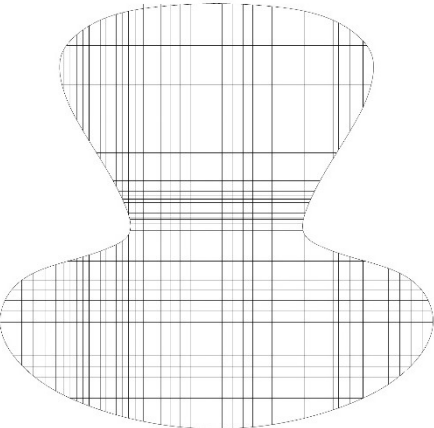


formcore sandwich elements

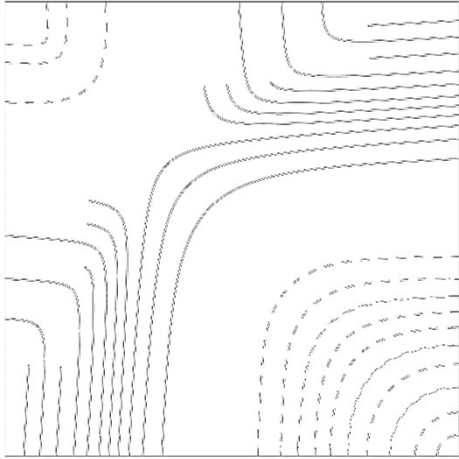
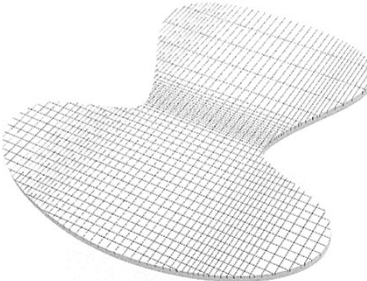


PET foam core material coated with Polyurea

formcore 1:1 prototyping with PET AIREX® T10



„Swan“



freeform modul



formcore material samples



formcore thermofixed samples core material PET AIREX® T10




formcore coated prototypes of „swan“ geometry



formcore „Swan“, slitted PET foam core

PET foam core material coated with felt



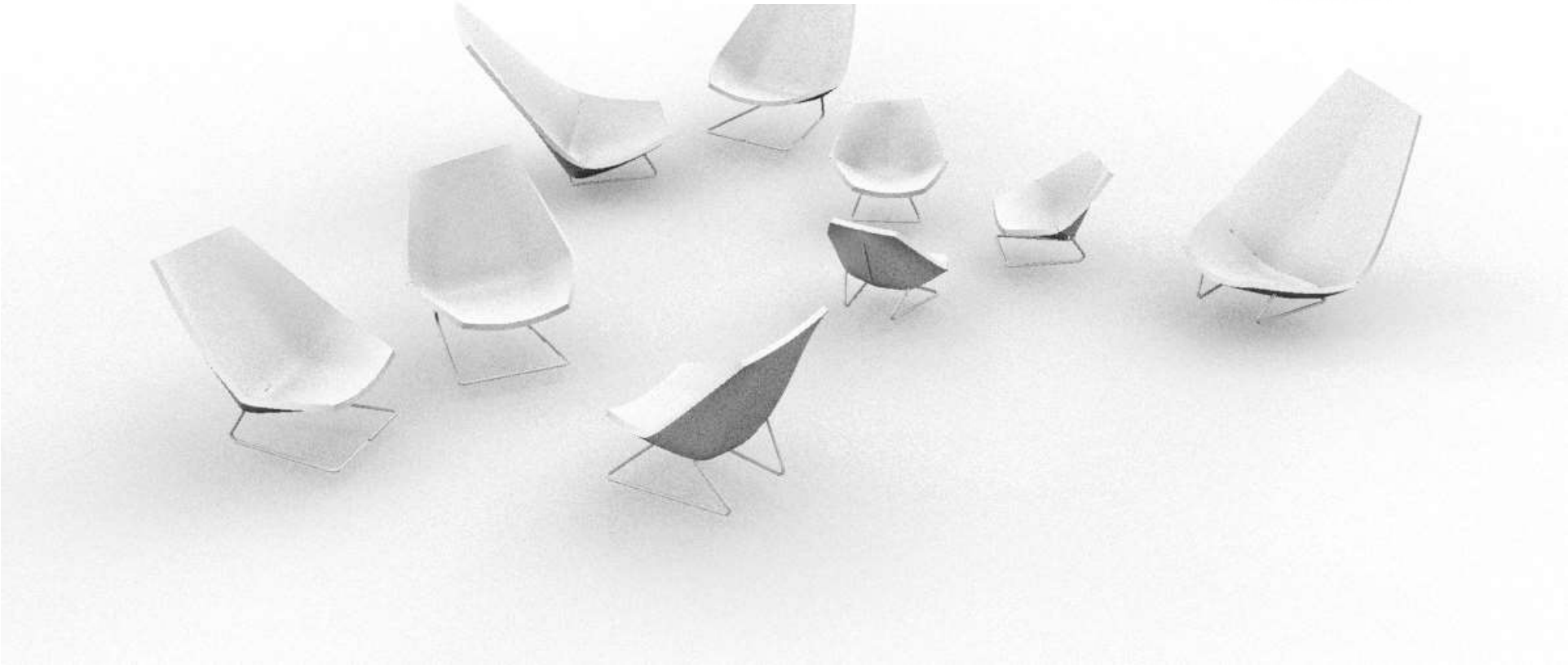
*thermofixed formcore „Swan“,
coated with Polyurea*

thermofixed formcore „Swan“

formcore project presentation *PEER Chair*



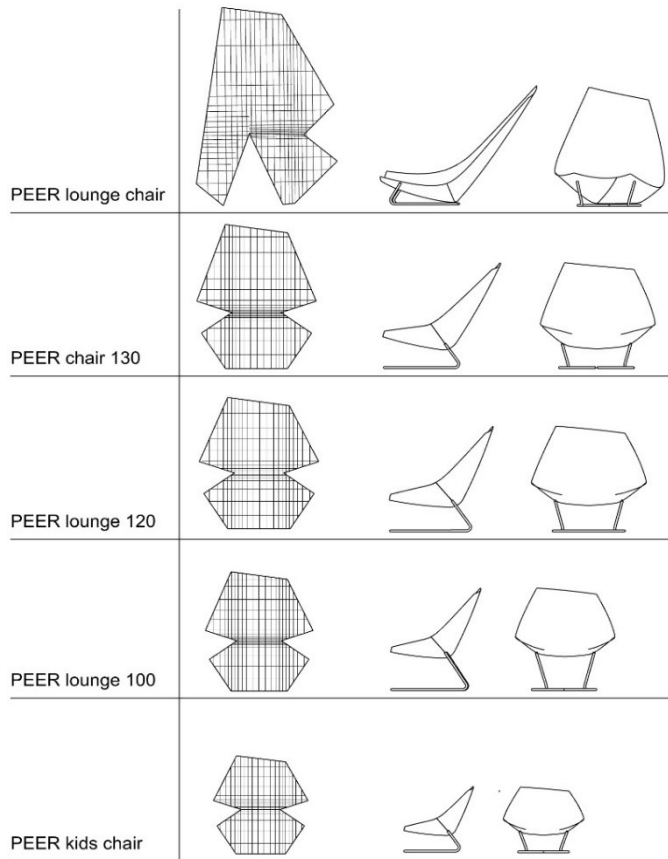
formcore 01_Prototyp PEER Chair Basic



formcore 01_Prototyp PEER Chair Basic

The prototype **PEER Chair Basic** is the first 1:1 realisation based on the seating furniture Edition **PEER**, that includes 5 furniture types.

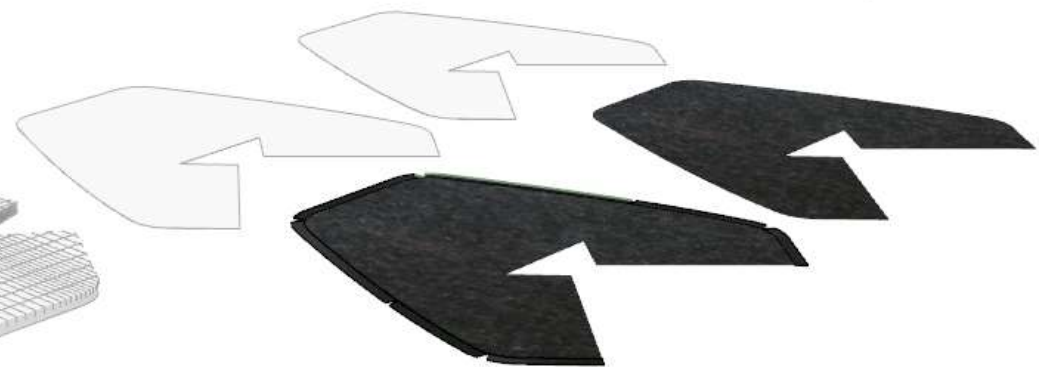
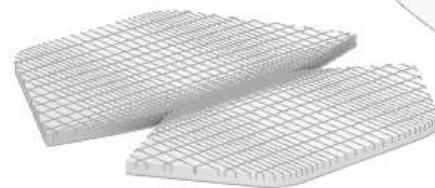
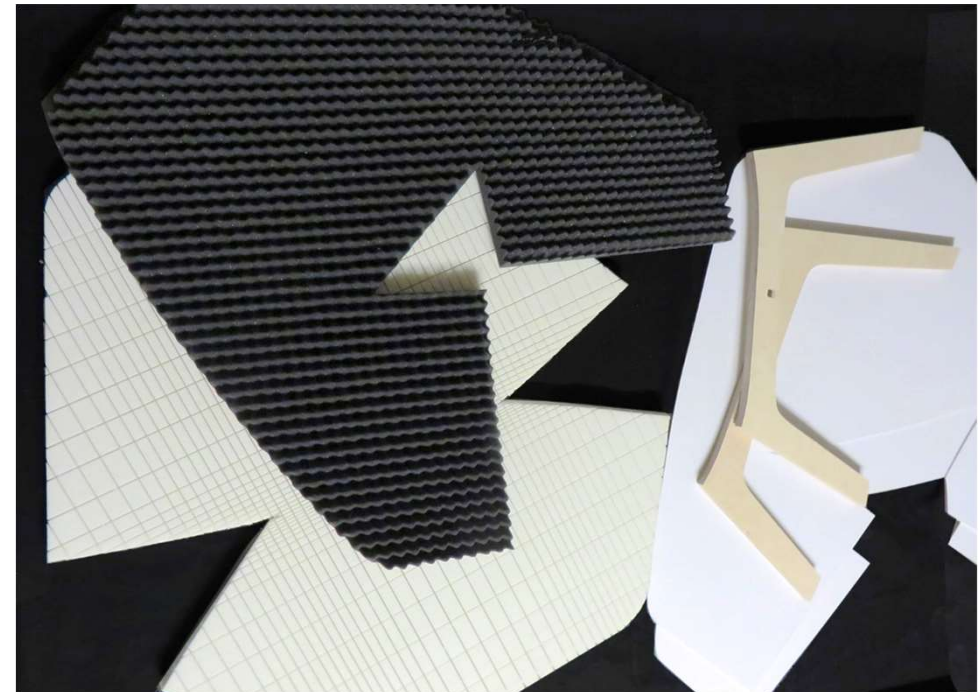
The design was done by Valentine Troi for the purpose of showing the flexibility of the formcore concept in furniture scale.



formcore 01_Prototyp *PEER Chair Basic*

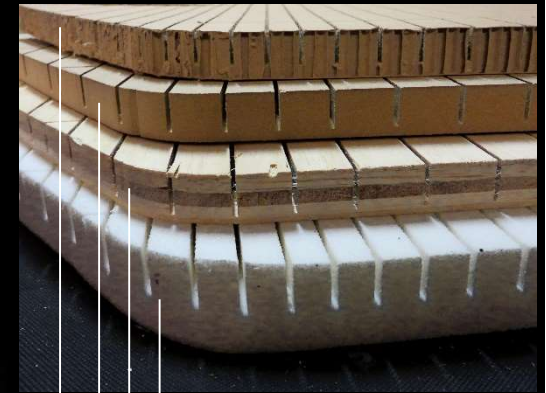
The shell is composed as unmixed PET Sandwich, for the purpose of efficient recycling.

core material:	PET AIREX® T10	30 mm
top sheet:	PET HIPEX®	3 mm
cover:	Loden wool textile	3 mm
pad:	flocked nub foam	40 mm



formcore 02_formcore PEER Chair, different core materials

Core material, topsheets and coating can get chosen out of a broad range of materials, depending on the demand regarding functionality, ecology or economy.

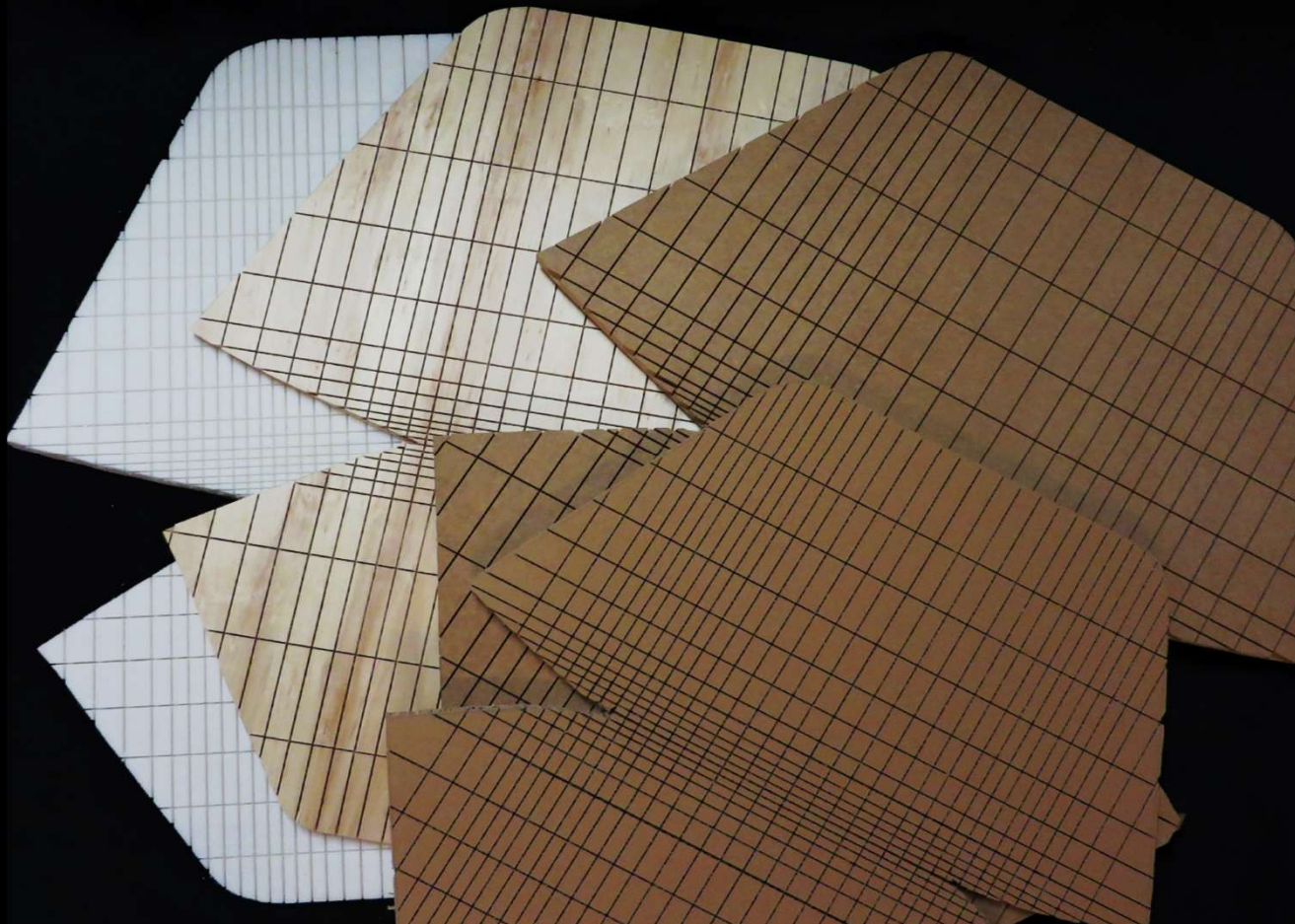


PET AIREX® T10

Balsa BANOVA®

MDF

Honeycomb paper board





carped tile



100% wool



*50%wool
50%PET fibre*



Polyurea



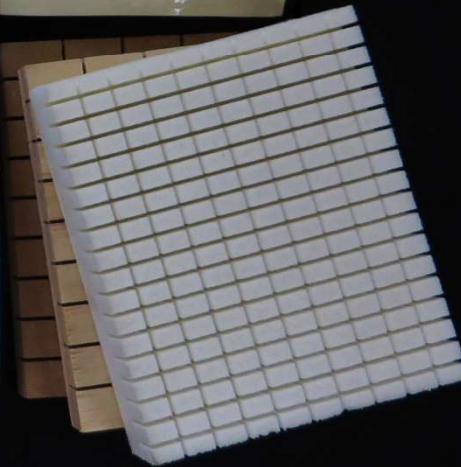
100% PET felt

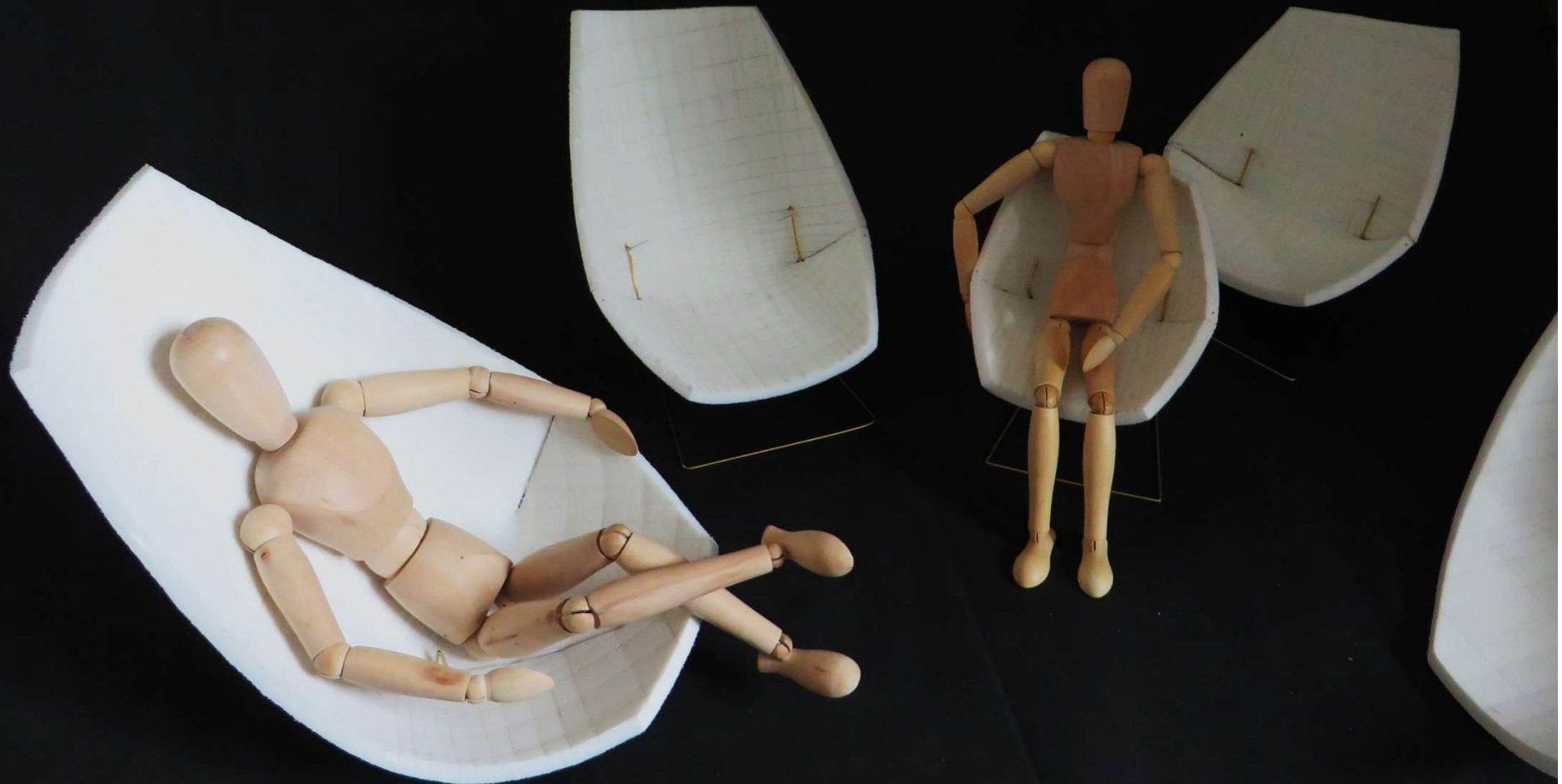


*PET sheet
HIPEX®*

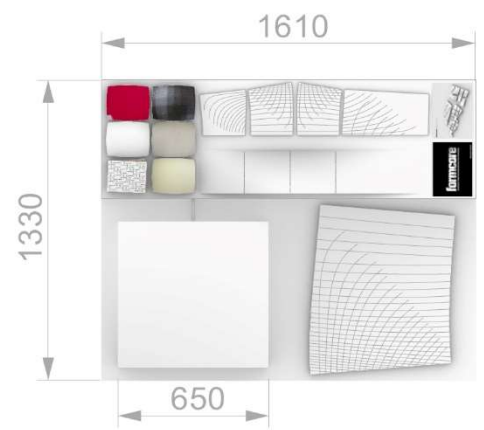
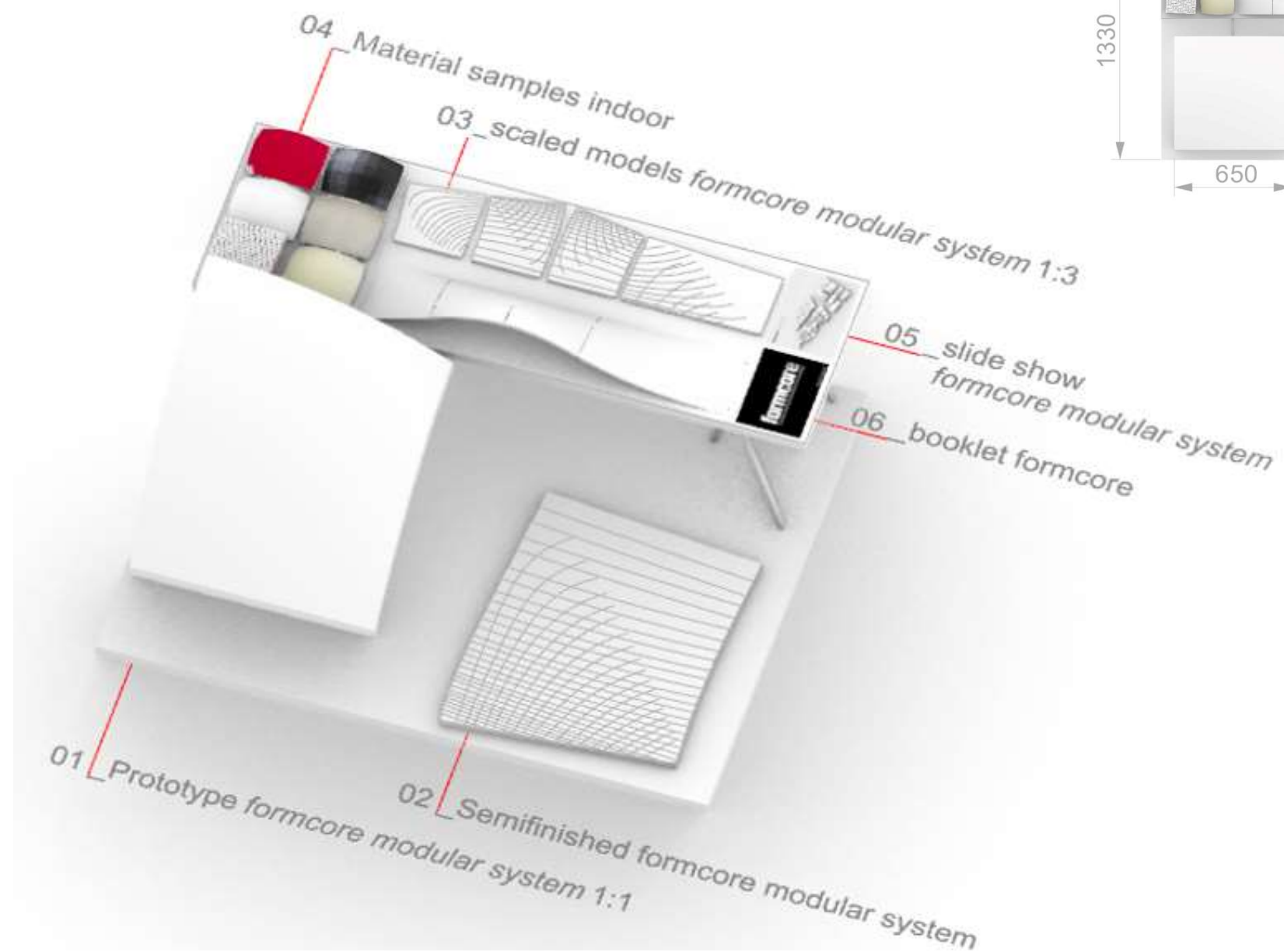


*mineral material
Corian®*



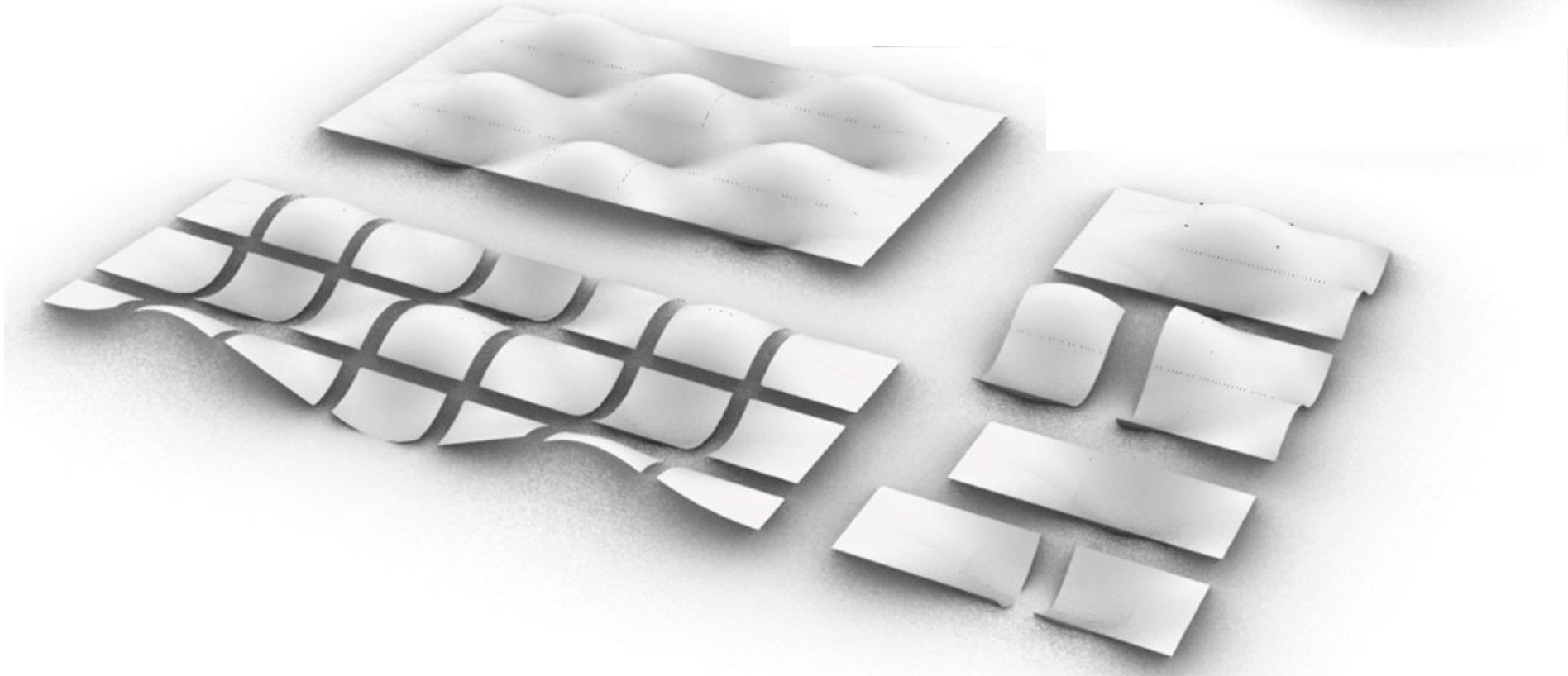
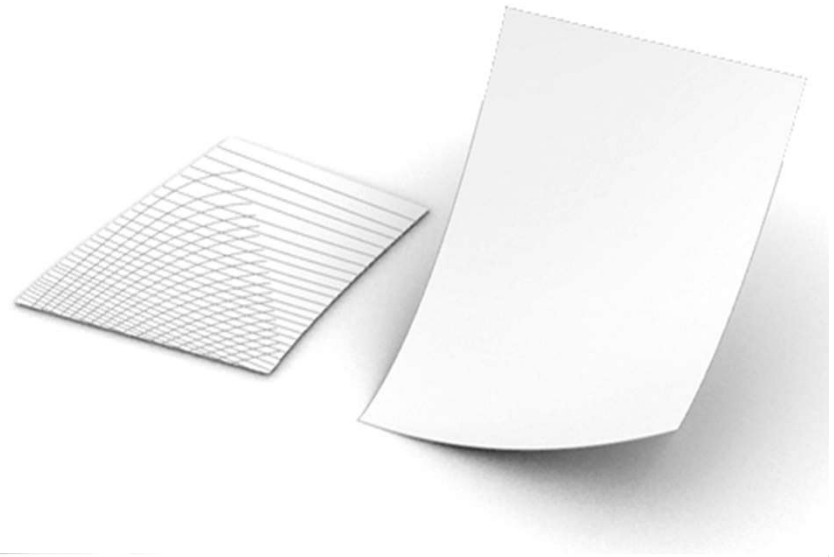


formcore project presentation *formcore modular system*



formcore 01_ *formcore modular system* prototype 1:1

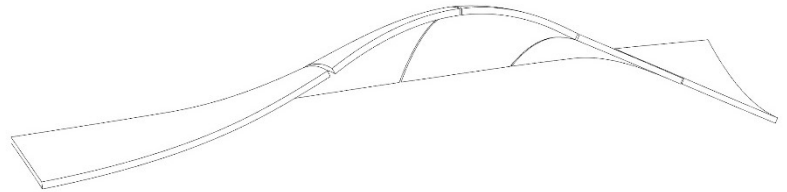
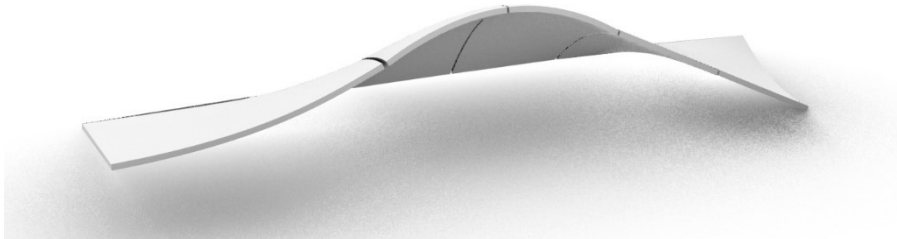
The *formcore modular system* was designed and developed for applying the formcore concept on an additive system, for proofing the fitness for applications like facades, interior designs or industrial structures, where elements have to fit perfectly together.



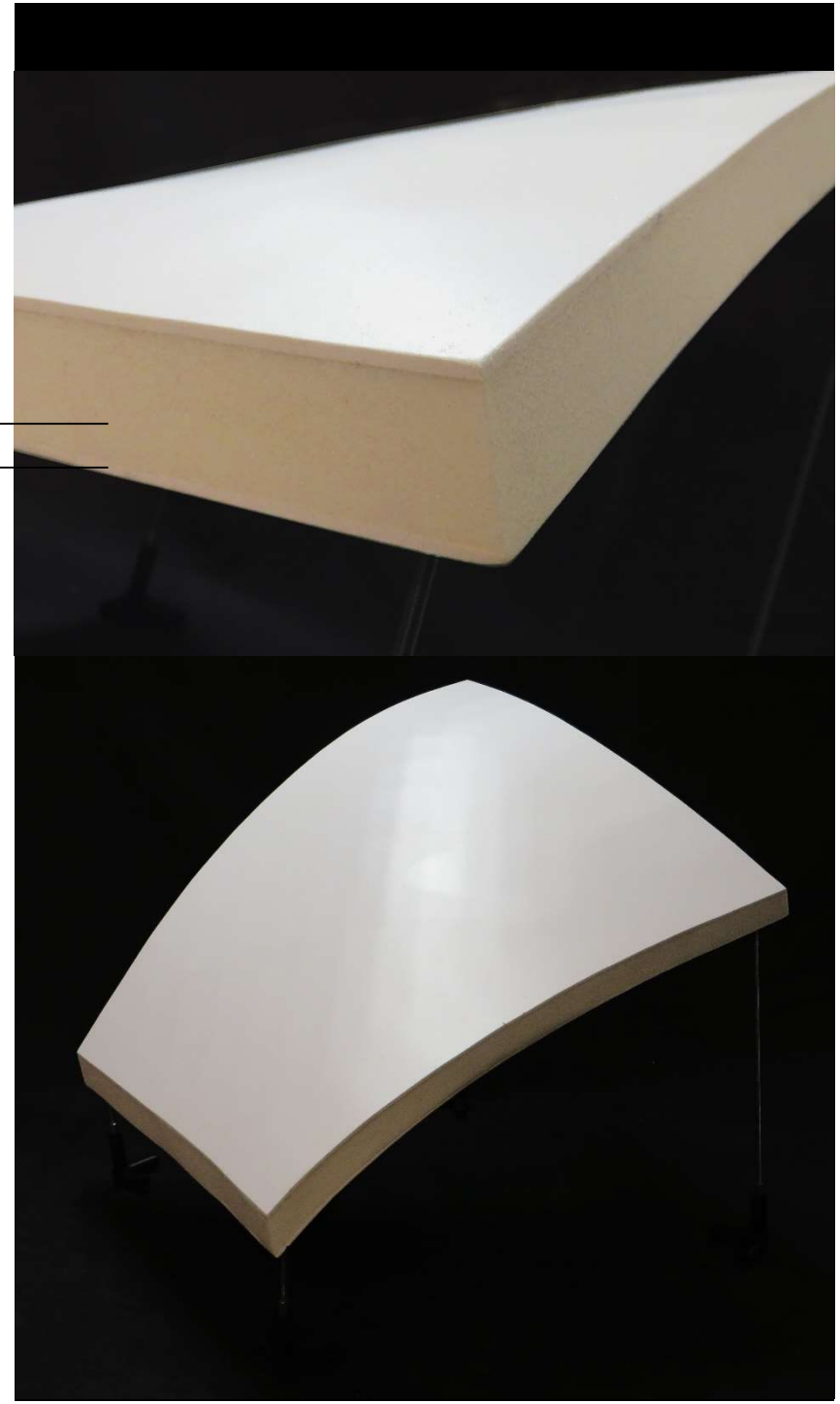
formcore 01_ *formcore modular system* prototype 1:1

The element is intended for outdoor use, therefore the composite consists of PET foam core material, top sheeted by a mineralic material, used also for facade panelling.

core material: PET AIREX® T10 30 mm
 top sheet: mineral material GETACORE® 3 mm

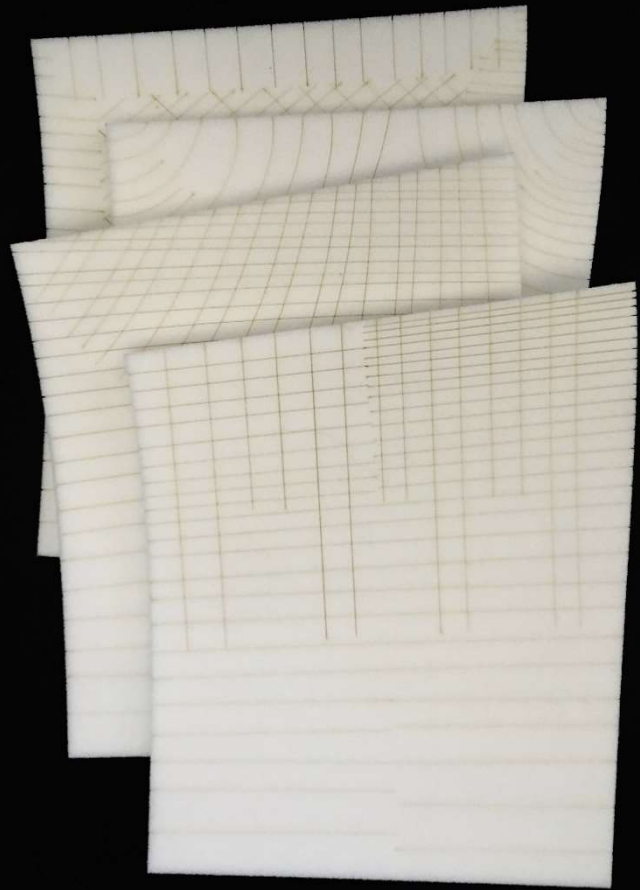


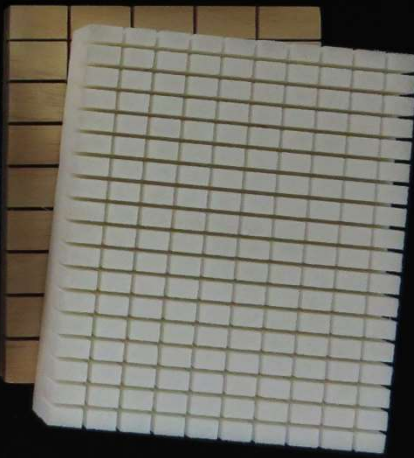
modul 01a	modul 02a	modul 02b	modul 03a	modul 03b



formcore 02_03_ semifinished coresheets 1:3 *formcore modular system*

For the realisation of the 3 panel typologies, different slit pattern where tested in scale 1:3 for elicit the pattern with the best performance during the forming process.





formcore Team and Support


project idea and development

troi.composite components, A-Innsbruck

project partner composite technology

KWS .at , A-Jenbach
shaping your world


project partner geometry analysis and software

 universität
innsbruck I.sd, Architecture Faculty LFU, A - Innsbruck

project partner geometry analysis and software

format Engineers, GB-London

support material and technical know how

 core materials, CH-Sins

funding

 **GAUGLER & LUTZ OHG** , D-Aalen
DIE KERNKOMPETENZ

 , A- Innsbruck