DEKILN

2025 Brochure

About us

DeKiln reimagines ceramics for a sustainable future. Using our patented kilnfree process called BioSintering, we “de kiln” tile manufacturing to create sustainable surfaces from recycled materials and natural ingredients. Our bioinspired tiles achieve a 94% lower carbon footprint compared to traditional ceramic tiles, whilst having a recycled content of over 95%.

The result is Eralith: a material that offers depth, colour and tactility that designers expect from ceramics, without the embodied energy or emissions from firing.

Status

DeKiln has grown from basement experiments over the COVID19 pandemic, through focussed research & development on a shoestring budget, to pilotscale manufacturing - proving the industrial viability of its kilnfree BioSintering process.

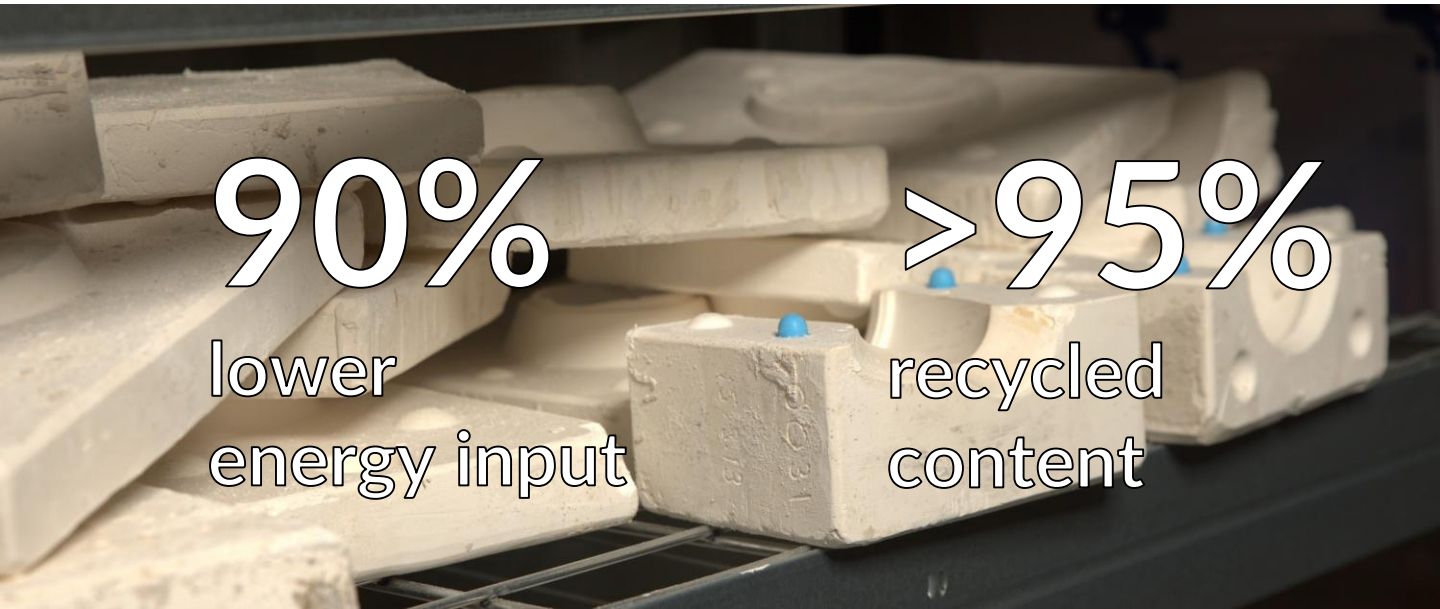
Our flagship material, Eralith, currently achieves a 90% lower energy input and a 94% reduction in CO2 emmissions compared with traditional ceramics, whilst having a recycled content of over 95%.

DeKiln is seeking smallscale demonstrative projects to build up a case study portfolio as we continue to expand production capacity.

Simple processing

Faster production

20x lower CO_2 emissions



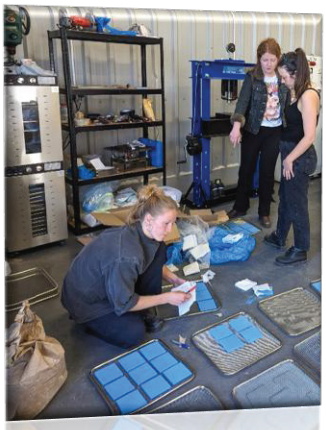
Our Journey

2017-2024 Founder Dr Aled Roberts develops deep insights into biomaterials as a researcher at The Manchester Institute of Biotechnology

Dec 2020 Aled makes a breakthrough discovering that chickpea juice can be combined with waste minerals to form a "bio-ceramic" without the need for a kiln firing. He coins the invention of BioSintering

Jan 2020 Aled begins experiments in his basement over the COVID19 pademic using kitchen ingredients and available waste (brick dust, plasterboard powder etc.)

Jan 2021 Aled founds DeKiln (then Deakin Bio) to commercialise BioSintering with a vision to slash C02 emisions in the construction sector



2021-2022 The DeKiln team are awarded several small grants and prizes. Eventually moving from the basement to a railway arch, co-locating with a local microbrewery to save costs

2023 Team subsequently move into their own railway arch and purchase a small lab press to scale up production

2023-2024 Team make several significant breakthroughs in the development, optimisation and scalability of BioSintering and first product Eralith: paving the way to commercialisation

Oct 2024 DeKiln secures £700k of seed investment from Green Angel Ventures to scale and commercialise BioSintering and Eralith

2025 Team move into a new unit in the heart of Manchester and purchase an industrial press to further scale-up production

Design expression

From the outset, DeKIln has collaborated with artists and designers to shape the aesthetic potential of BioSintering. Freed from the constraints of kiln firing, our process allow a far broader palette of pigments and natural tones to be used, preserving their colour integrity and depth.This flexibility enables surface finishes that range from subtle mineral hues to vivid, saturated tones - all created at low energy and with high recycled content. BioSintering makes design experimentation intrinsic to the material itself, opening new possibilities for texture, form and colour in sustainable ceramics.

Applications

Eralith is currently suitable for internal all applications, meeting BIII Classification under EN 14411 based on internal laboratory validation.

Product format

Size LxW (mm)	Thickness (mm)	Items per box	Box coverage (m_2)	Approx. weight (kg)
50x250	10	80	1	17
125x125	10	80	1	17
100x100	7.5	100	1	13
100x50	7.5	200	1	13

Physical properties +

Test	Standard & Requirement	Result
Length/width deviation	EN10545 – 2 (±0.5%)	Conform
Straightness of sides	EN10545 – 2 (±0.3%)	Conform
Surface flatness	EN10545 – 2 (±0.5%)	Conform
Modulus of rupture	EN14411 – BIII (>12 MPa)	Conform

Case Studies

We are actively seeking partnerships and collaborations to install Eralith tiles in real-world environments to build up a portfolio of successful case studies. Each installation helps refine production methods and illustrate how Eralith can integrate seamlessly into architectural, interior, and artistic contexts - proving that sustainability and design excellence can coexist without compromise.

Collaborate

DeKiln works with architects, designers, and manufacturers to develop bespoke surfaces and installations that demonstrate what kiln-free materials can achieve. Whether through experimental commissions, product integration, or licensing partnerships, we invite collaborators who share our commitment to circular design and material innovation.

Together, we can redefine the future of ceramics: lower carbon, higher creativity, and de-kilned.
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