

Fractals





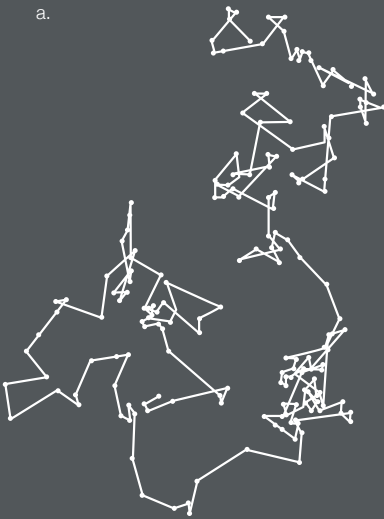
Designing with Fractals for Well-being

Our journey with fractals began in 2019 with the ScienceDesignLab, a collaboration between 13&9 Design and Fractals Research. Based on the “fractal fluency” model developed by Dr. Richard Taylor of Fractals Research, our nature-inspired flooring collections use fractal patterns to reduce stress and enhance well-being. Today, our expanded portfolio includes three carpet tile collections—Relaxing Floors, Fractal Fluency, and Fractal Findings—along with LVT from our connectD 2.5 | 5.0 collection, bringing the calming power of fractals to every area of a space. Seamlessly blending science and design, our collections transform commercial interiors into environments that enhance the human experience.

connectD 2.5, 910 Gentle Haze, D-Value: 1.56
lineD, 949 Mineral, D-Value: 1.35

How Fractal Patterns are Generated

The fractal patterns, part of the Fractal Library developed by ScienceDesignLab, use advanced algorithms to create biophilic designs. Adapting natural patterns, “seeds” are placed along paths followed by foraging animals, refined for aesthetics, and tuned for fractal complexity (D value). Patterns are then optimized for tiling and materials like carpet or LVT, blending artistic creativity and scientific precision to deliver human-centered and nature-inspired designs.



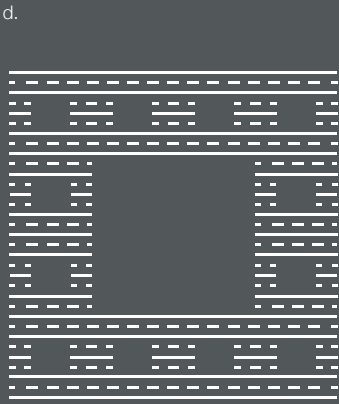
Flight patterns of migratory birds in search of food



Landing Sites



Modified Seed



Seed



mellowD, 922 Sanctuary, D-Value: 1.56
Right: restD, 967 Pause, D-Value: 1.63, Fractal Ground, 949 Easy Breezy



Introducing the power of fractals to the built environment, Relaxing Floors harnesses nature's innate order into a calming, restorative experience. Fractal Ground provides a textured, organic foundation: chillD features a computer-generated fractal pattern built from triangular segment shaped seeds, while mellowD repeats line-shaped seeds at varying magnifications. restD takes an organic approach, with neuron-like forms twisting and weaving across the surface.

chillD, mellowD, restD, Fractal Ground | 12" x 36" Carpet Plank | 8 Colorways | 2019

Relaxing
Floors



mellowD, 946 Awakening, D-Value: 1.56, Fractal Ground, 946 Awakening



chillD, 965 Blue Bliss, D-Value: 1.47



lineD, 839 Flax, 859 Taupe, D-Value: 1.35

Fractal Fluency merges geometric elements into cohesive designs, promoting relaxation and reducing stress by imitating the natural visual patterns our brains are wired to process. lineD, with its repeating three-part lines, creates subtle intersections across the floor, resembling twigs scattered on a forest path. squareD, built from small squares, offers a geometric interpretation of stone formations with soft gridding and delicate punctuations.

lineD, squareD | 12" x 36" Carpet Plank | 8 Colorways | 2022

Fractal
Fluency



lineD, 949 Mineral, D-Value: 1.35



squareD, 839 Flax, D-Value: 1.44



discoverD, 855 Windswept, D-Value: 1.39
Right: exploreD, 857 Silverthrone, D-Value: 1.59



In collaboration with one of the leading design firms for schools in North America, Fractal Findings expands Mohawk Group's collections of fractal-based patterns. exploreD adapts natural fractals, like ice patterns, while discoverD generates new fractals through a Growing Fractals process inspired by animal foraging paths.

exploreD, discoverD | 24" x 24" Carpet Tile | 12 Colorways | 2024

Fractal Findings



discoverD, 857 Silverthrone, D-Value: 1.39



exploreD, 855 Windswept, D-Value: 1.59



connectD 5.0, 910 Gentle Haze, D-Value: 1.56
Chromascope 5.0, 250 Cozy Linen, 676 Celestial Forest

With connectD 2.5 | 5.0, we translate these natural fractal patterns into LVT. As part of the Hot & Heavy II collection, connectD features a refined palette of warm and cool neutrals that bring effortless cohesion to any space. Designed to seamlessly blend with Chromascope 2.5 | 5.0, connectD offers a versatile foundation that balances structure and movement—bringing the harmony of nature into the built environment.

18" x 36" LVT Planks | 8 Colorways | 2025

connectD



connectD 5.0, 230 Tan Essence, 270 Steady Mocha, D-Value: 1.56



connectD 5.0, 910 Gentle Haze, 980 Grounded Black, D-Value: 1.56

Collaborators



Arch. Martin Lesjak & Dr. Med. Univ. Anastasija Lesjak
Co-Founders of 13&9 Design and ScienceDesignLab

Award-winning product design studio 13&9 partners with Mohawk Group to create fractal patterns for flooring that enhance spaces and promote mental health, productivity, and well-being in learning environments. Together with Prof. Dr. Richard Taylor, they founded ScienceDesignLab to develop stress-reducing designs for interior and exterior applications.



Dr. Richard Taylor
Professor of Physics, Psychology, and Art
Head, Department of Physics, University of Oregon
Director of Fractals Research and Co-Founder of ScienceDesignLab

With more than 350 scientific publications, Dr. Richard Taylor is a pioneer in fractals research. In his work with ScienceDesignLab, Richard contributes his expertise to create visually stimulating patterns proven to enhance well-being and cognition.

Resources

Fractal Fluency in the Built Environment
2019

An in-depth overview of the science of fractals in the built environment by ScienceDesignLab: 13&9 Design and Fractals Research in collaboration with Mohawk Group.



Fractal Vision Booklet
2019

High-level overview of this stress-reductive approach to design, and its culmination into the Relaxing Floors collection.



Relaxing Floors Brochure
2019

The first collection of fractal-based styles translating the natural rhythm of fractals into a calming experience.



Fractal Fluency Brochure
2022

The second collection merges geometric elements into cohesive designs, triggering relaxation, and reducing stress.



Fractal Findings Brochure
2024

A collaboration with one of the leading design firms of schools in North America, the third collection introduces two fractal-based styles and semi-custom options.



Fractal Findings Inspiration Booklet
2024

Explore the fascinating science behind fractals and learn how the collection can transform the student experience.



connectD 2.5 | 5.0 Brochure
2025

Our first fractal-based LVT style featuring a refined palette of warm and cool neutrals.

