



TEST REPORT

Client: Mohawk Industries, Inc.

Test Number: Mohawk1

Test Date: 05/01/2025

Test Method: Determination of Visual Complexity using Fractal Analysis

Pattern name: SquareD, Fractal Fluency Collection

Fractal D value: 1.44

General Principle:

Fractals are patterns that repeat at different size scales, creating shapes of rich visual quality. Examples from natural scenery include clouds, trees, and mountains. Fractal Dimension D charts the ratio of fine to coarse structure and so measures the visual complexity generated by the repeating patterns within the fractal image. Fractal images typically lie in the D range between 1 and 2. The small amount of fine structure within low D fractals close to 1 builds a very sparse and simple image. As D values move closer to 2, the increase in fine structure creates a much more intricate, detailed shape. Neuroscience research indicates that fractals with mid- D complexity have a positive impact on the observer [1]. To calculate the D value, the computer overlays a mesh of squares over the fractal image and determines the pattern characteristics based on which squares are occupied by the shape and which are empty. This is repeated for different square sizes, allowing the computer to compare pattern characteristics at different size scales and from this comparison calculate D .

[1] R.P. Taylor, "The Potential of Biophilic Fractal Designs to Promote Health and Performance: A Review of Experiments and Applications," *Journal of Sustainability*, volume 13, page 823 (2021).

Certified by:

A handwritten signature in blue ink, appearing to read "R. Taylor", is positioned below the "Certified by:" text.

Richard Taylor, Director, Fractals Research LLC