

# Cyclostationary Gaussian noise supplemental 1

Nicolas Lutz, Basile Sauvage, Jean-Michel Dischler

October 2020

## 1 Synthesis using a spatially-varying spectrum

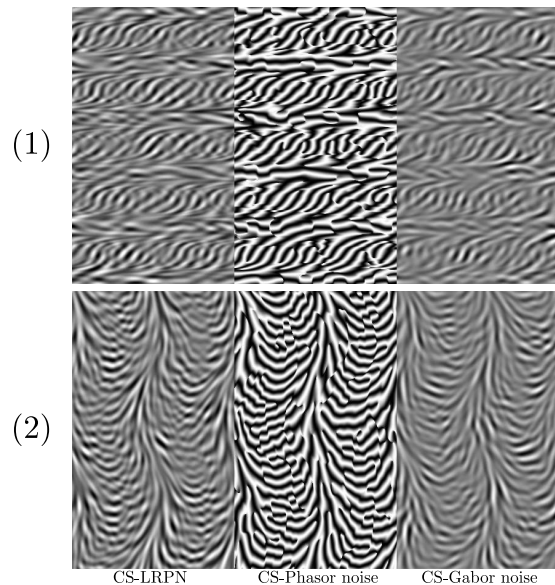


Figure 1: Examples of noise defined by a spatially-varying spectrum.

Figure 1 presents two additional examples of realizations of a cyclostationary noise defined by a procedural, spatially-varying and periodic spectrum. Our examples were produced on the following shadertoy : [shadertoy.com/view/wdtrCs](https://www.shadertoy.com/view/wdtrCs)

## 2 By-example synthesis

In this section, we show various results of our by-example synthesis algorithms. These results were generated with double the size of their exemplars, and used the CS histogram transfer we presented. Most of these textures can be found on [textures.com](https://www.textures.com).

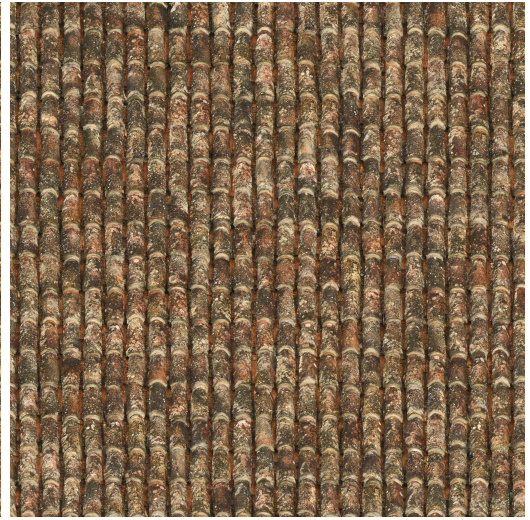
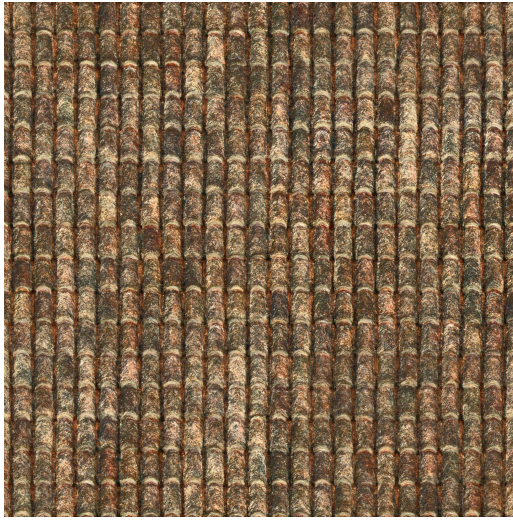
Exemplar

CS-spot noise

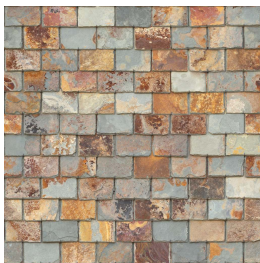
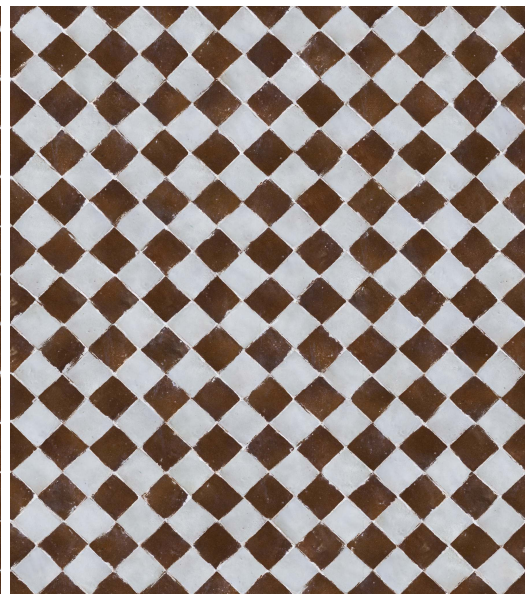
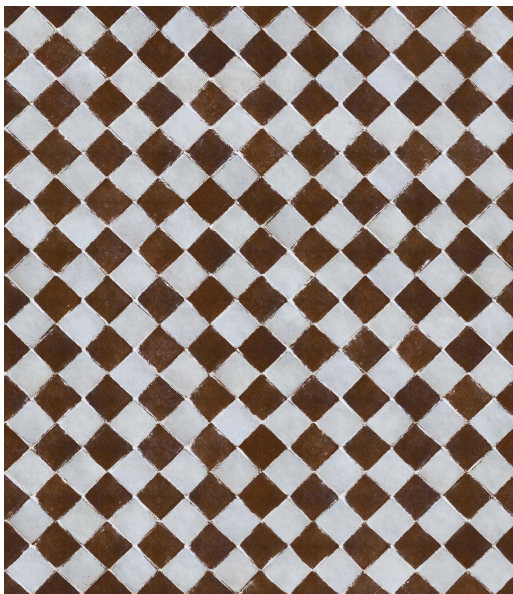
CS-high performance noise



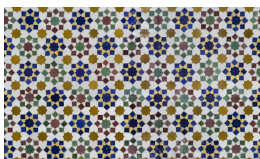
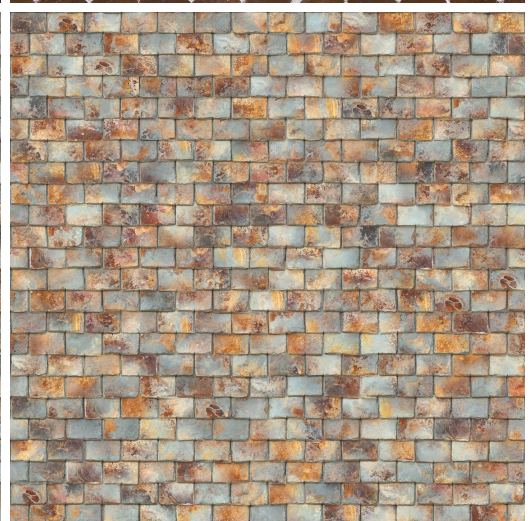
$1024 \times 1024$



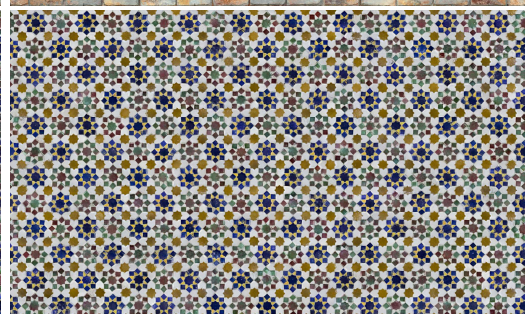
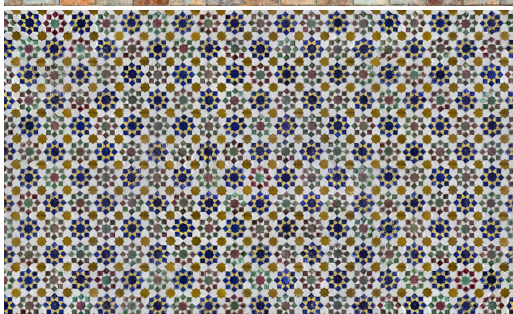
$894 \times 1024$



$1024 \times 1024$



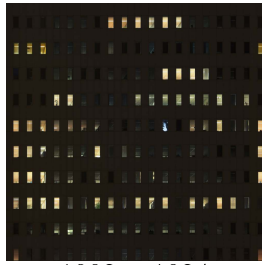
$1024 \times 613$



Exemplar

CS-spot noise

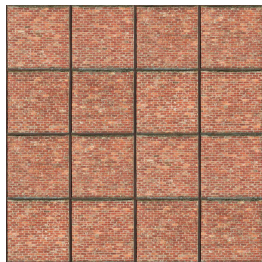
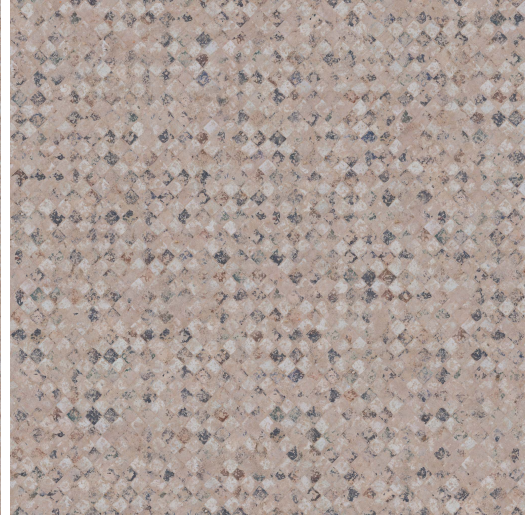
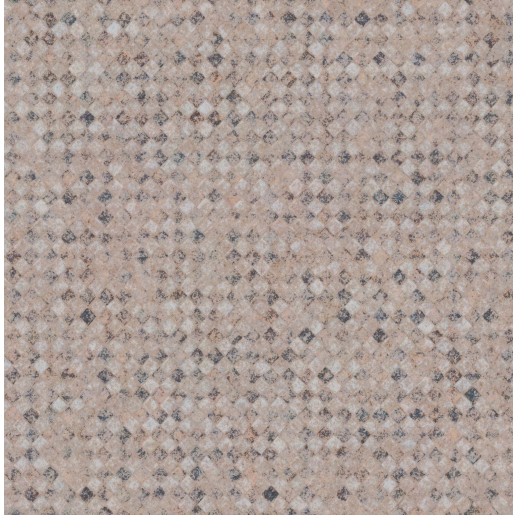
CS-high performance noise



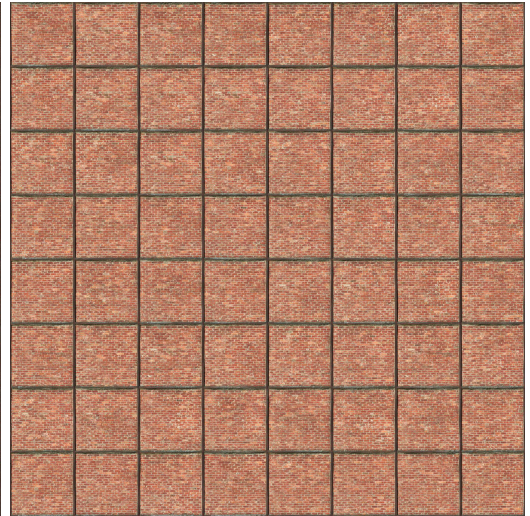
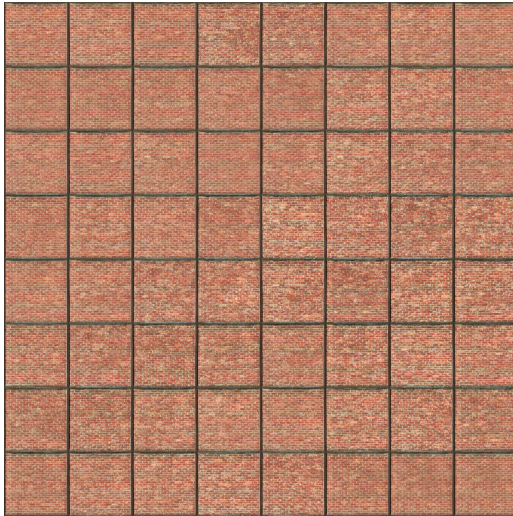
$1024 \times 1024$



$1024 \times 1024$



$1024 \times 1024$



$1024 \times 512$



$1024 \times 256$



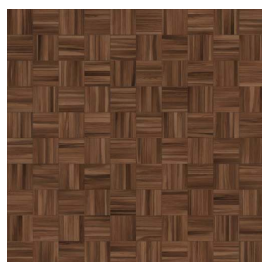
$1024 \times 675$



Exemplar

CS-spot noise

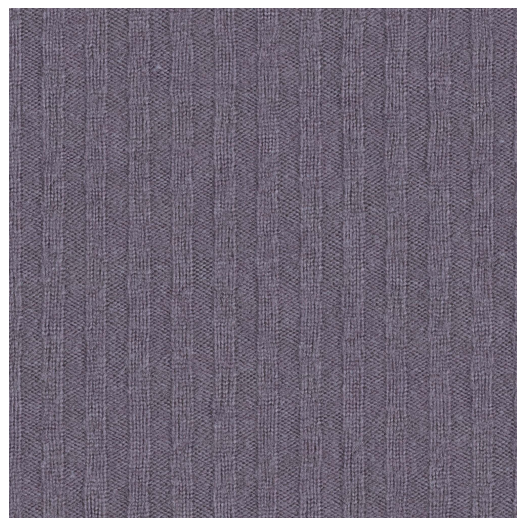
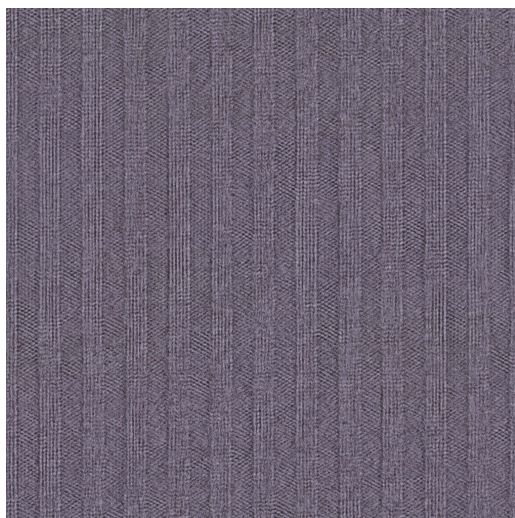
CS-high performance noise



$512 \times 512$



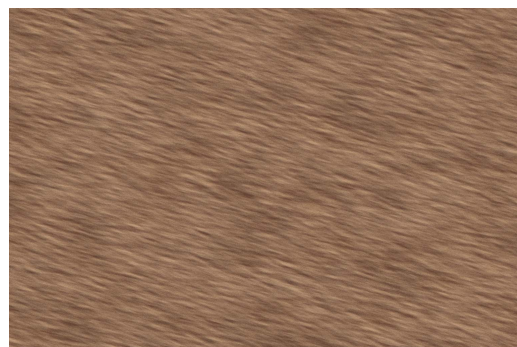
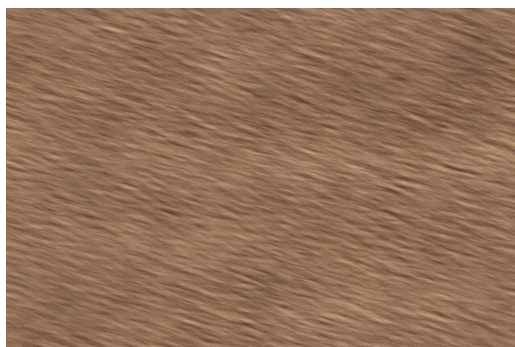
$1024 \times 1024$



$512 \times 512$



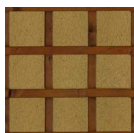
$768 \times 512$



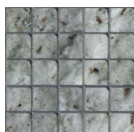
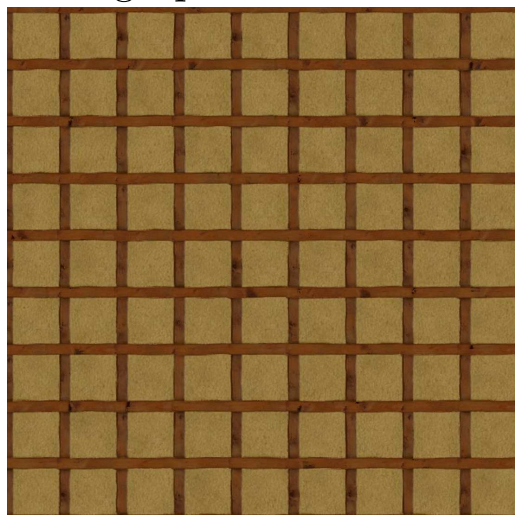
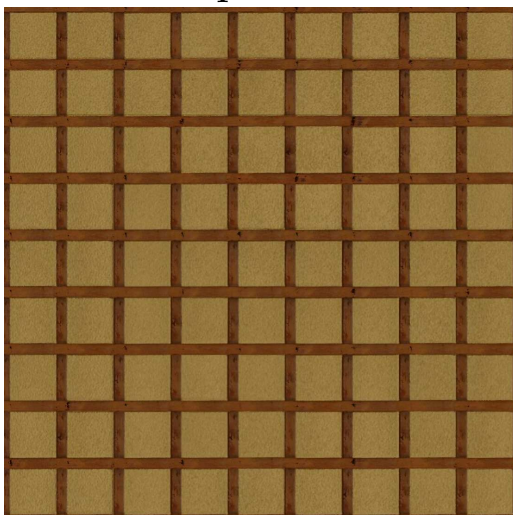
Exemplar

CS-spot noise

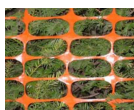
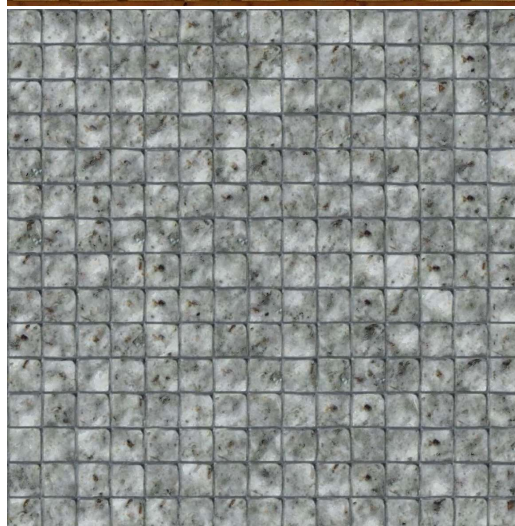
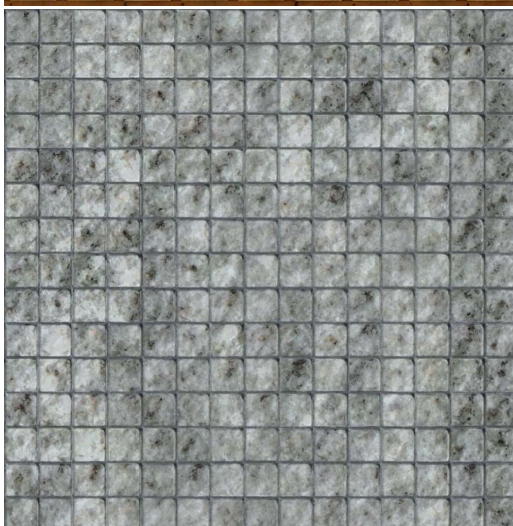
CS-high performance noise



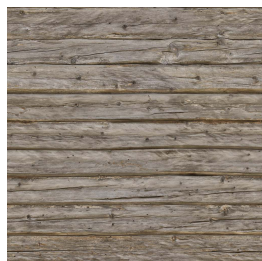
370 × 369



387 × 393



395 × 312



1024 × 1024



Exemplar

CS-spot noise

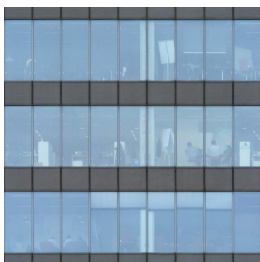
CS-high performance noise



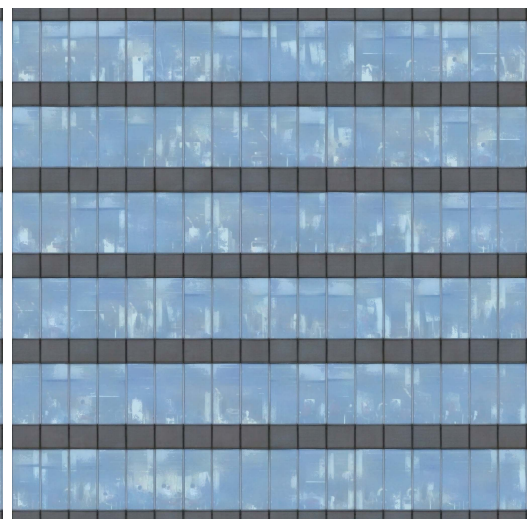
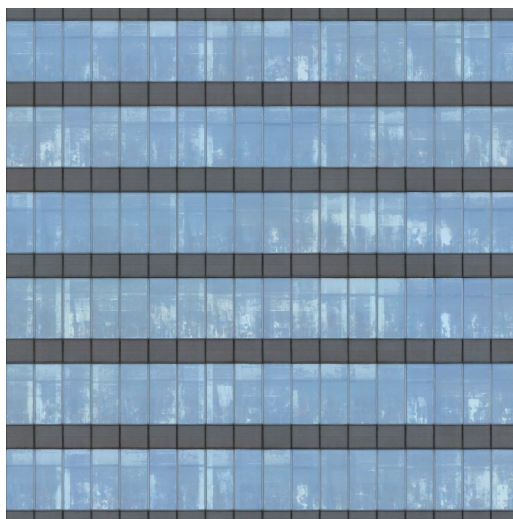
$1024 \times 1024$



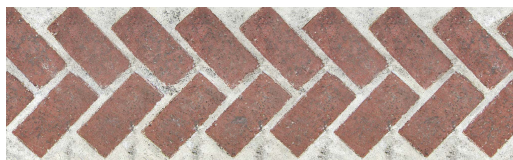
$1024 \times 1024$



$1024 \times 1024$



$1024 \times 618$



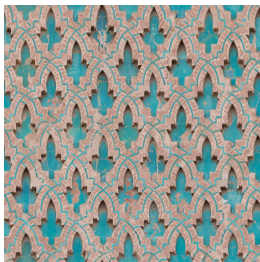
Exemplar

CS-spot noise

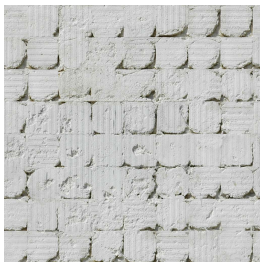
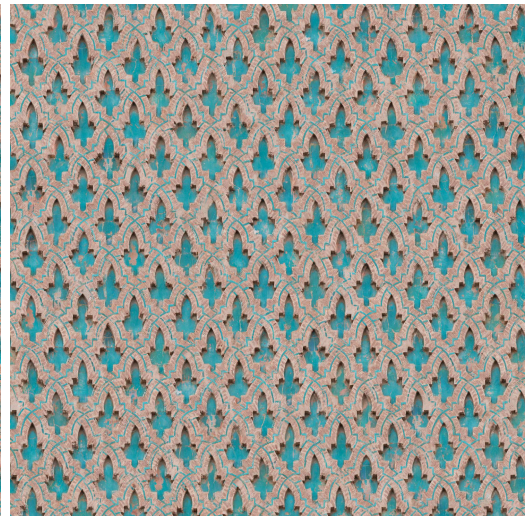
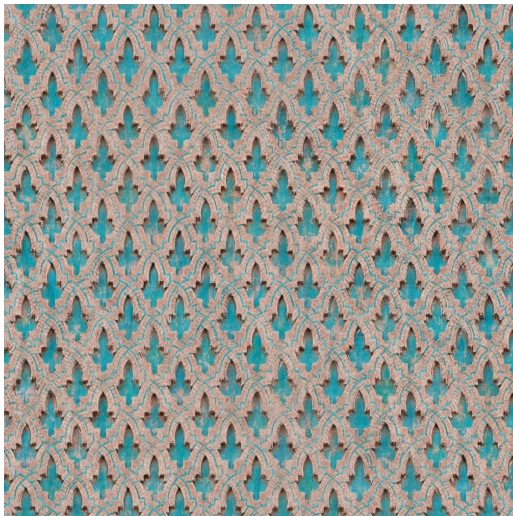
CS-high performance noise



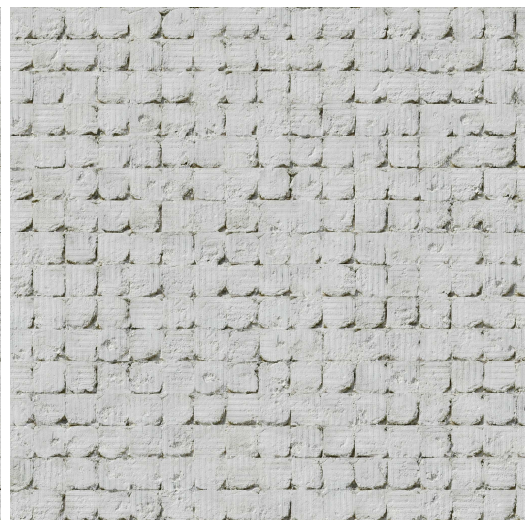
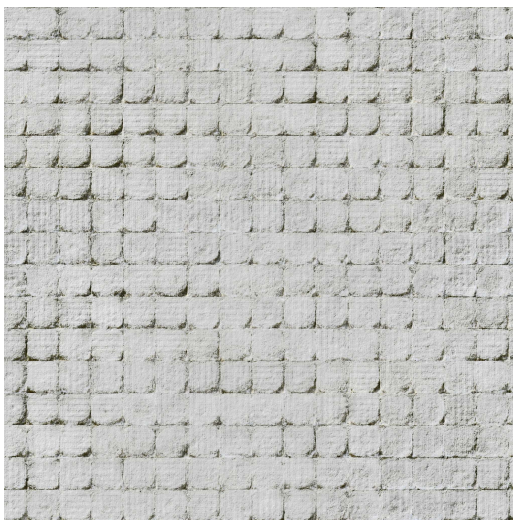
1024 × 999



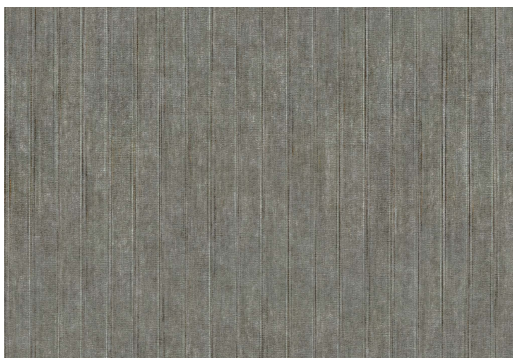
1000 × 1000



1024 × 1024



1024 × 708



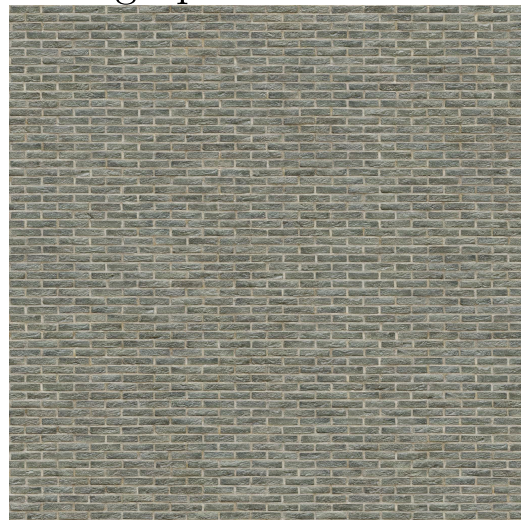
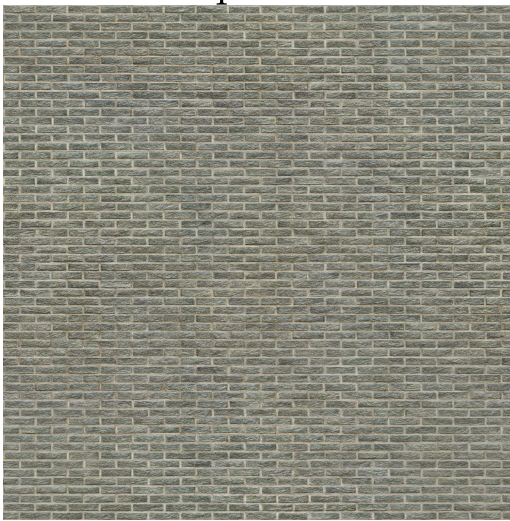
Exemplar

CS-spot noise

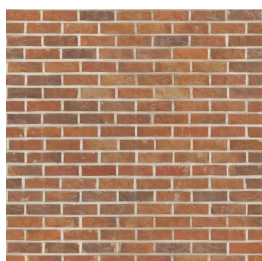
CS-high performance noise



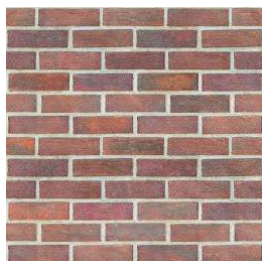
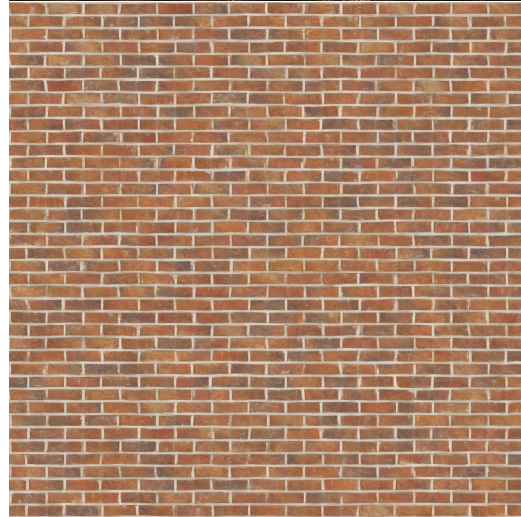
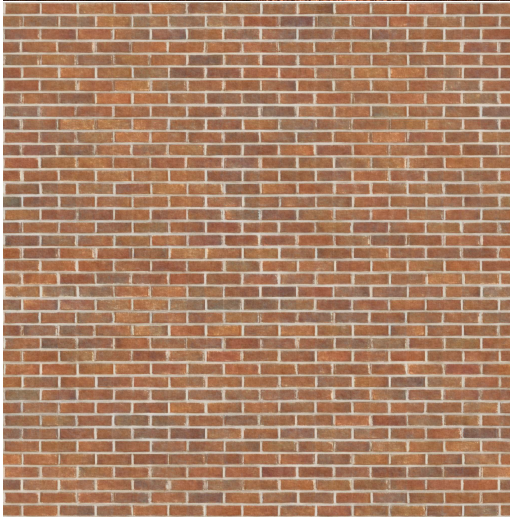
1024 × 1024



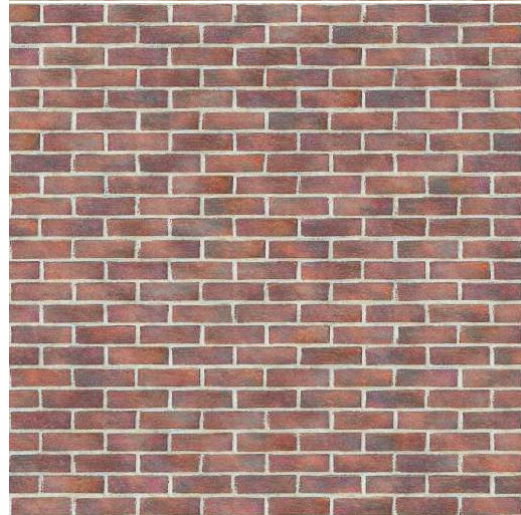
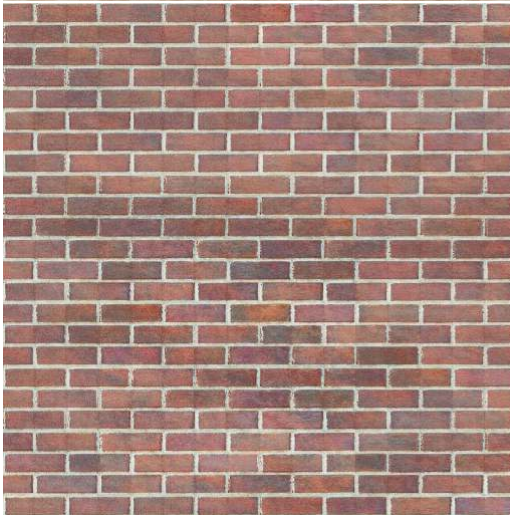
1024 × 1024



1024 × 1024



256 × 256

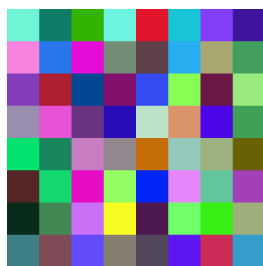




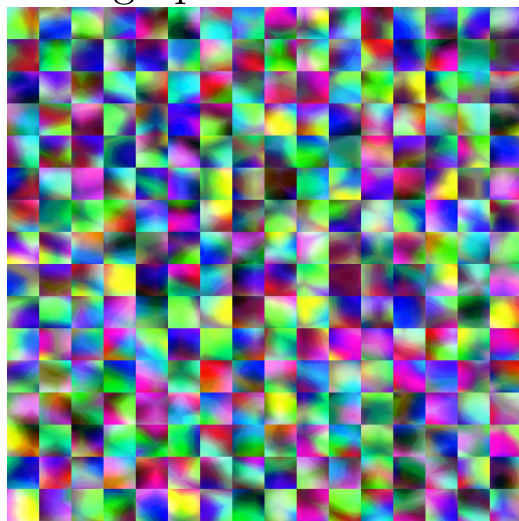
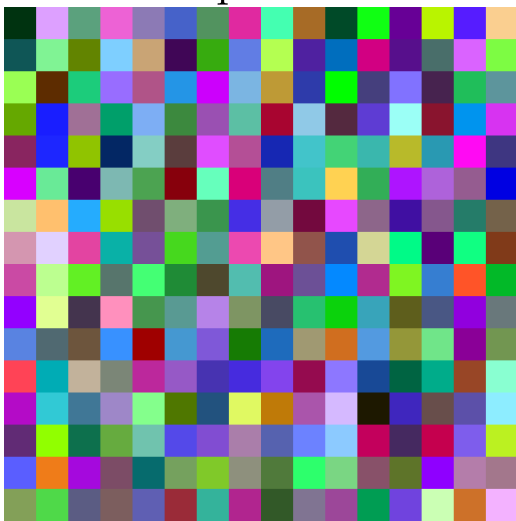
Exemplar

CS-spot noise

CS-high performance noise



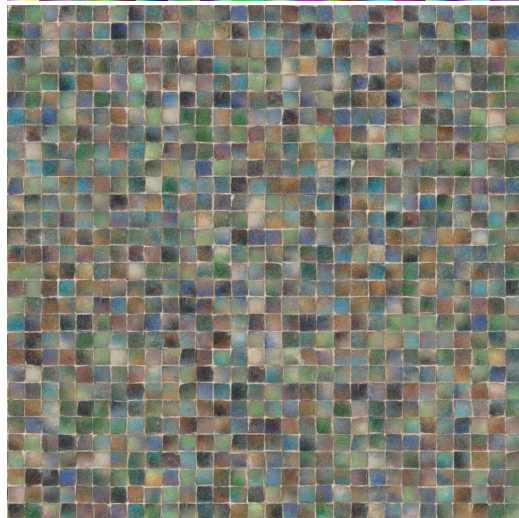
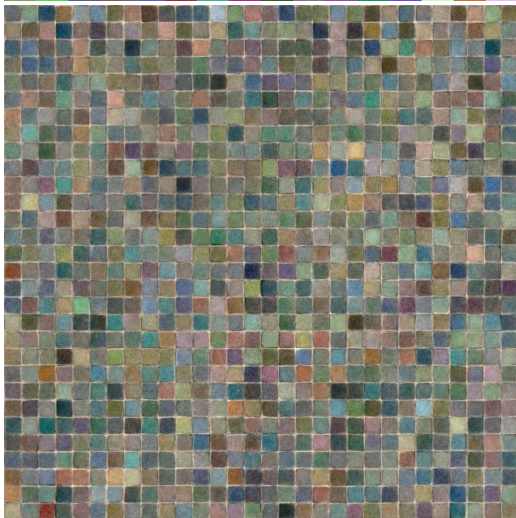
$512 \times 512$



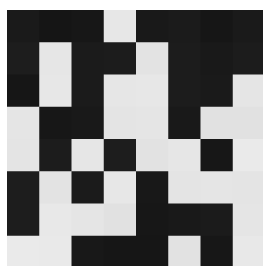
(\*)



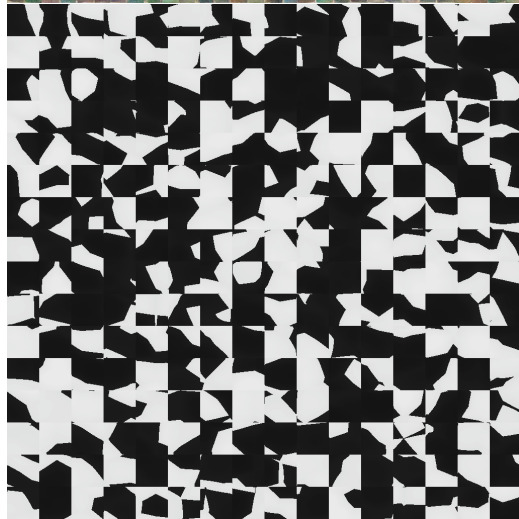
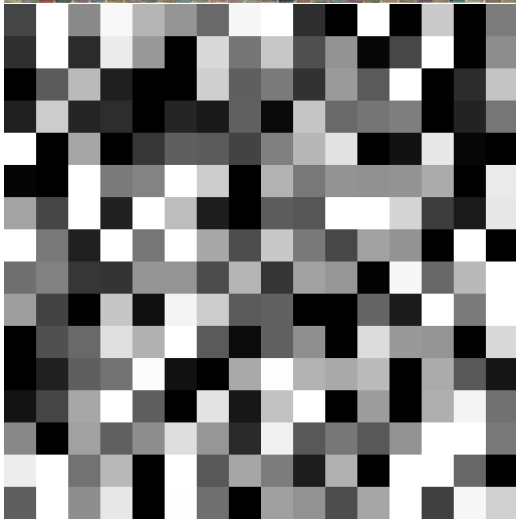
$512 \times 512$



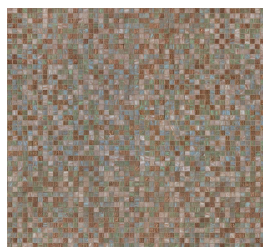
(\*)



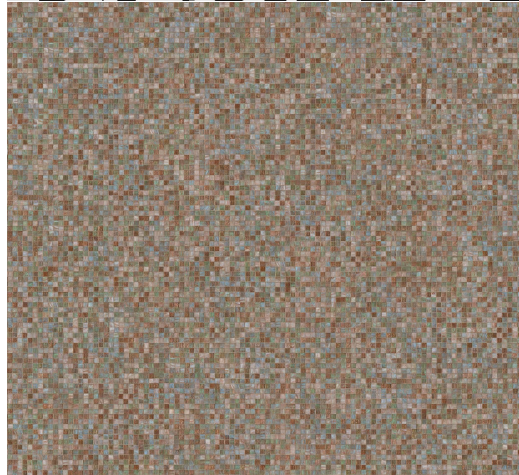
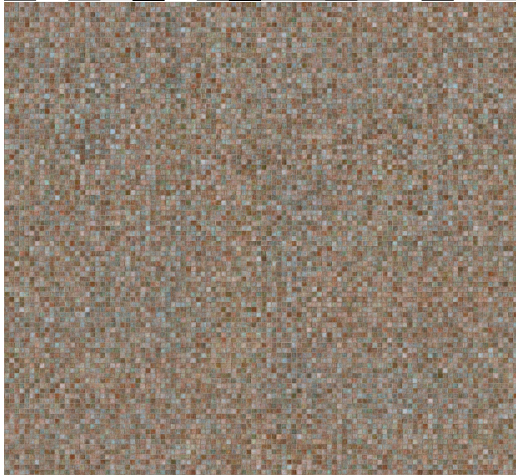
$512 \times 512$



(\*)



$1024 \times 951$



(\*) No CS histogram transfer for the CS-spot noise of this exemplar

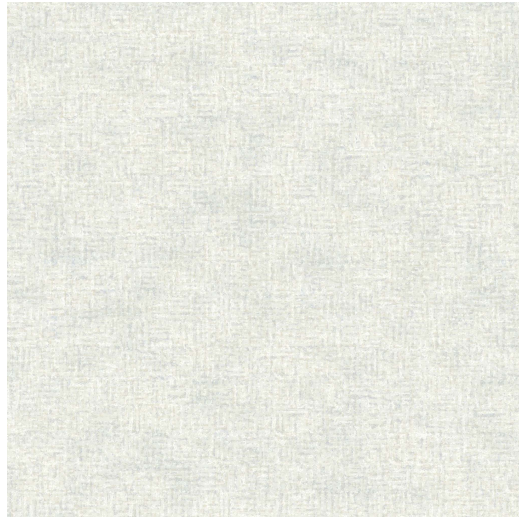
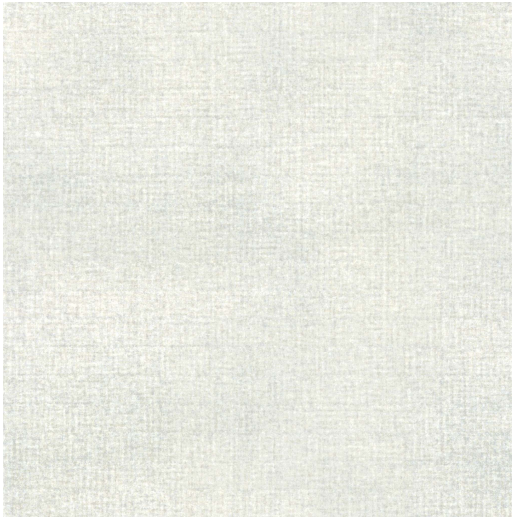
Exemplar

CS-spot noise

CS-high performance noise



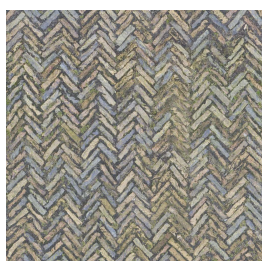
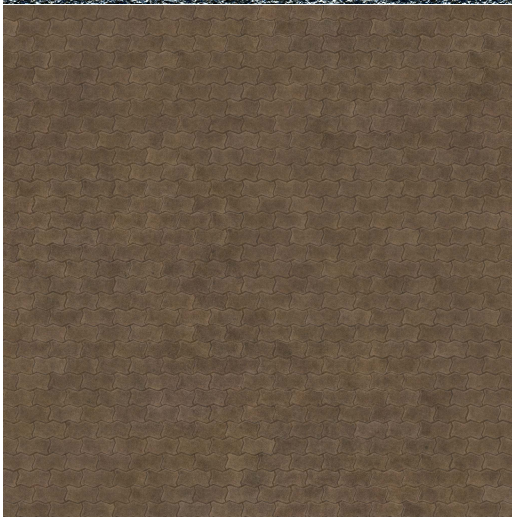
1024 × 1024



1024 × 1024



1024 × 1024



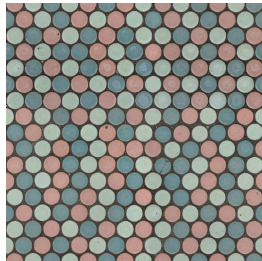
1024 × 1024



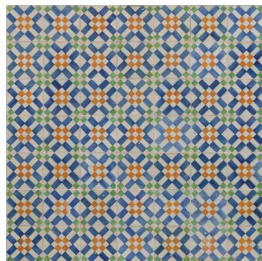
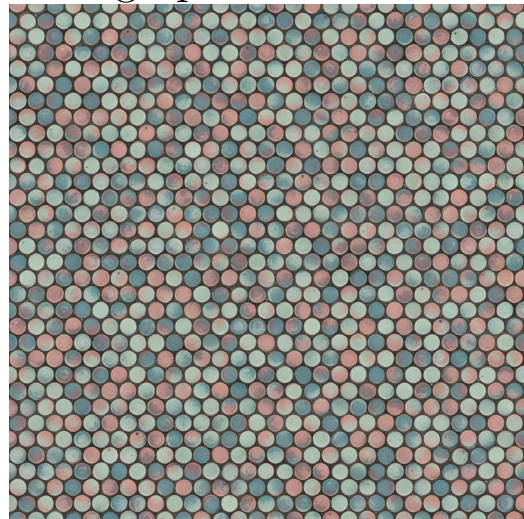
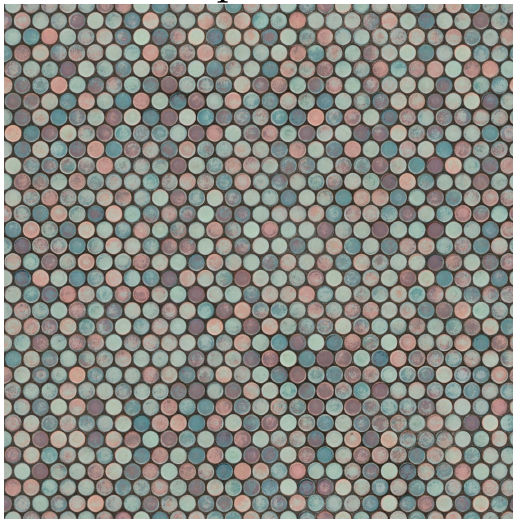
Exemplar

CS-spot noise

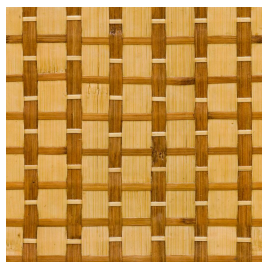
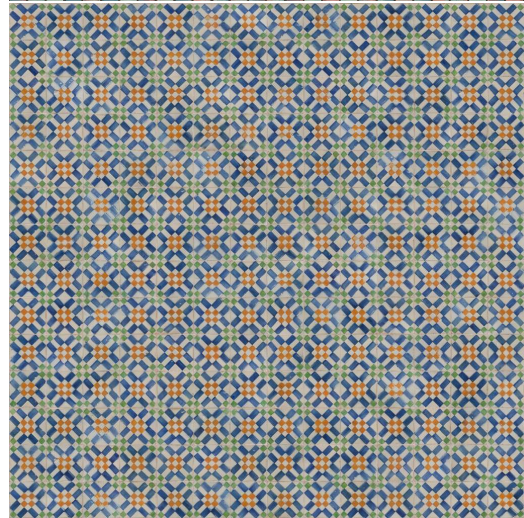
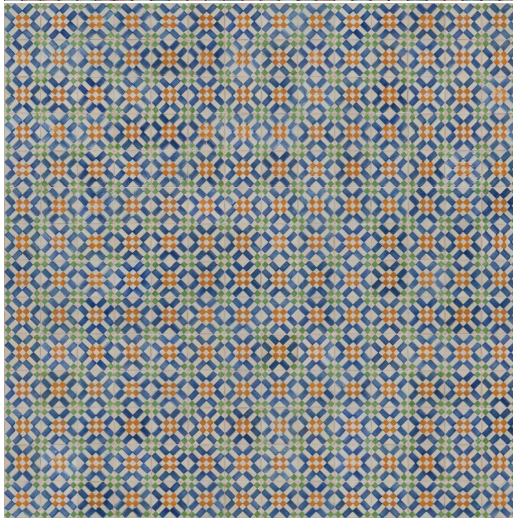
CS-high performance noise



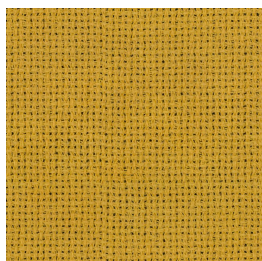
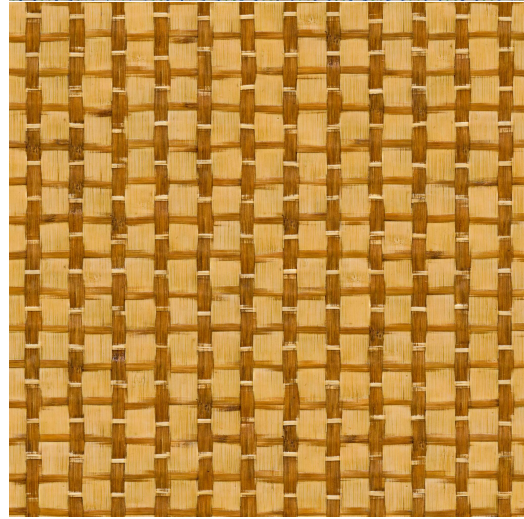
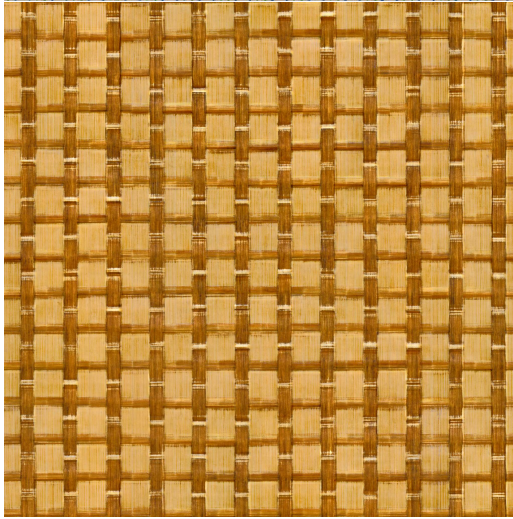
1024 × 1024



512 × 512



1024 × 1024



1024 × 1024

