Cyclostationary Gaussian noise supplemental 1

paper1152

October 2020

1 Synthesis using a spatially-varying spectrum

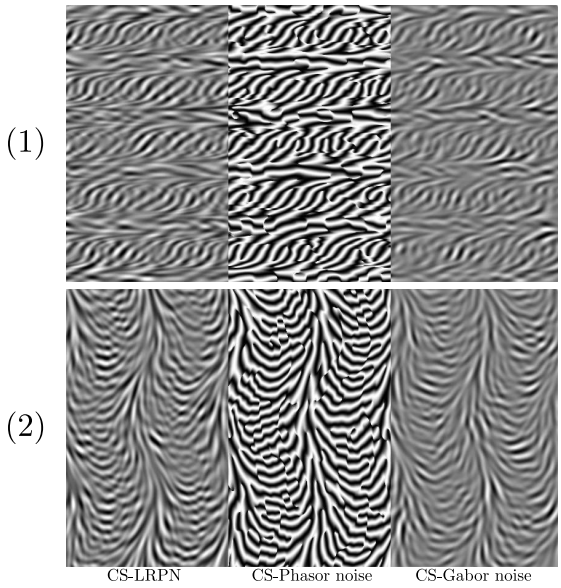
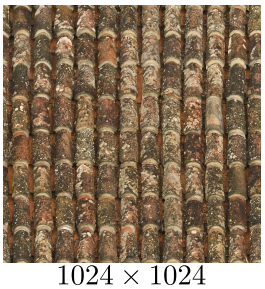
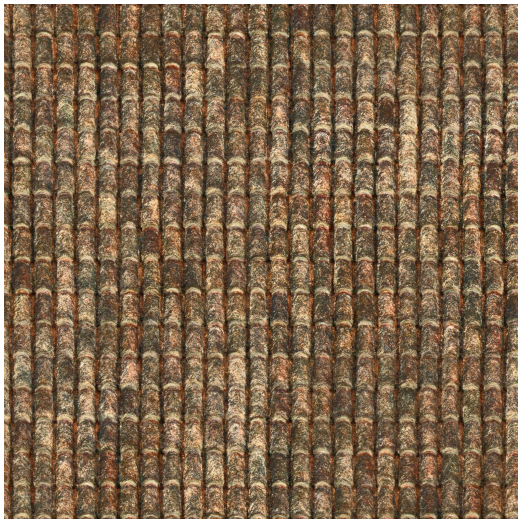
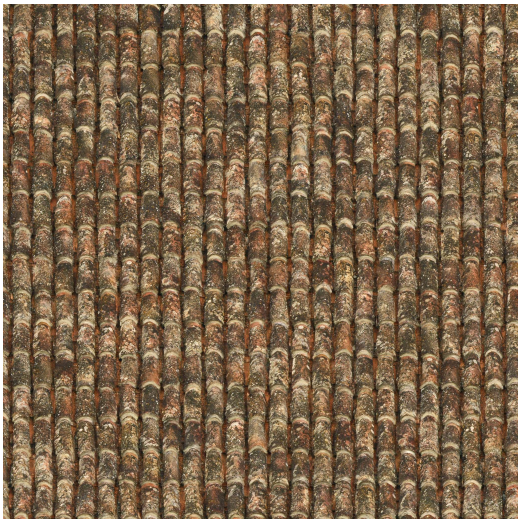
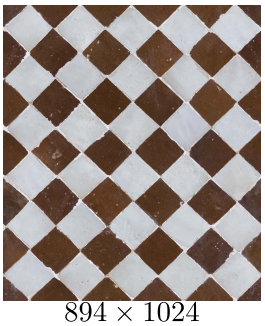
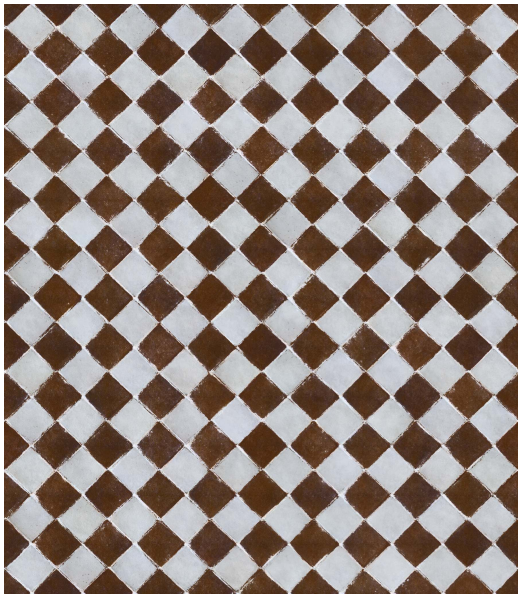
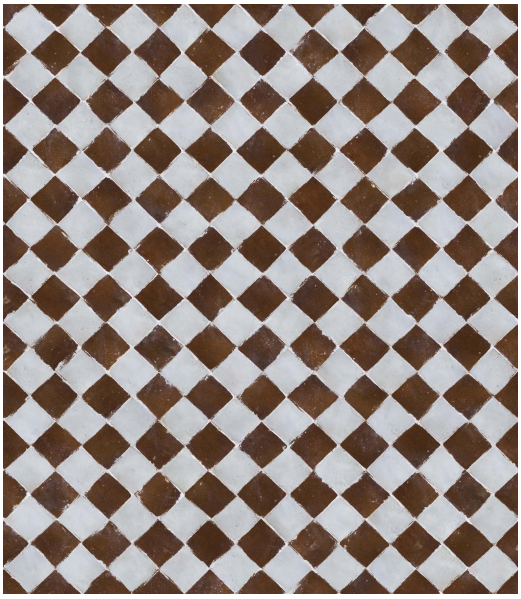
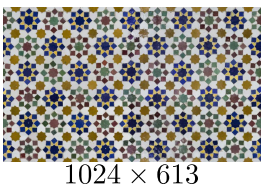
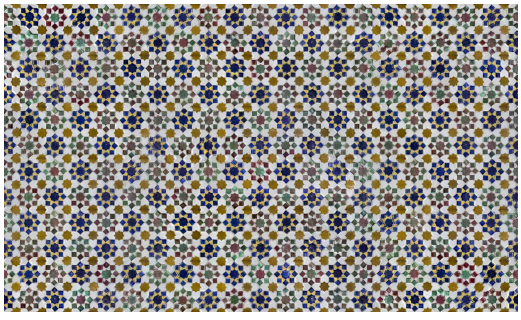
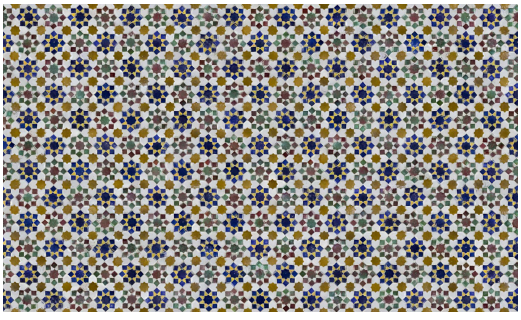


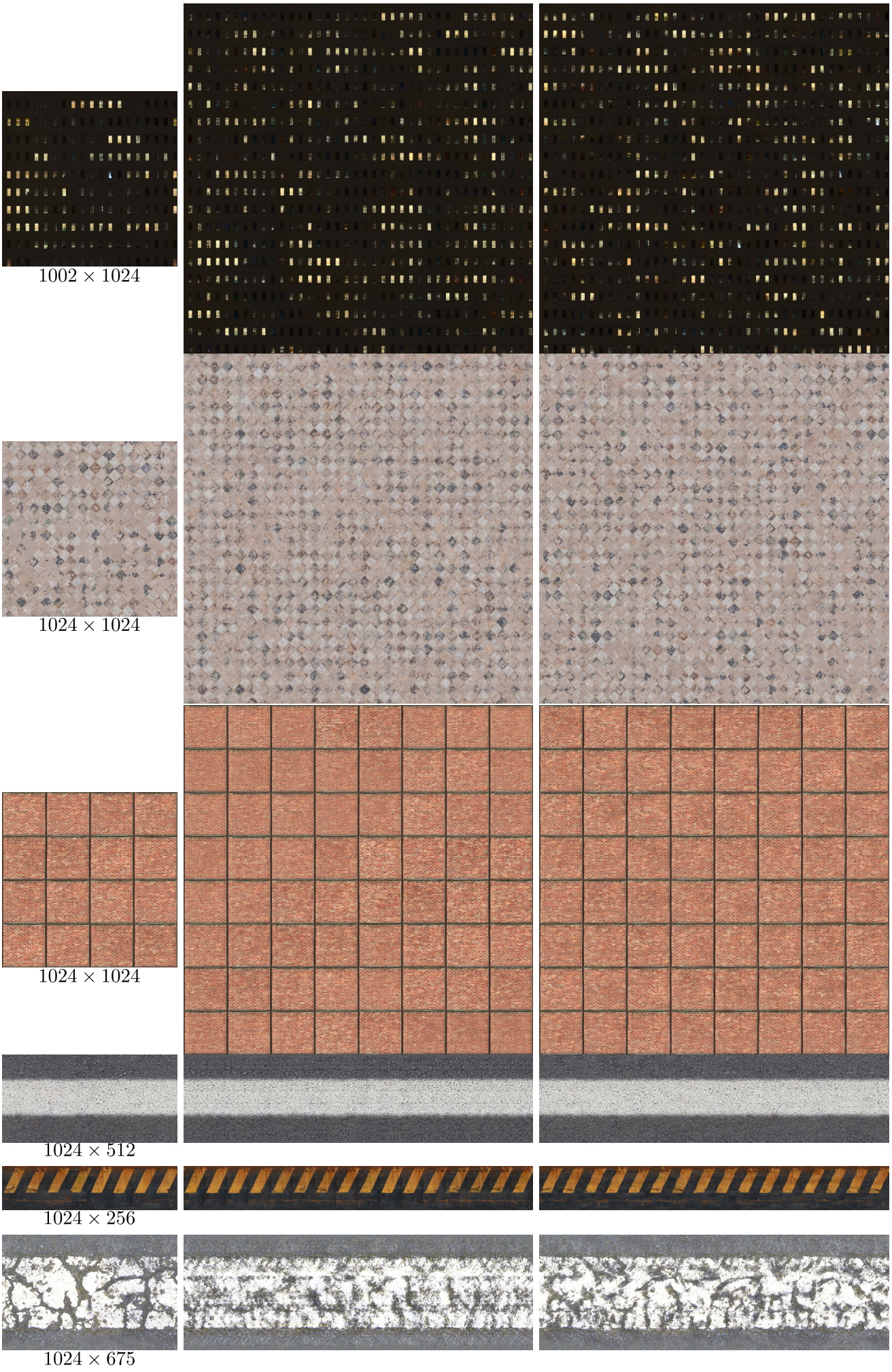
Figure 1: Examples of noise defined by a spatially-varying spectrum.

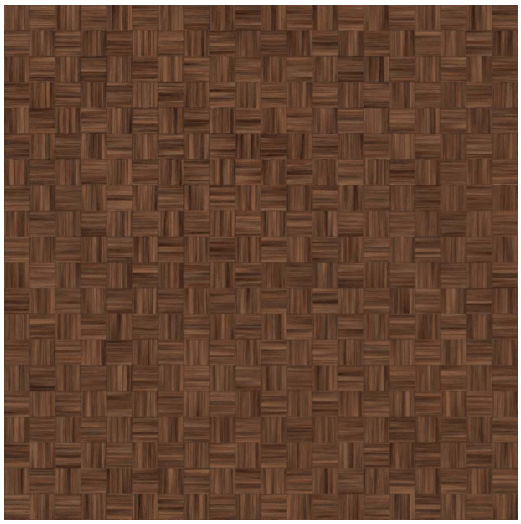
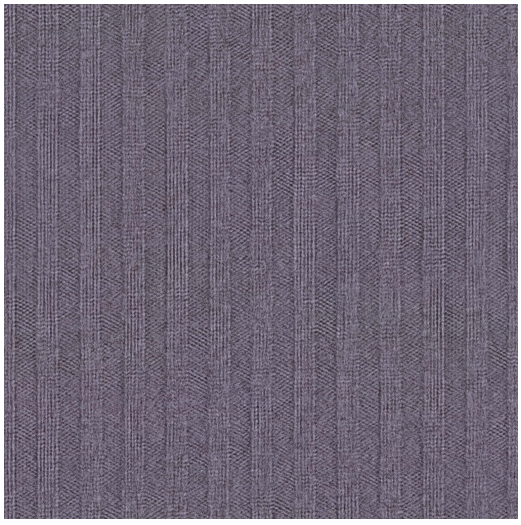
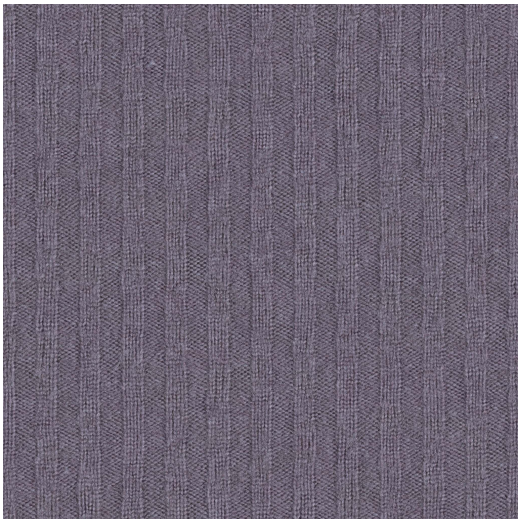
Figure 1 presents two additional examples of realizations of a cyclostationary noise defined by a procedural, spatially-varying and periodic spectrum. Our examples were produced on the following shadertoy : shadertoy.com/view/wdtcRs

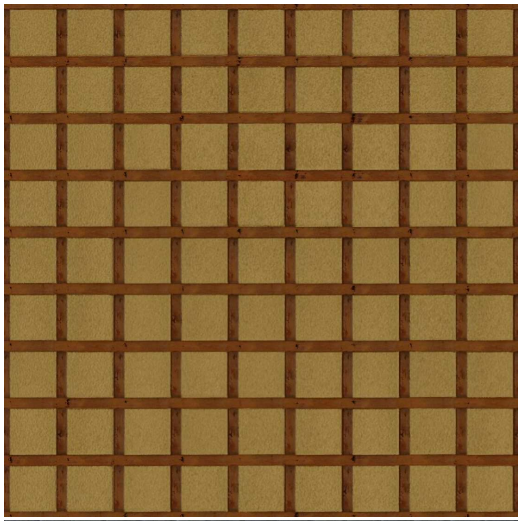
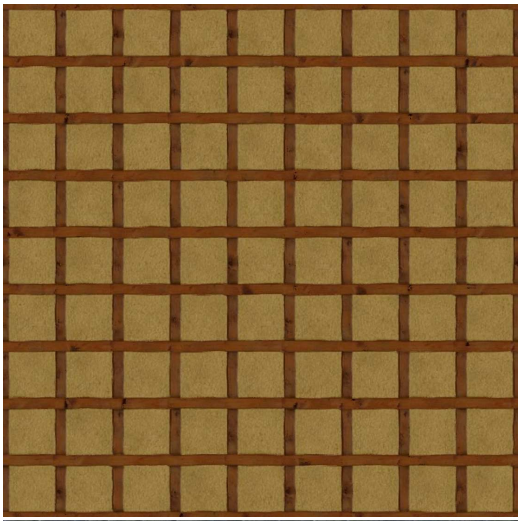
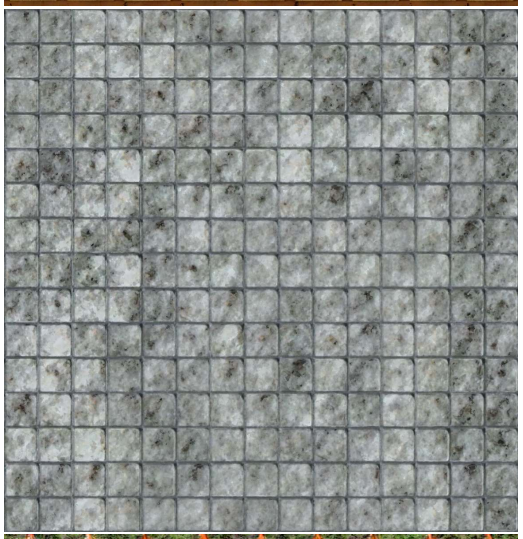
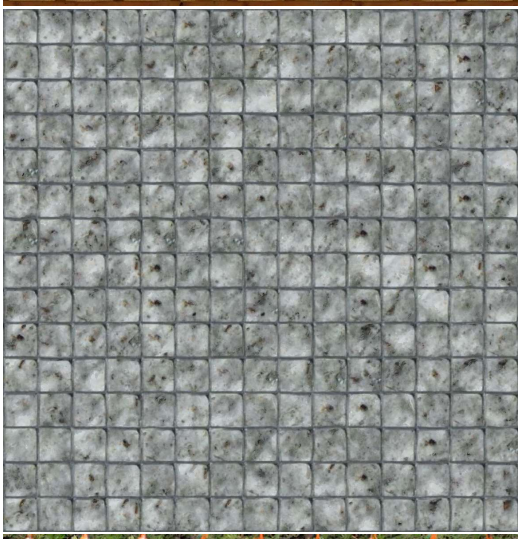
2 By-example synthesis

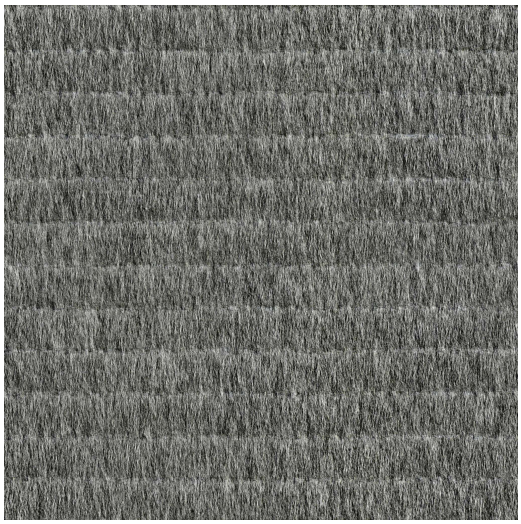
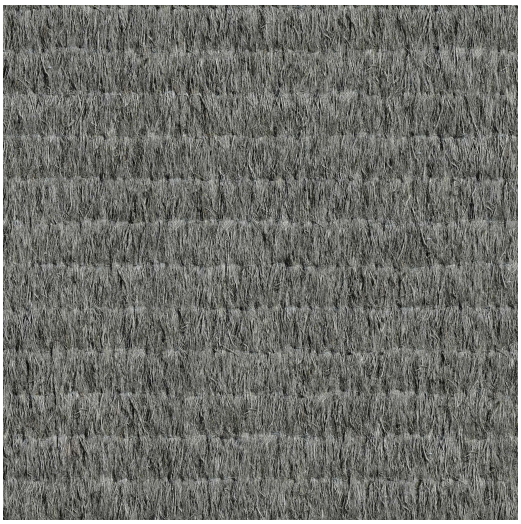
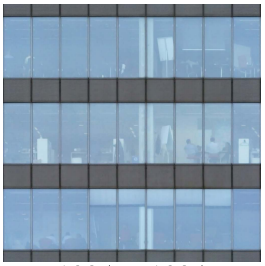
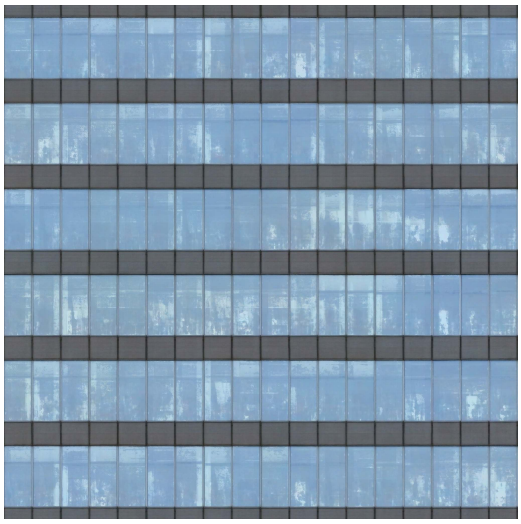
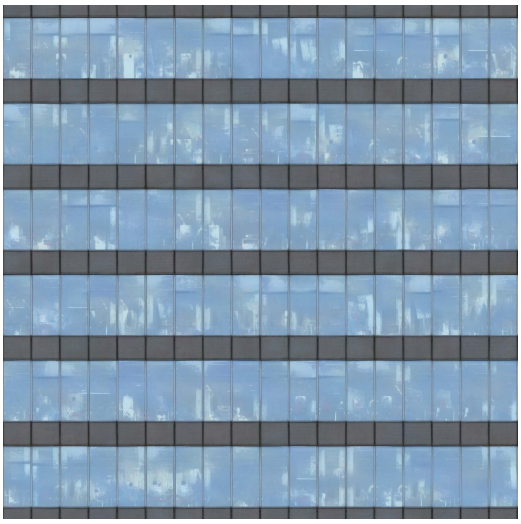
In this section, we show various results of our by-example synthesis algorithms. These results were generated with double the size of their exemplars, and used the CS histogram transfer we presented. Most of these textures can be found on textures.com.

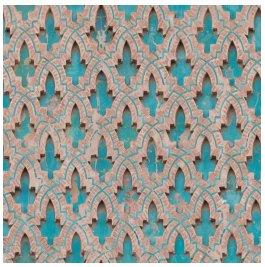
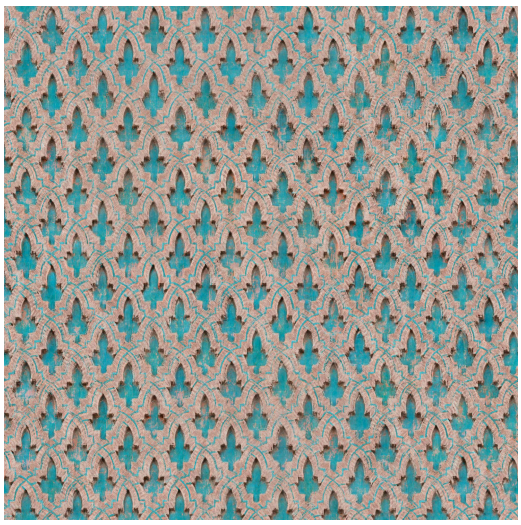
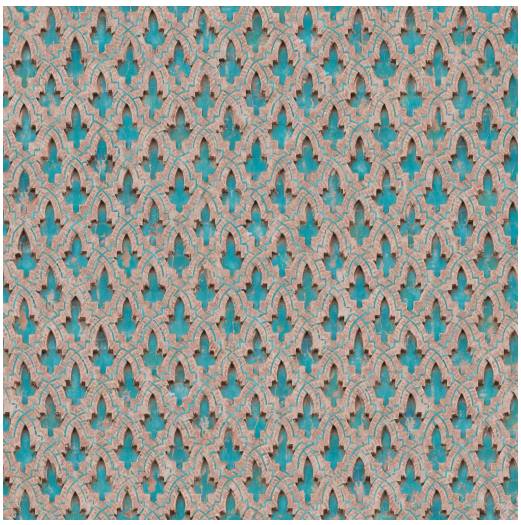
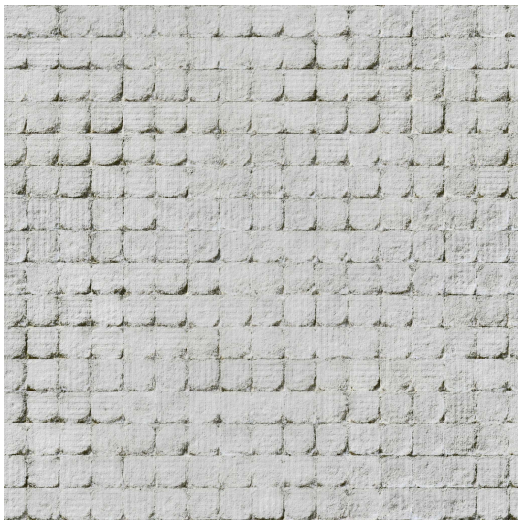
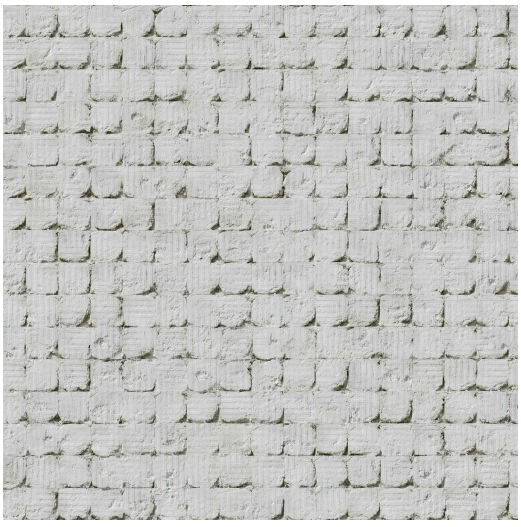
Exemplar	CS-spot noise	CS-high performance noise
 1024 × 1024		
 894 × 1024		
 1024 × 1024		
 1024 × 613		

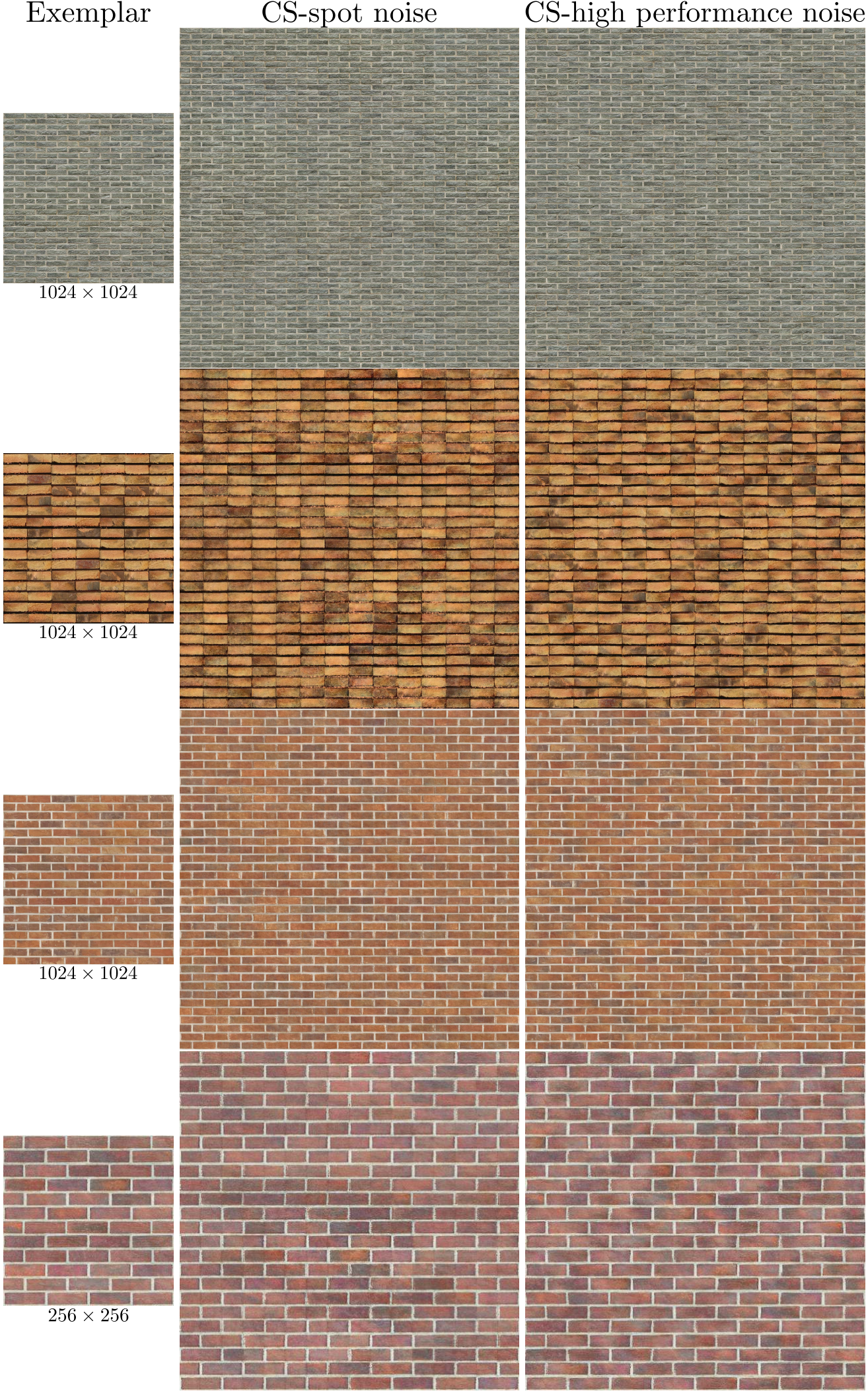

Exemplar
CS-spot noise
CS-high performance noise
1002 × 1024
1024 × 1024
1024 × 1024
1024 × 512
1024 × 256
1024 × 675

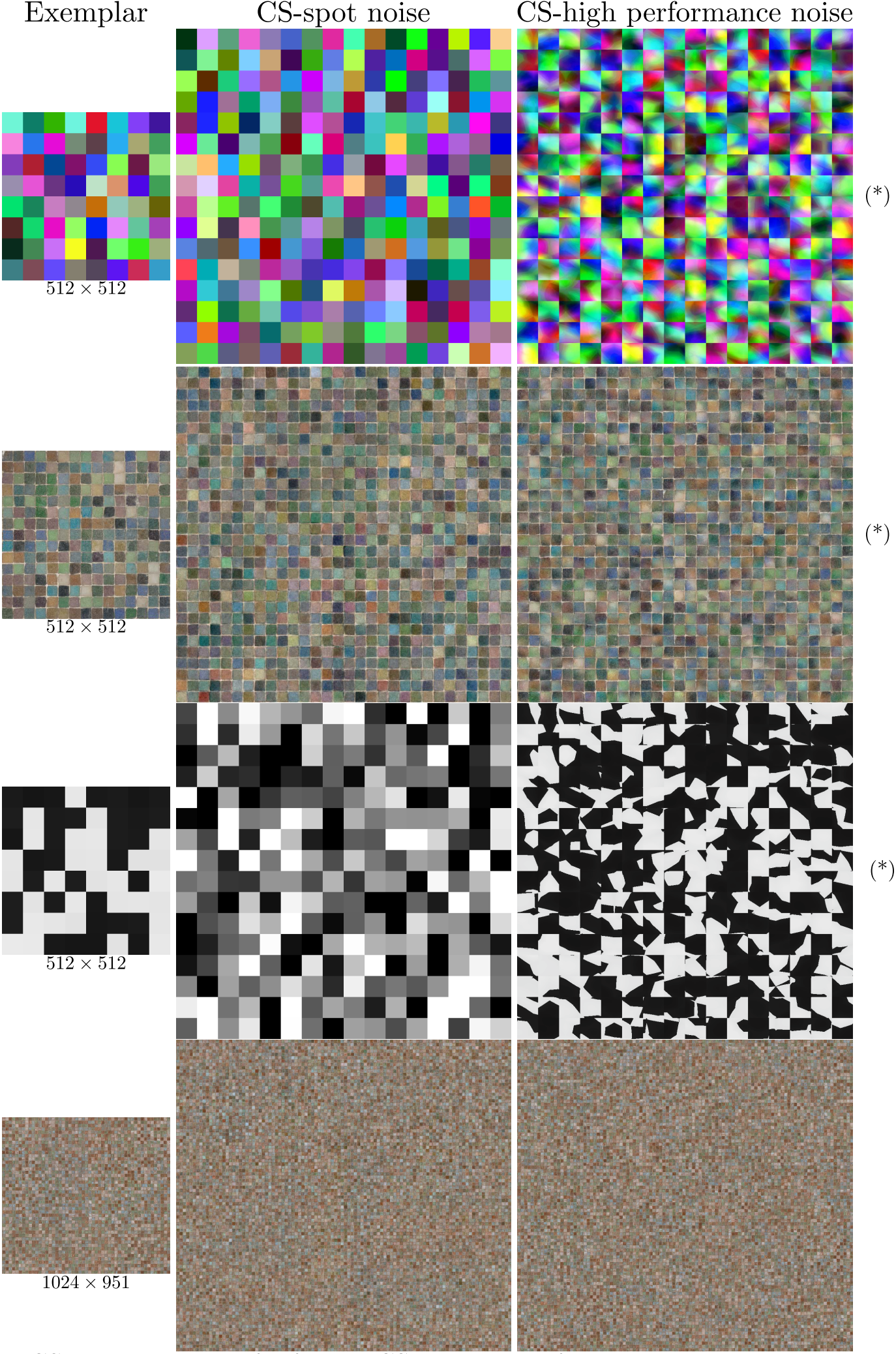
Exemplar	CS-spot noise	CS-high performance noise
 512 × 512		
 1024 × 1024		
 512 × 512		
 768 × 512		

Exemplar	CS-spot noise	CS-high performance noise
 370 × 369		
 387 × 393		
 395 × 312		
 1024 × 1024		

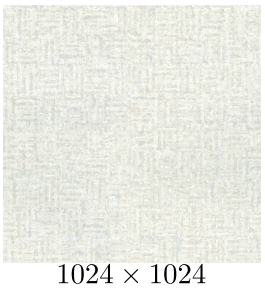
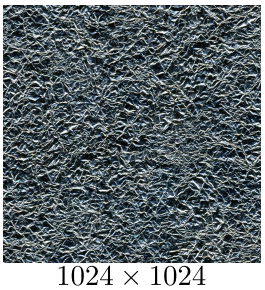
Exemplar	CS-spot noise	CS-high performance noise
 1024 × 1024		
 1024 × 1024		
 1024 × 1024		
 1024 × 618		

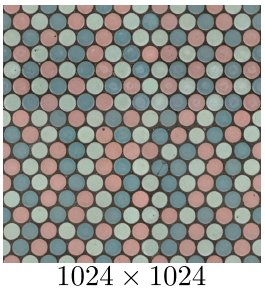
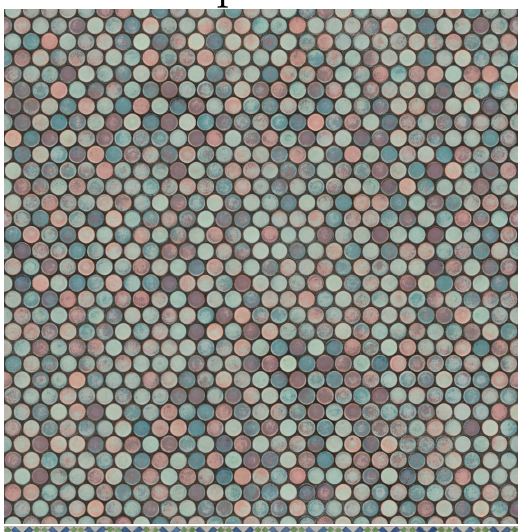
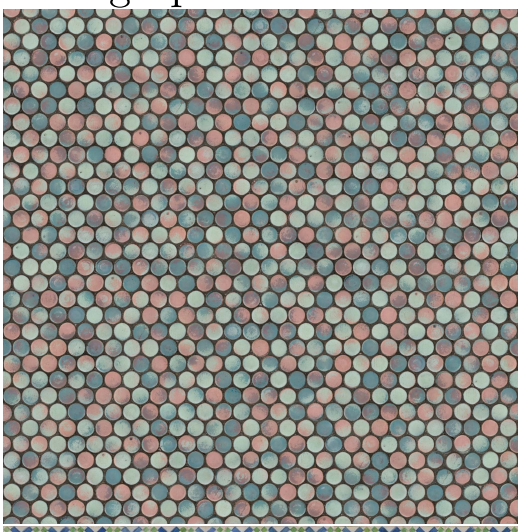
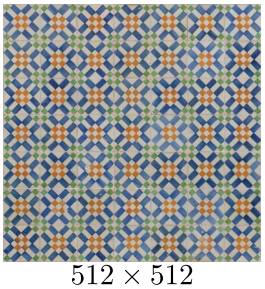
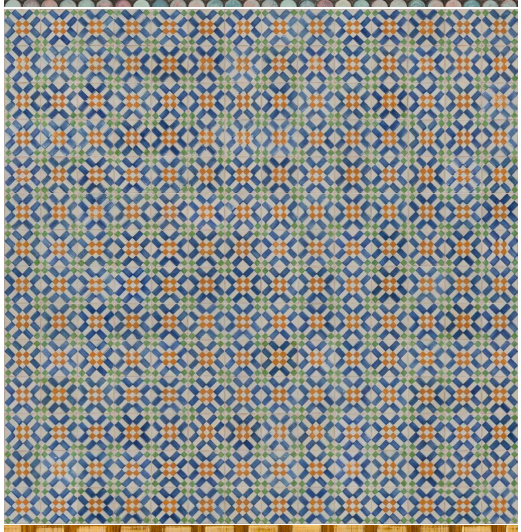
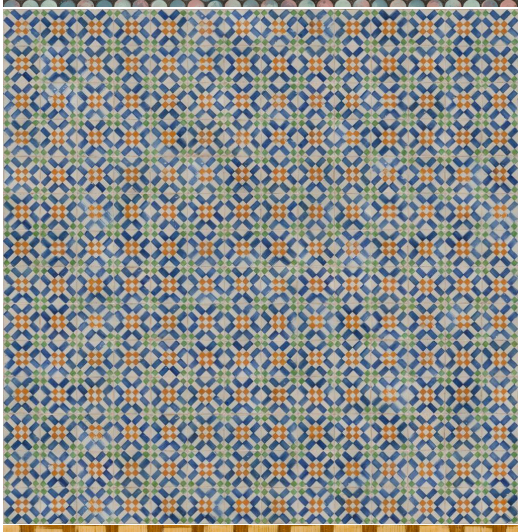
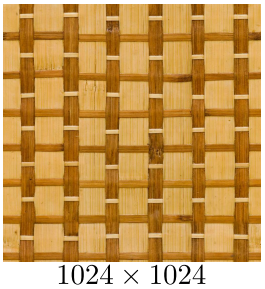
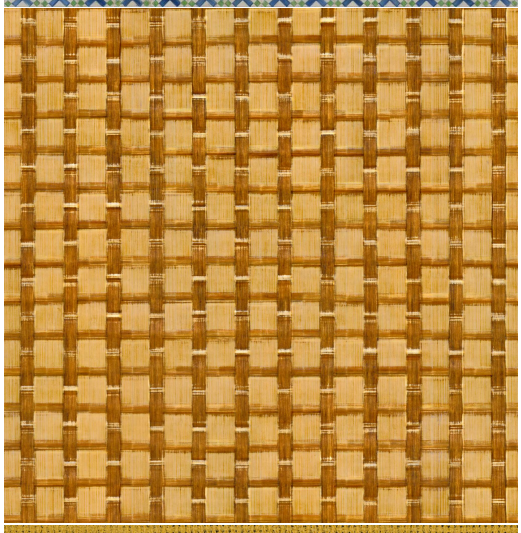
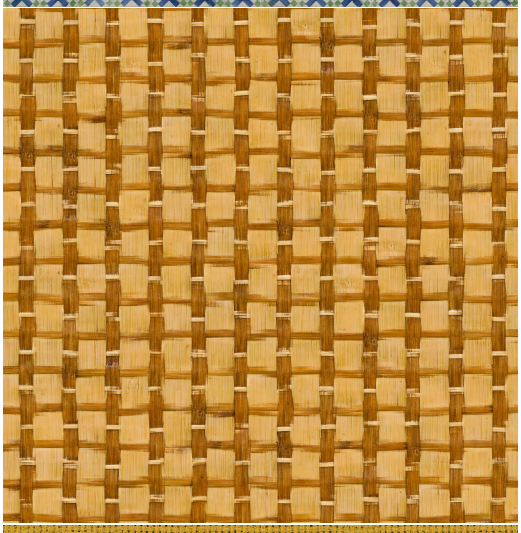
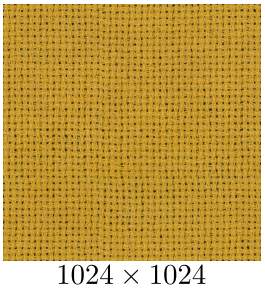
Exemplar	CS-spot noise	CS-high performance noise
 1024 × 999		
 1000 × 1000		
 1024 × 1024		
 1024 × 708		


Exemplar
CS-spot noise
CS-high performance noise
1024 × 1024
1024 × 1024
1024 × 1024
256 × 256



(*) 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