

Twill Blocks

Emery Classification

Simple Weave: two elements (one warp, one weft). **Twills** are described as progressive successions of floats in diagonal alignments.

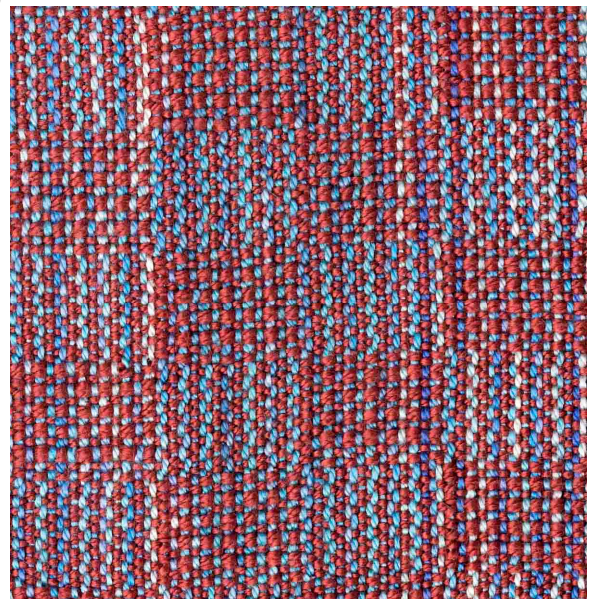
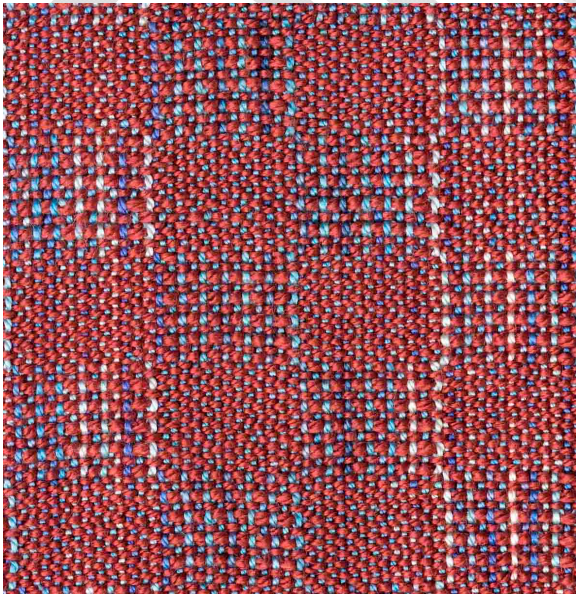
Weaving Category

A twill organized in blocks. On four shafts, the two blocks share two shafts. On eight shafts the same twill is threaded on the first four shafts and on five to eight shafts. In both cases, when one block is weft dominant, the other is warp dominant and *vice versa*.

Block Twills on Four Shafts

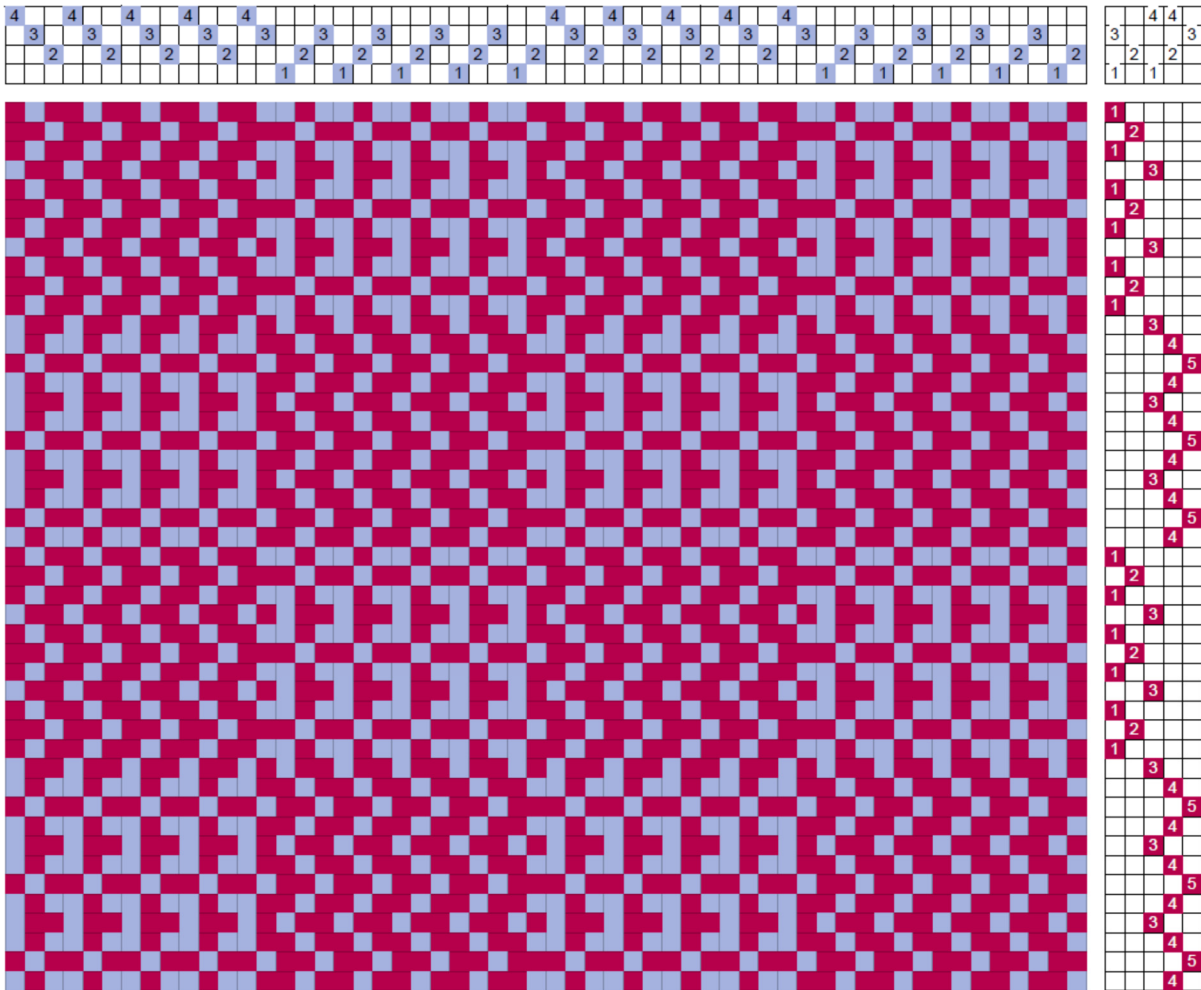
Fabric Characteristics

Below are the front and back of a twill block fabric on four shafts. The picture matches the two sides, so the first block on the right side is the same in both photos: when one block is warp domain on one side, it's weft dominant on the other side.

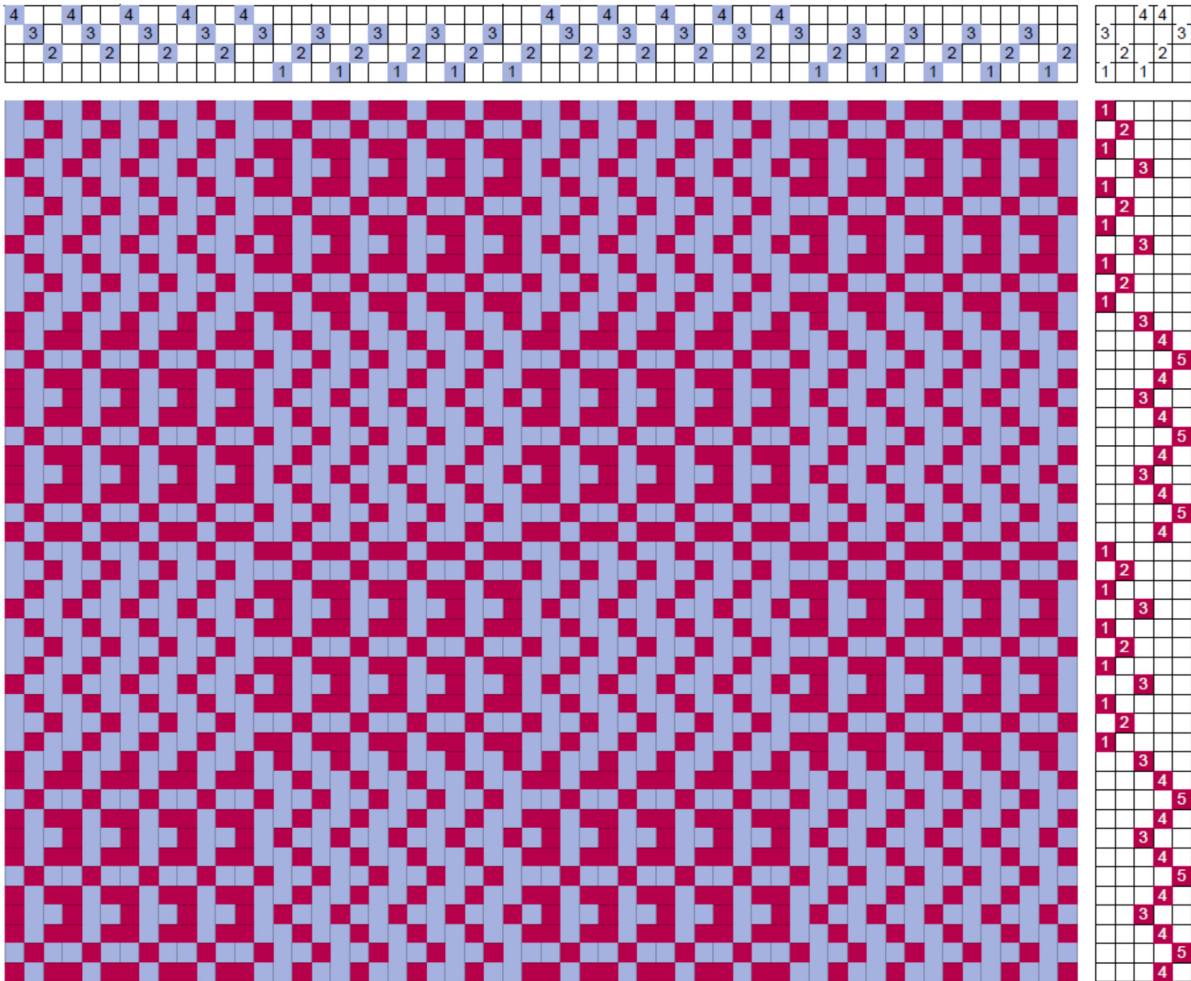


Drawdown

The first drawdown is for a *rising shed* used to weave the previous sample. There are four repeats of each block on three shafts, but one shaft is omitted to balance the pattern. In treadling, all shafts are used to weave each block.



The following drawdown is for *sinking shed* loom. It produces the back of the fabric sample shown above.



Davison's book describes other four-shaft twill blocks.

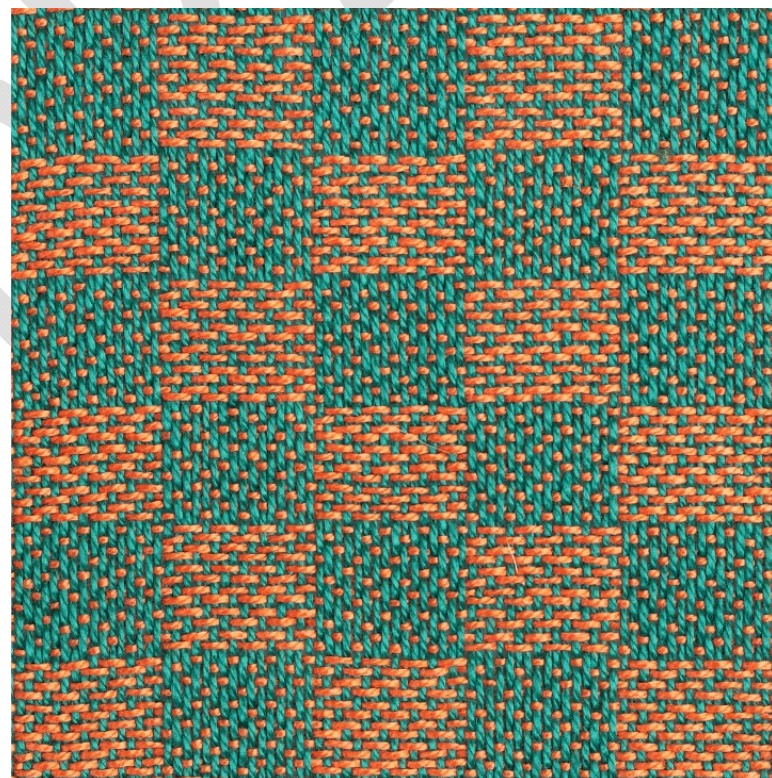
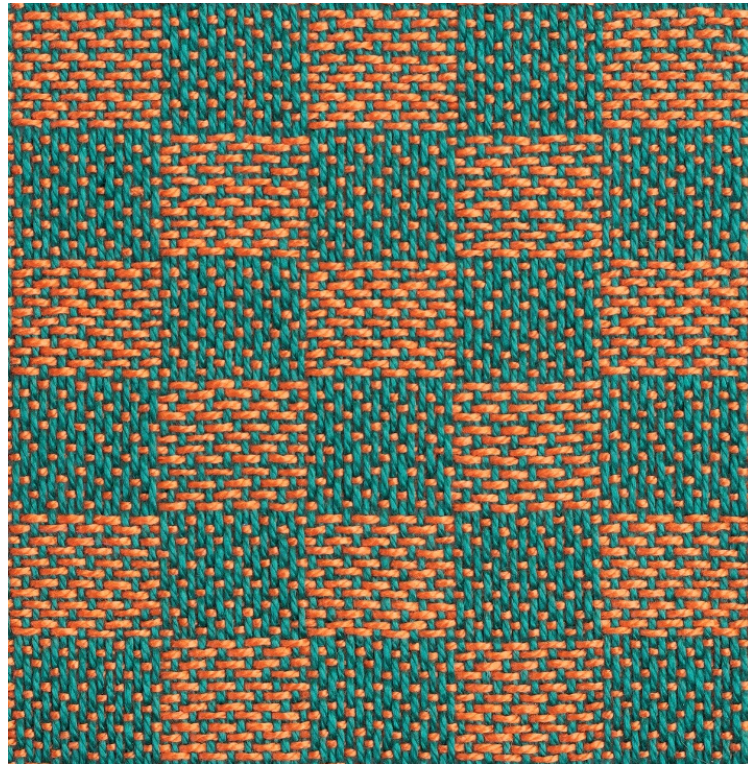
Block Twills on Eight Shafts

Fabric Characteristics and Drawdowns

On eight shafts, the blocks are more distinct. Below are the fabric samples of two types of blocks.

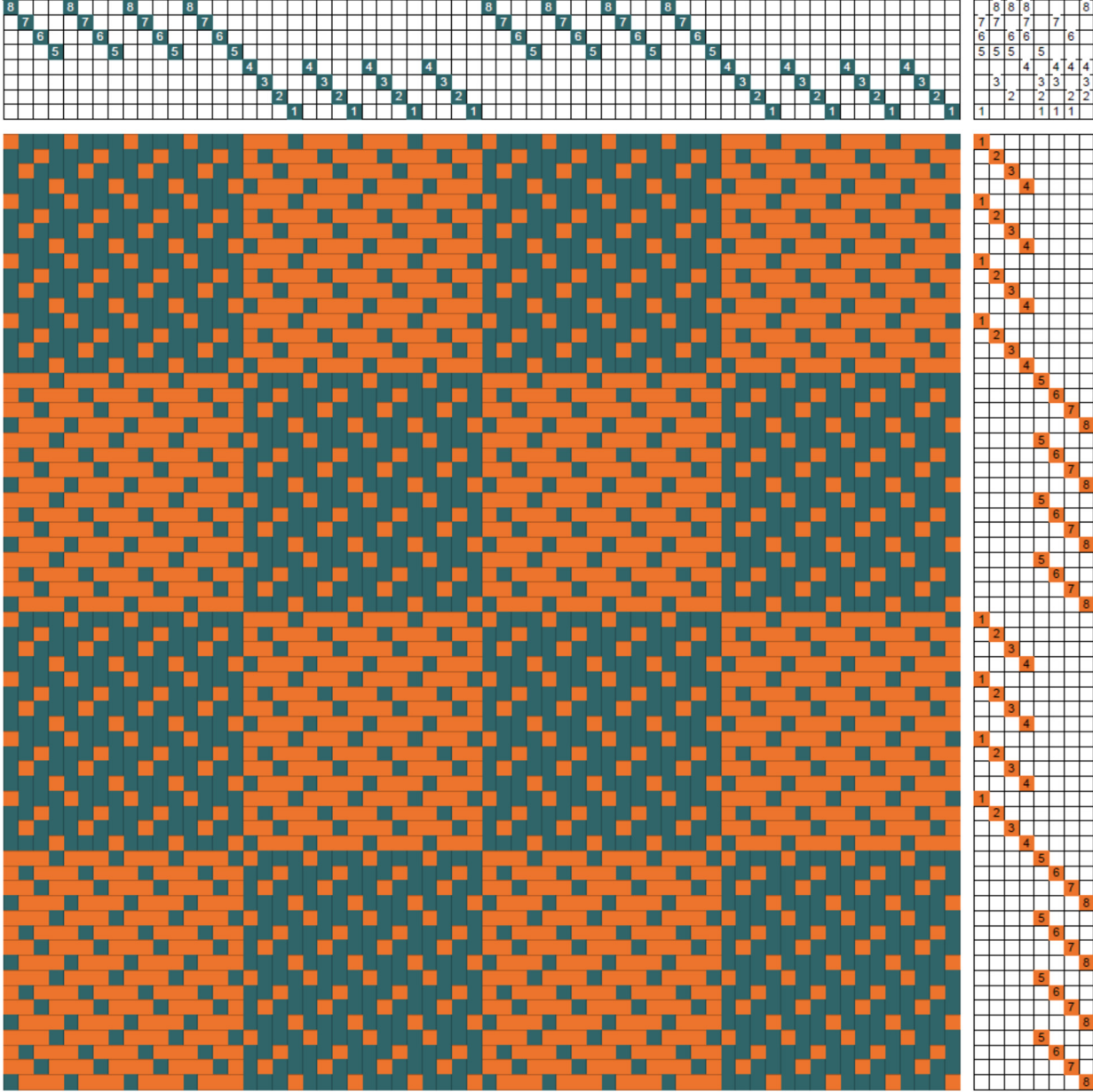
Generally, while one block is weft dominant, the other is warp dominant; on the other side the blocks are reversed, but the characteristics are the same on both sides of the fabric.

The first sample is of a 3/1 broken twill block, also called false satin, front and back.



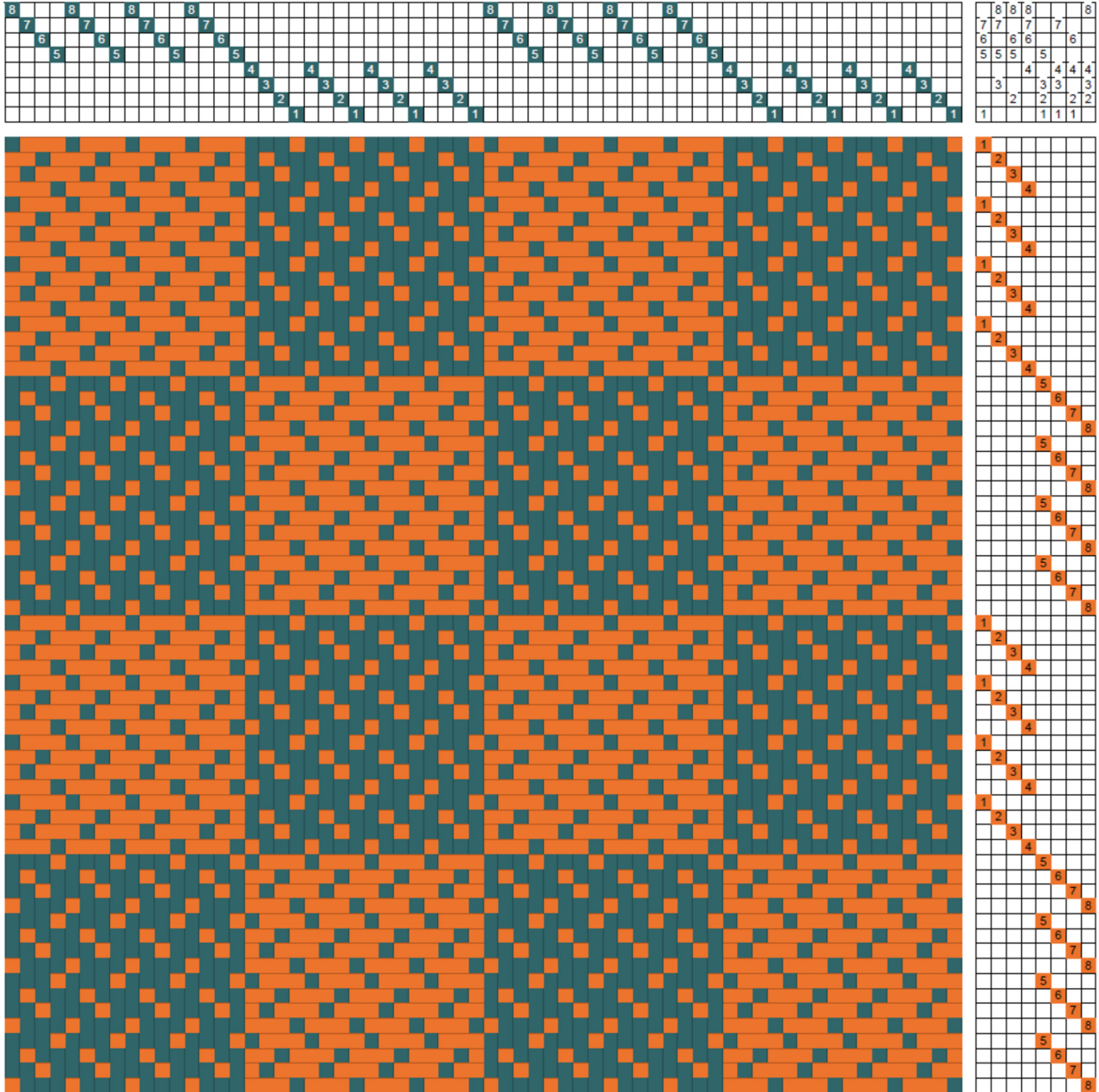
4 Twill Blocks

Rising shed drawdown is below.

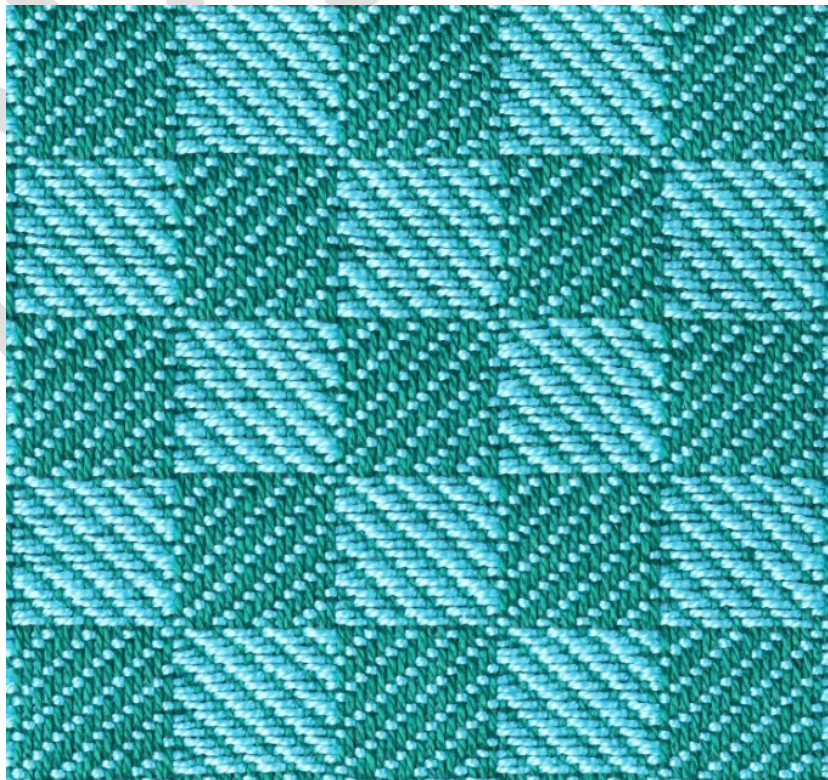
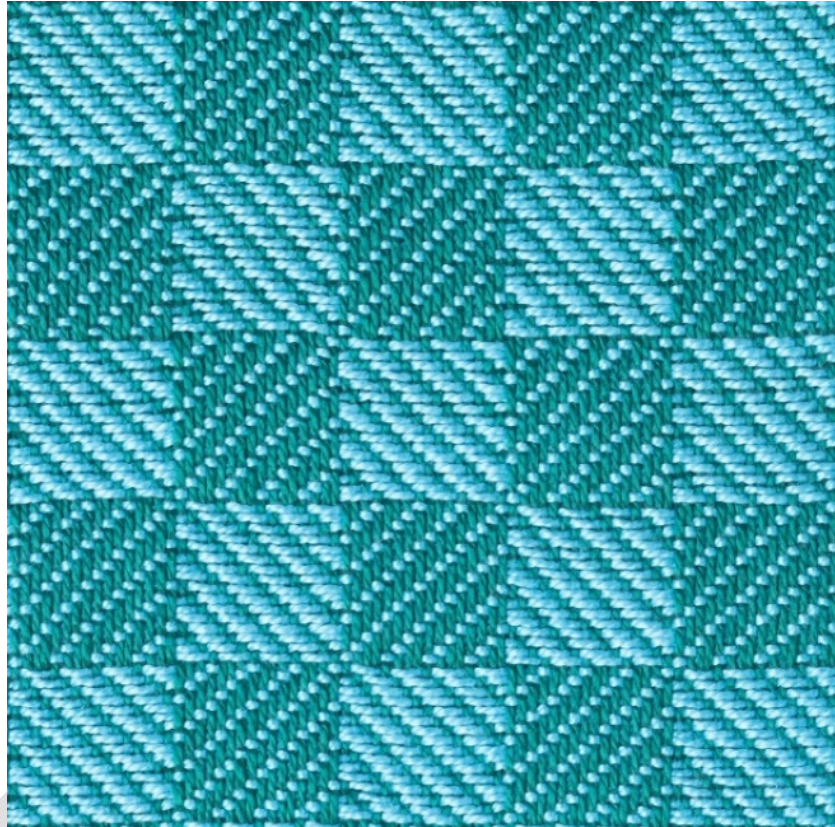


5 Twill Blocks

As usual, the *sinking shed* drawdown below shows the reverse side of the fabric sample above.

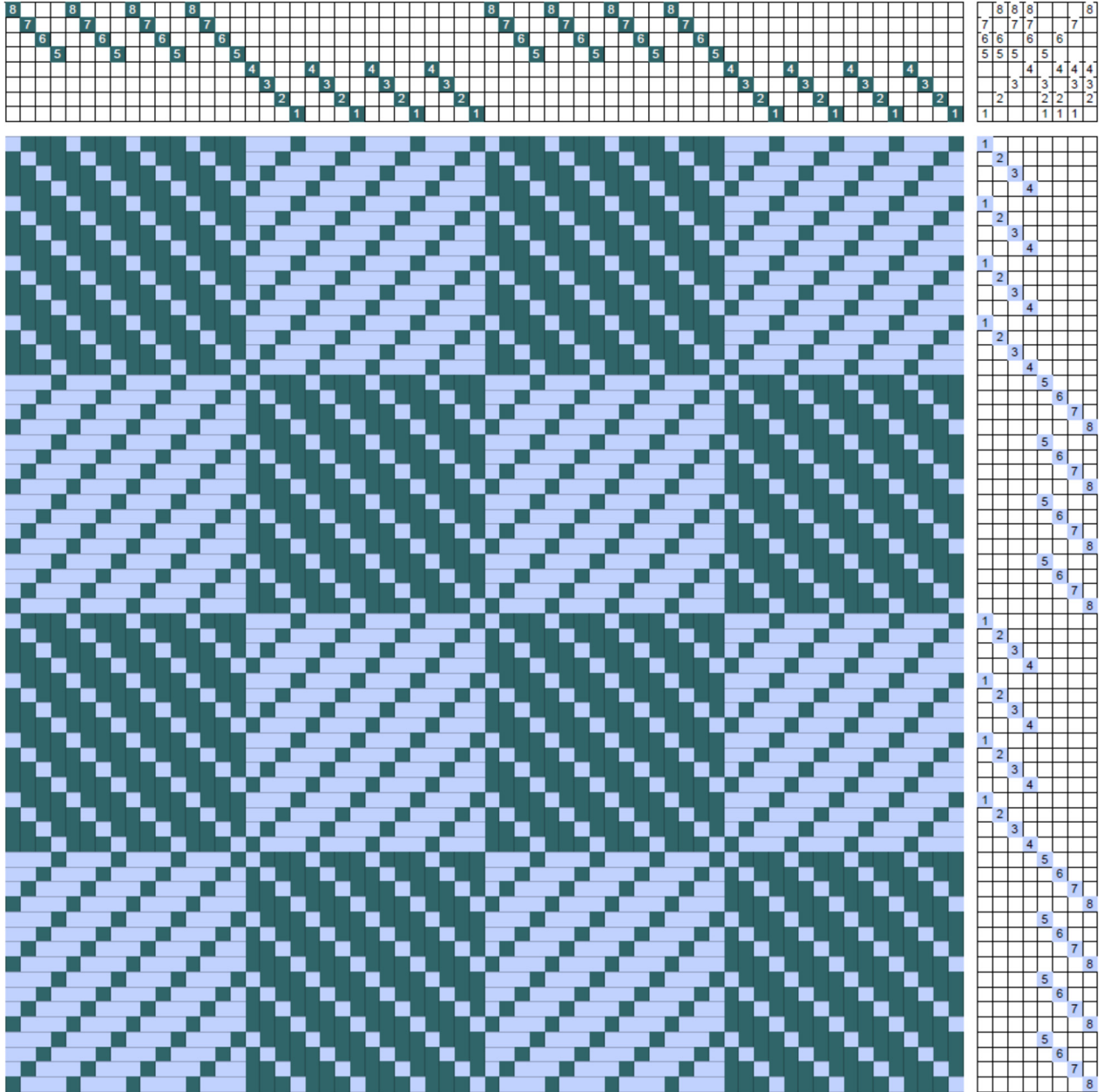


Next is the fabric samples of 3/1 straight twill block, often called turned twills, front and back.



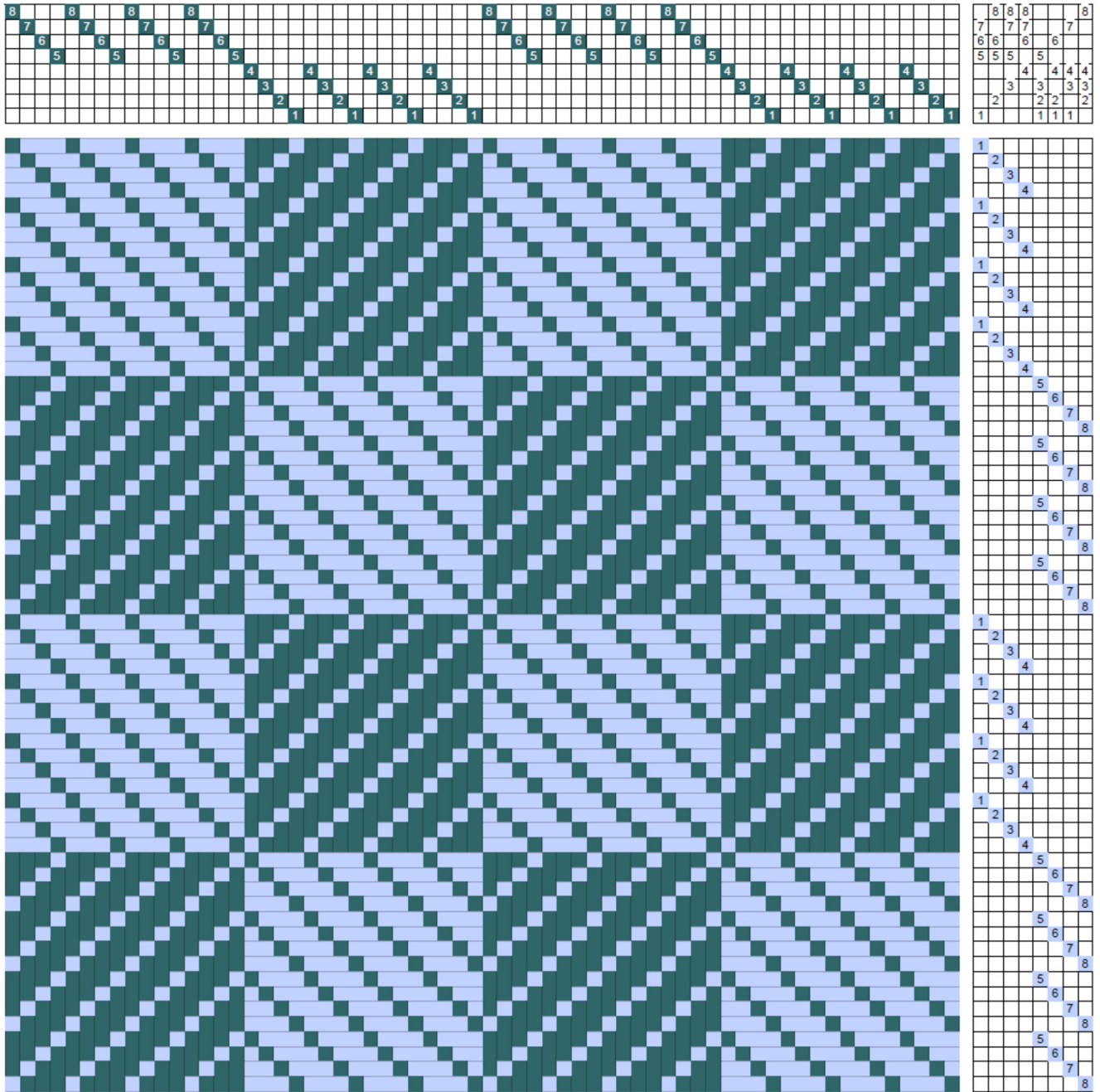
7 Twill Blocks

First the drawdowns for the *rising shed*:



8 Twill Blocks

Next the drawdown for the *sinking shed*, which is the reverse side as usual.



Function

A fabric woven with twill blocks doesn't drape as well as a twill, both because the structure is organized in blocks, and because warp or weft dominant fabrics pack in more weft. These fabric would make great household textiles. To weave a showy twill block scarf, use thinner yarns.

Sett

The sett is that appropriate for a twill.

Width of Blocks

Each block should be at least two repeats of the twill pattern. More repeats can be used, but the repeat must generally be complete. In the four-shaft blocks discussed first, however, the twill repeat is not complete.

Number of Blocks Available

For the traditional twill blocks, each block requires four shafts. Thus, there are two blocks on eight shafts, and an additional block for every additional four shafts.

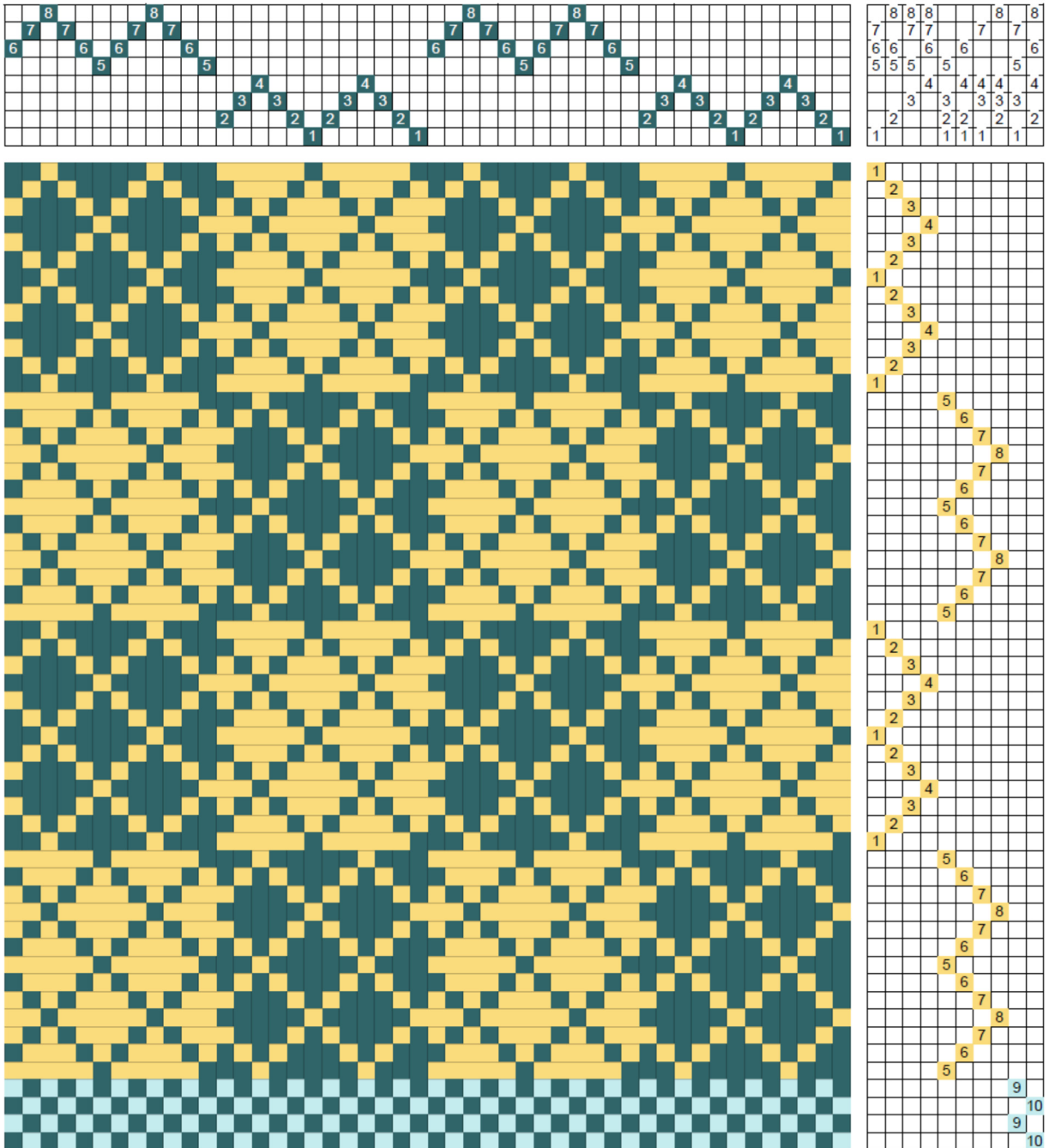
Other Options

Strickler describes the threading process for twill blocks as using at least two repeats of a four-shaft twill, first on shafts 1 through 4, then on shafts 5 through 8. Then there are a variety of treadling options.

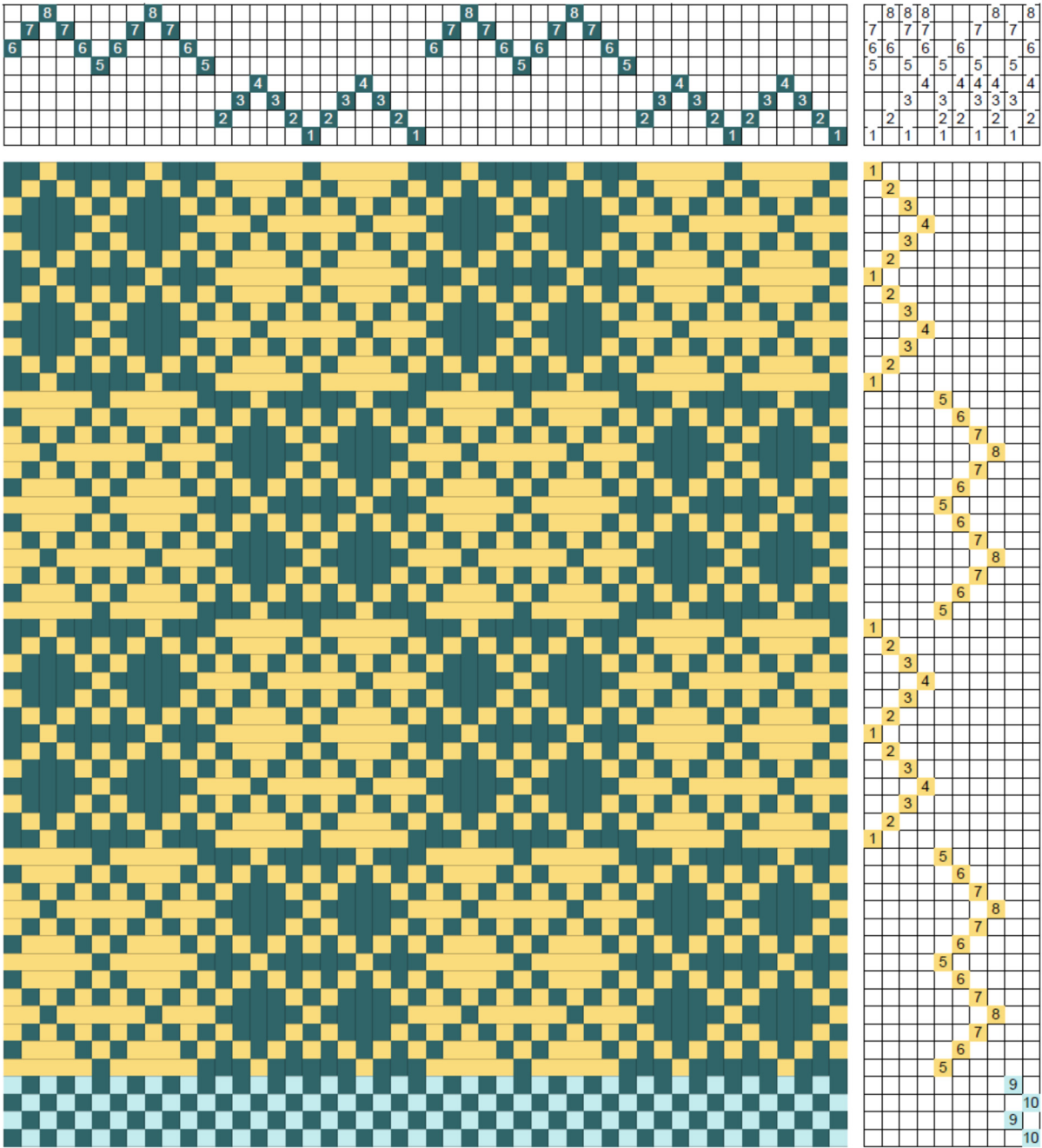
I chose one threading and two treadling step options. (By treadling steps, I mean the combination of the tie-up and treadling sequence, resulting in which shafts are activated, either raised or lowered depending on the loom).

The threading is that of a pointed twill, but not balanced so as to maintain the plain weave across the fabric. The first sample uses the tie-up from the turned twill block above, and a "tromp as writ" treadling, but adding a balancing treadling step to make the blocks mirror images top to bottom.

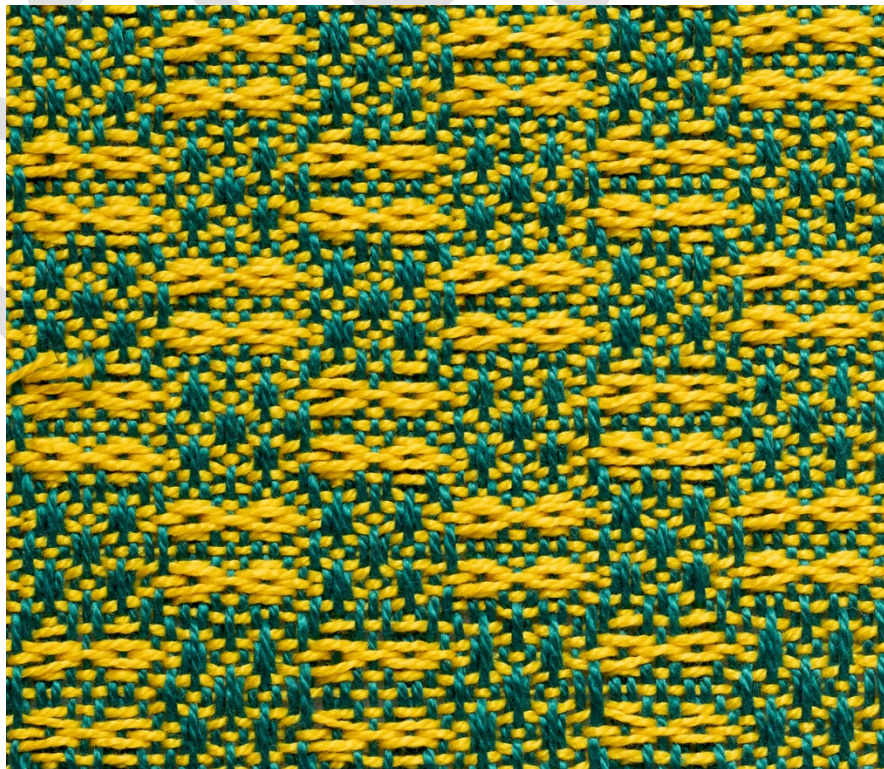
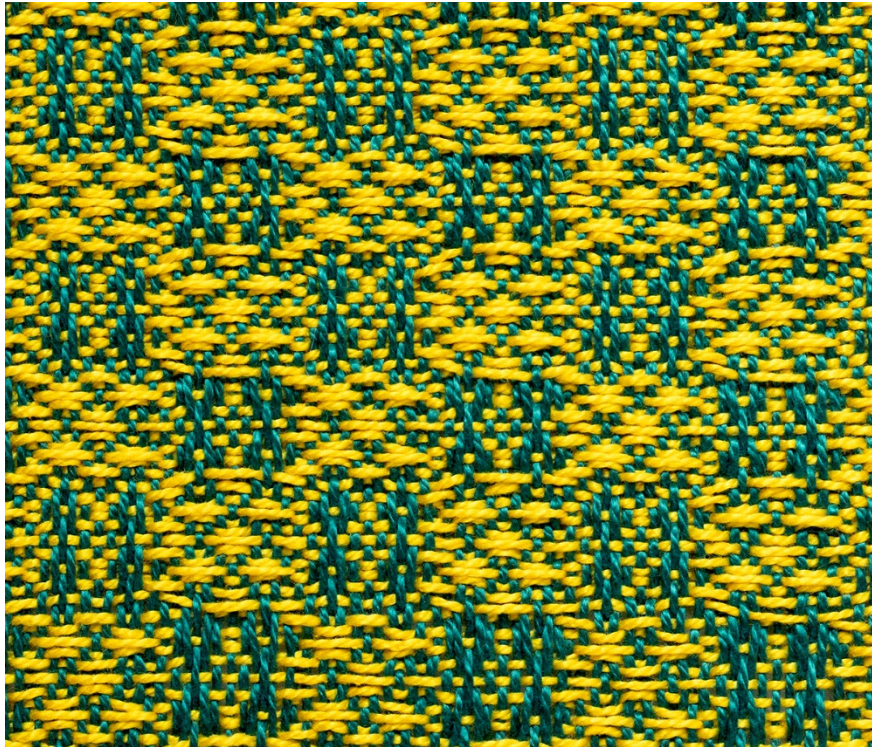
The original drawdown is next, *rising shed*.



To make the blocks symmetrical right to left, I modified the treadling steps by changing the tie-up as shown next in the *rising shed* drawdown. (The sinking shed drawdown would show the other side of the fabric).

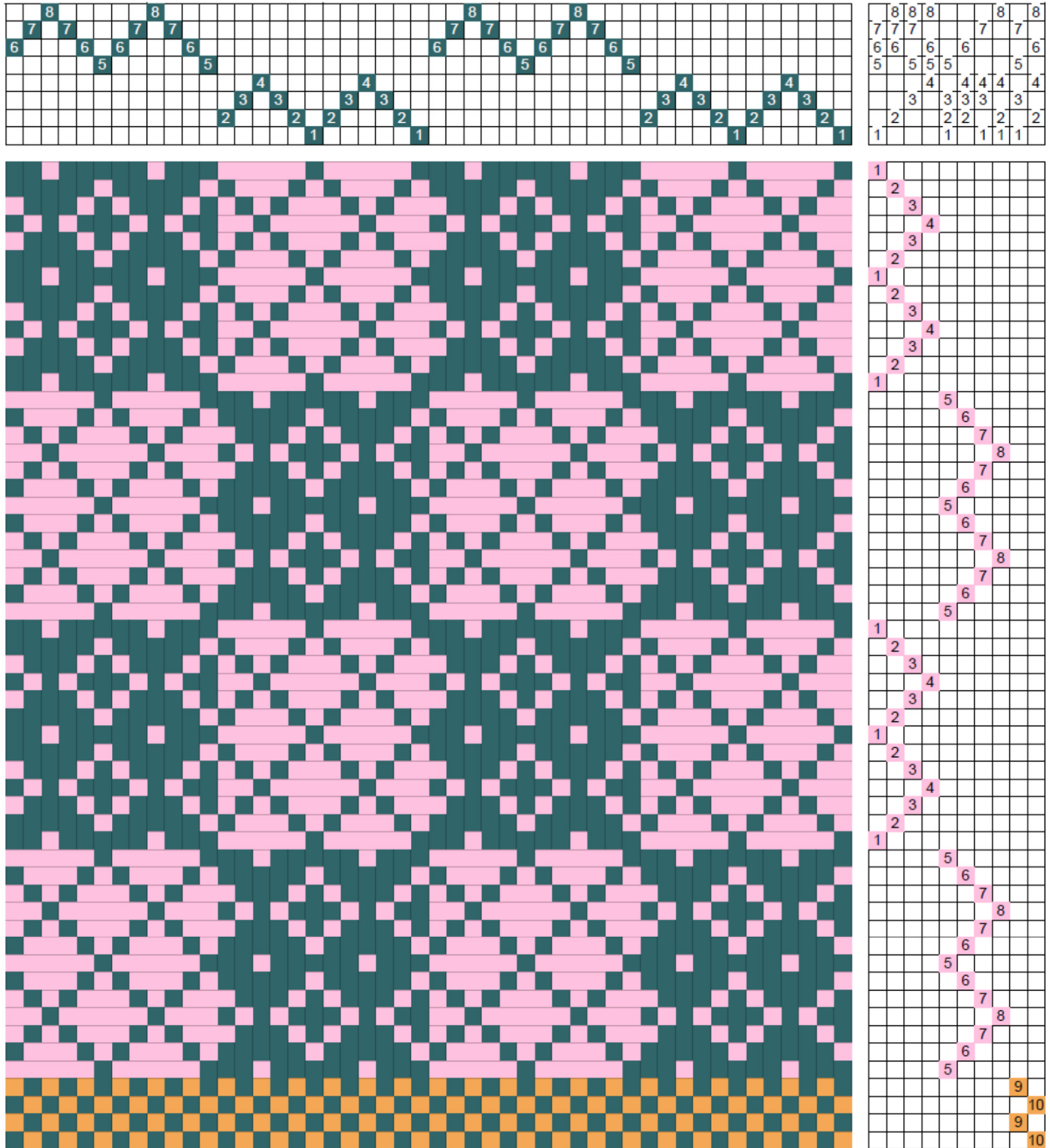


Here is the fabric sample, front and back.



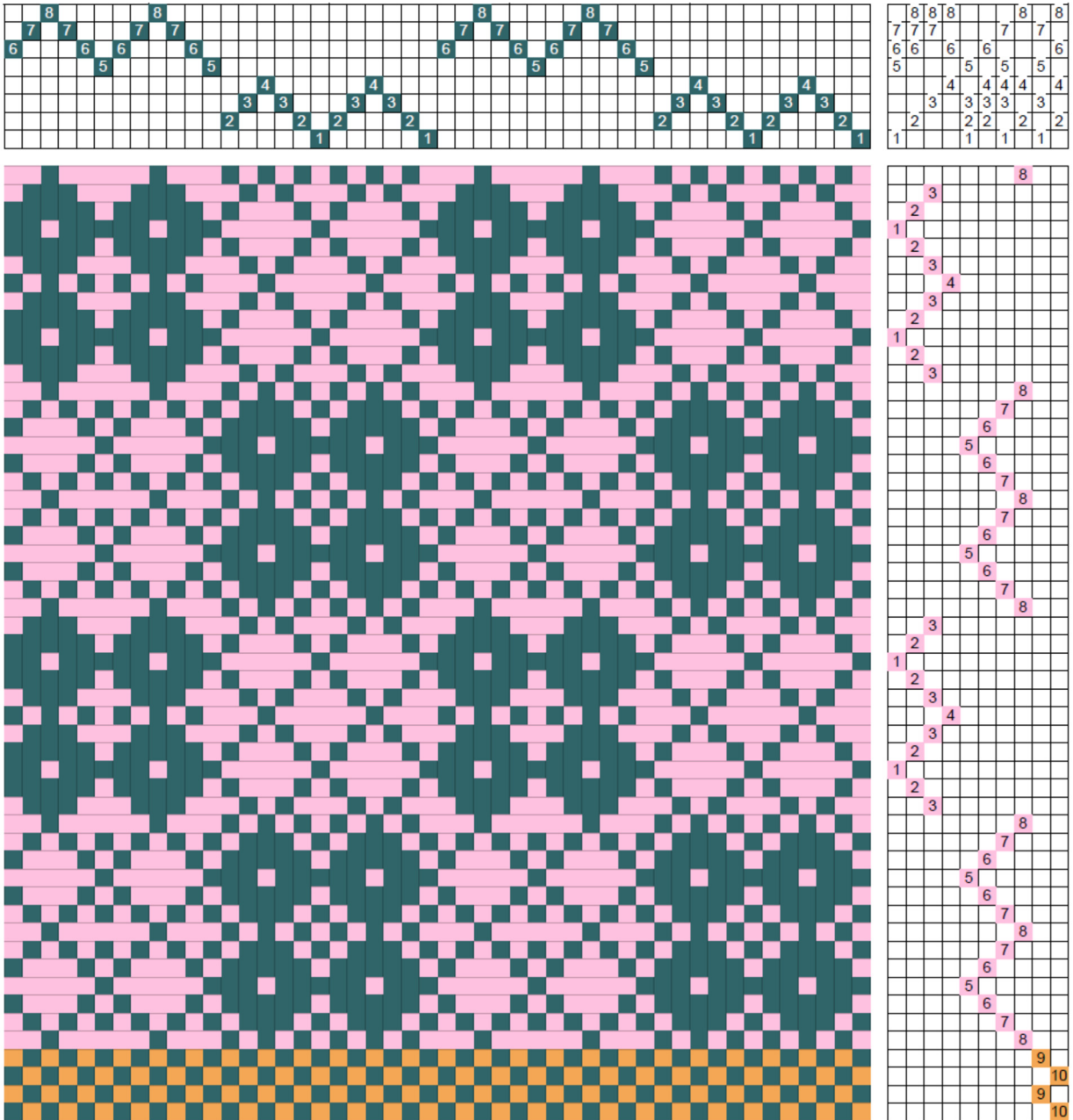
13 Twill Blocks

The next tie-up I chose resulted in two features I wanted to change; the half motifs in some of the blocks and the asymmetry, as seen from the *rising shed* drawdown below.

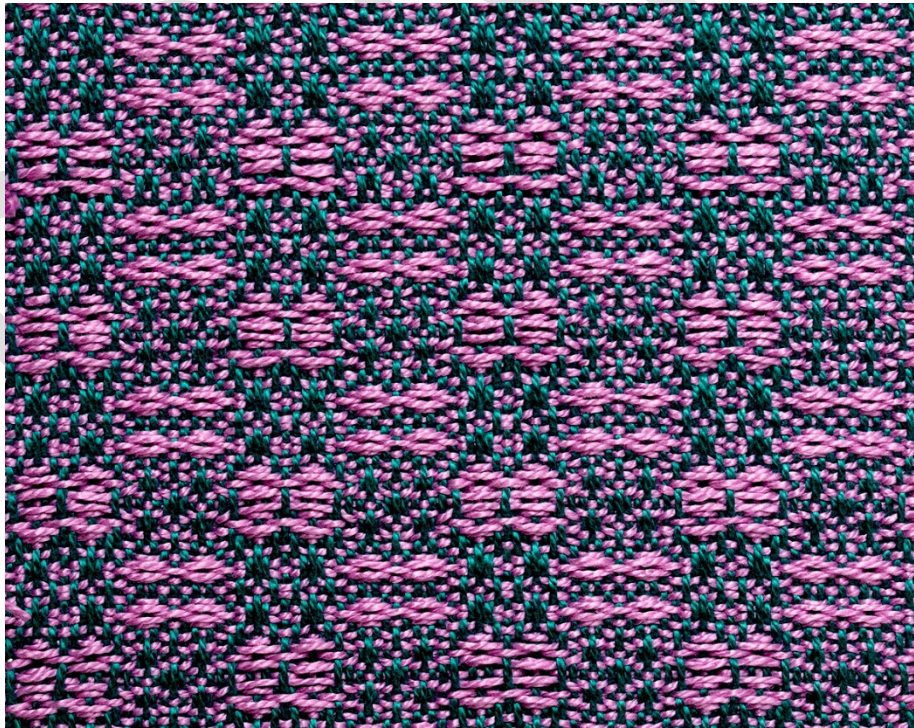
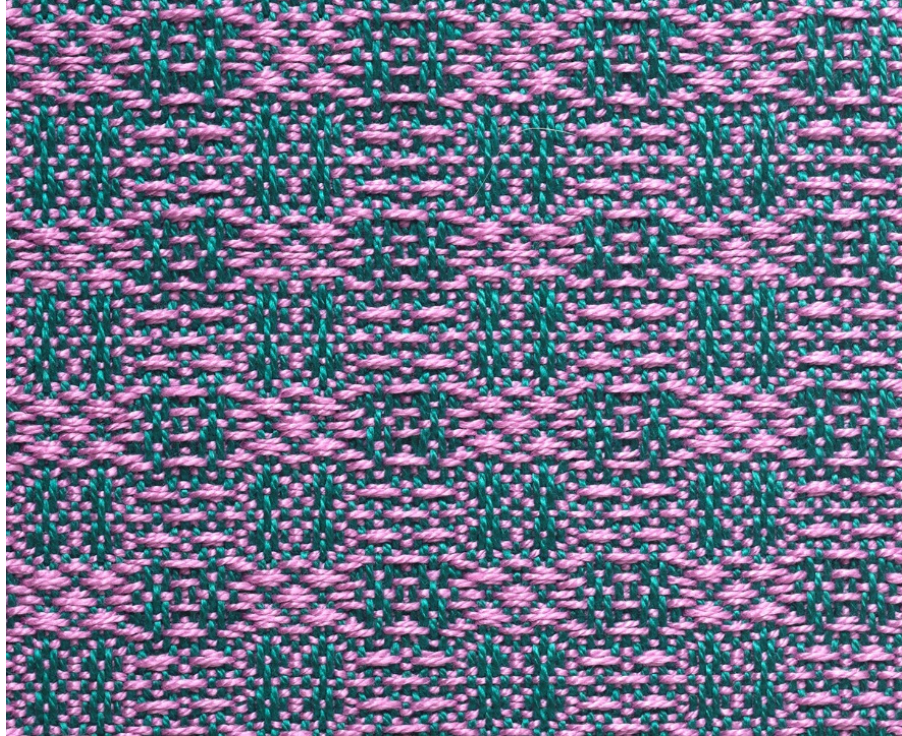


14 Twill Blocks

I changed the drawdown to the one below, *rising shed*.



Following is the fabric sample, front and back.



16 Twill Blocks

It is possible to choose a four-shaft twill and turn it into eight-shaft twill blocks. I have described how to proceed with that process in some of my blogs.

References

Davison, Marguerite Porter. *A Handweaver's Pattern Book*. Marguerite P. Davison, Publisher, Swarthmore, PA, 1994.

Emery, Irene. *The Primary Structure of Fabrics*. Washington, D.C.: The Textile Museum, 1980.

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Strickler, Carol (ed.) *A Weaver's Book of 8-Shaft Patterns from the Friends of Handwoven*. Loveland, CO: Interweave Press, 1991.