

Glossary of technical terms

The CIETA *Vocabulary of Technical Terms, New edition (2021)* by Lisa Monnas, with contributions by Rosemary Crill, Ruth Gilbert, Hero Granger-Taylor, Marie-Hélène Guelton, Lesley Miller and Frances Pritchard, in https://cieta.fr/wp-content/uploads/2021/08/English-Vocabulary_6August2021.pdf has been used where the explanation of terms corresponded to the period under discussion in this thesis.

Brocading (broché) or pattern weft decoration is made of colourful wefts, wrapped around varying numbers of warps, in order to create the design. In this aspect they are different from embroideries, where the decoration is basically done with needlework.¹



fig. 1 brocaded design on Benaki 15346 (IV 31)

Direction of spinning (S or Z) Linen, wool and certain types of silk need to be spun in order to form a continuous yarn, suitable for weaving. Spinning can be done either in an anti-clockwise direction (S-spun) or a clockwise direction (Z-spun) (fig. 2).



fig. 2 <https://www.nordicneedle.net/guides/stitching-materials-guides/threads/s-vs-z-twist/#.YT42Ki1hNE4>

¹ For “brocading” see Roberta Cortopassi, “Les toiles en lin à décor broché dans la collection de tissus égyptiens du Musée du Louvre.” *Journal of Coptic Studies* 4 (2002), p. 1-24.

Dove tailing is used in order to avoid large slits between the differently coloured tapestry areas. The weaver passes the weft over to the next colour area, which results in two differently coloured wefts being wrapped around the same warp yarn (fig. 3). It is widely employed on Egyptian tapestries.

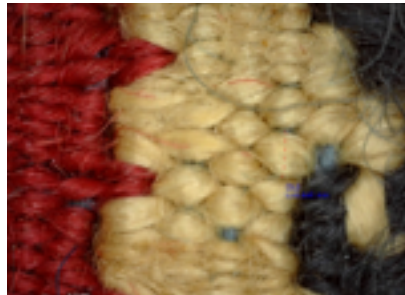


fig. 3 Dove tailing on Benaki 7113 (IV 25)

Flying shuttle or **flying thread** technique consists of a supplementary weft yarn, usually made of linen –although on later examples it is also made of wool– which creates floats over several picks that go in any direction.² It was usually employed to create delicate geometric designs or the details of the face and body of animal and human figures (fig. 4).



Fig. 4 Details of the figure in flying shuttle on Benaki 6940 (I 2)

² See also, Verhecken Lammens, “Flying Thread Brocading”, p. 140-149.

Gimp is another decorative technique used in tapestries. It is achieved by wrapping a yarn around a warp in order to create short, vertical lines (fig. 5).



fig. 5 Gimp on Benaki 15628

Plied yarns are achieved by twisting together two yarns of the same spinning, in the opposite direction from that in which they were spun (figs. 6 and 7). This process creates thicker and stronger yarns and aims to reinforce the warps and, consequently, the textile.



fig. 6 Plied yarns in historicaltextiles.org



fig. 7 Linen S-spun, Z-plied warps of Benaki 12980.

The **Repp rod** is an extra shed rod introduced in the loom in order to change the order of the warp threads to obtain groups of 2, 3, 4 or more warp threads and achieve thus a weft-faced tapestry weave³ (see also **warp grouping**). The use of the rod results in a specific, mechanically repeated pattern of warp crossing and grouping on each textile. Its absence, on the other hand, allows more improvisation and can often lead to groups with different numbers of warps or random warp grouping.

³ De Jonghe et al., *Ancient Tapestries*, p. 9-15.

The **shed** is the opening in the warp that permits the passage of the shuttle and thereby the pick. The shed is created to make it easy to interlace the weft into the warp and thus create woven fabric. Most types of looms have some sort of device which separates some of the warp threads from the others.

Slanted weft is the curved weft used for the outline of curvilinear shapes and it is one of the commonest techniques encountered in almost all the tapestries of the collection (fig. 8).

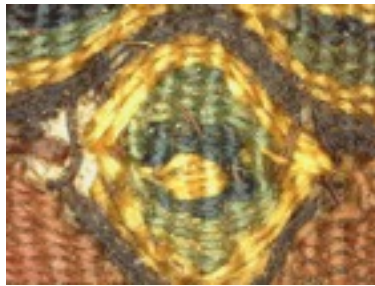


fig. 8 Slanted weft on Benaki 14876

Slit tapestry is the predominant type of tapestry in Egypt. In slit tapestry, two areas of different weft colours are woven separately, with the weft coming and going only in its own colour area, a method which results in a gap, a slit between the two different weft areas (fig. 9). Slit tapestry can also be used for a decorative effect.

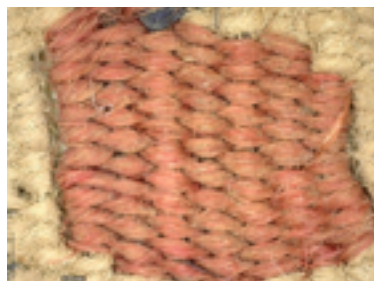


fig. 9 Slit tapestry on Benaki 6985 (IV 15)

Soumak is a technique using an extra, decorative weft, which is wrapped around several warps. It is usually employed to create borders and outlines (fig. 10). Most of the textiles examined in the Benaki that bear soumak decoration have woollen, S-spun warps. Consequently, although De Jonghe argues that this technique was favoured by weavers of tapestries with a linen, S-spun, Z-plied warp,⁴ it seems that it was also popular on textiles with woollen warps, which, however, could have been made on the same looms and in the same workshops as the textiles with plied linen warps, since these warps share similar properties.

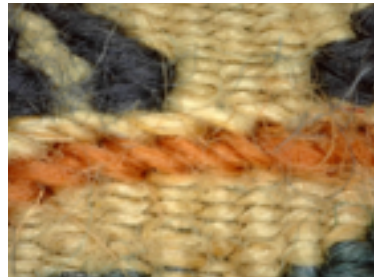


fig. 10 Soumak medallion border on Benaki 7113 (IV 25)

Stitches encountered on the examined pieces with allover embroidery are **split** and **stem stitch** (fig. 11), while the pieces with embroidered inscriptions employ more types, like **couching stitch** (fig. 12), while **flat**, **chain** (fig. 13) and **back stitch** (fig 14) are also used. Couching, together with back stitch, predominate, while flat and chain stitch are also used. The couching stitches seem to be characteristic of the Egyptian embroidered *ṭirāz*, in contrast to the chain stitches found on Iraqi products.



fig. 11 Split (white) and stem (brown) stitch on Benaki 7206 (VIII 3)

⁴ De Jonghe et. al., *Ancient Tapestries*, p. 41.



fig. 12 Couching stitch on Benaki 14803 (VIII 8)



fig. 13 Flat stitch (on the shafts of the letters) and chain stitch (on the tail) on Benaki 14855 (VIII 5)



fig. 14 Back stitch on the base line of the inscription on Benaki 14821 (VIII 7)

Tapestry usually refers to mosaic-like patterning with discontinuous wefts in a weft-faced weave. There are two fundamental principles: hiding the warp with closely packed wefts to secure solid colour and weaving independent wefts back and forth, each in its own pattern area.⁵

Two-coloured shed consists of two different weft colours which are introduced in the same shed, each for the weaving of a single line. This results in a striped design (fig. 15). This technique is reminiscent of a similar decorative effect seen in compound weave textiles and it is possible that it was used in tapestries so as to imitate the effect of the compound weaves.



Fig. 15 Two-coloured shed on the horse of Benaki 15331 (IV 20)

Vertical weft brocading is another version of the flying shuttle technique. The supplementary yarn was, in this case, wrapped in a spiral way, in order to create vertical lines (fig. 16).⁶

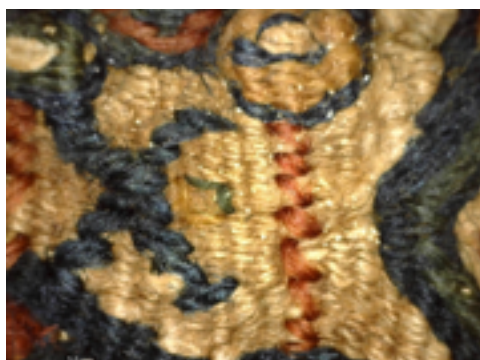


fig. 16 Vertical weft brocading on Benaki 7078 (IV 8)

⁵ Irene Emery, *The Primary Structures of Fabrics*, Thames and Hudson, The Textile Museum Washington D.C. 2009, p. 78.

⁶ See also De Jonghe et al., *Ancient Tapestries*, p. 37-38.

Warp grouping or warp pairing and crossing was a technique used by weavers in order to achieve the transition from a tabby ground –namely an area with a predominant warp or equally proportioned warp and weft– to the tapestry decoration area, namely an area with predominant weft. For this, it was necessary to reduce the number of warps in the tapestry area, an act that could be carried out through the grouping of the warps. The warps can be grouped in different numbers and combinations, namely by two, three or four (fig. 17). Grouping is accomplished by crossing the warp yarns at the point where the tapestry decoration begins, which also reinforces the structure of the weave. This process can be done either by introducing an extra rod to the loom, restricted to the tapestry area, usually known as **repp rod**, or by hand.⁷

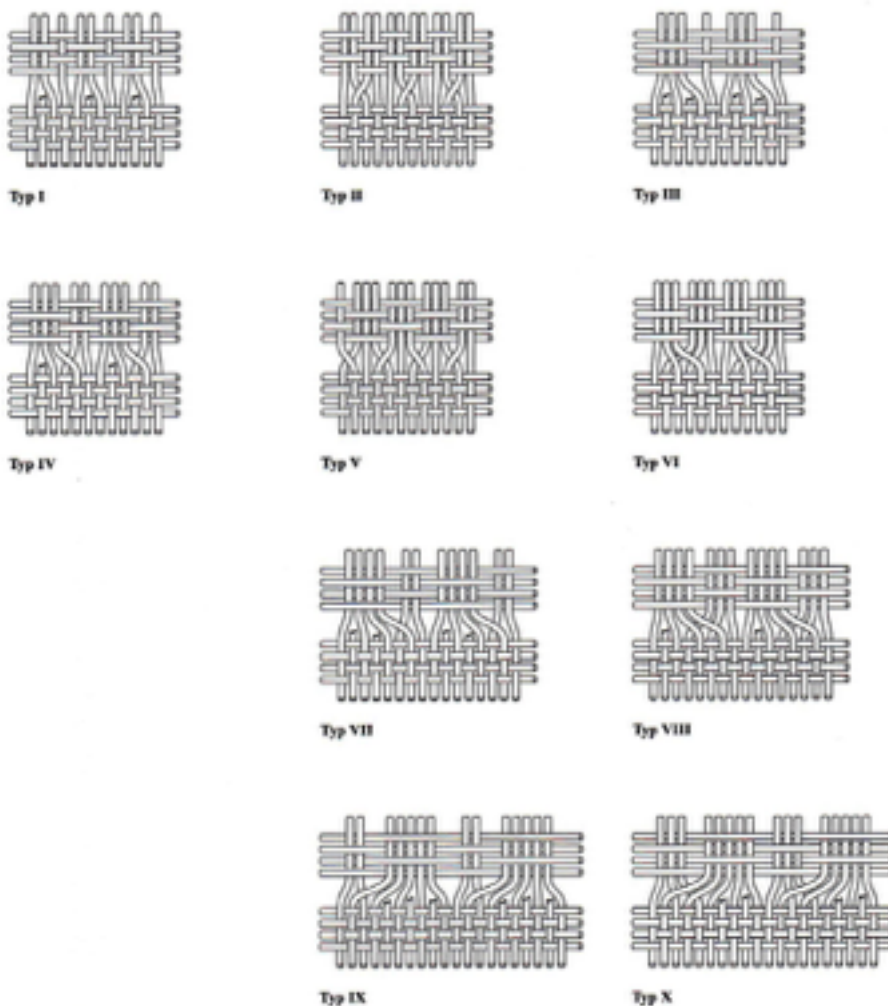


fig. 17 Types of warp grouping found in the AS Collection, by R. Knaller.

⁷ This technique is described at length in De Jonghe and Tavernier, “Le phénomène du croisage des fils de chaîne dans les tapisseries Coptes”, *CIETA Bulletin*, LVII-LVIII, 1983, p. 174-186.

Weave structures

The structures of the textiles under discussion in this thesis fall into two broad categories, basic and compound weaves. The distinction is made according to the way the warps interact with the wefts, in order to produce the fabric.

1. Basic weaves

The basic weaves use one set of warps, which interchange with the wefts in a tabby/plain or twill order. The decoration on these textiles can be added creating tapestry areas of denser wefts, which cover the warps, or by employing extra, decorative wefts and embroidery techniques.

Tabby or plain weave is the simplest form of warp and weft interlacing, where each weft unit passes alternately over and under successive warp units, with each row of wefts reversing the procedure of the one before it (figure 18a)⁸.

Twill weave has less interlacing points (the weft goes over or under more than one warps) and adjacent wefts never float over or under the same group of warps. For each successive passage of the weft, the warp grouping is stepped one warp beyond the previous grouping, thus creating diagonal on both faces of the fabric (figure 18b).⁹

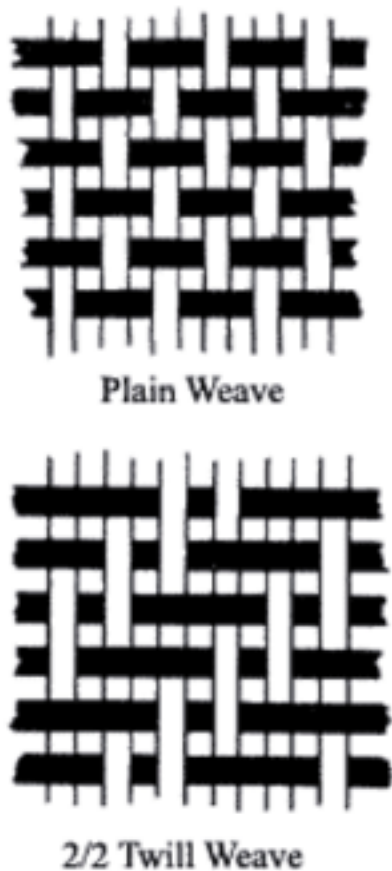


fig. 18 Diagrams of plain and 2/2 twill weave in <https://textilelearner.blogspot.com/2012/07/basic-woven-fabric-structure-plain.html>

⁸ Emery, *The Primary Structures*, p. 76

⁹ Ibid., p. 92.

2. Weft-faced compound weaves

Weave in which the warp or the weft is divided into two or more series one of which appears on the face while the other, or others, appear on the reverse. The decoration on these fabrics is created simultaneously with the fabric structure. They consist of two sets of warps: the inner or main warp, which controls the design, and the binding warp, which forms the fabric structure. Wefts of two or more different colours are employed for the pattern. The wefts cover the main warp and intersect with the binding warp in either a tabby (“taqueté”) or a twill order (“samite”).¹⁰

Taquetés follow the tabby order (over 1/under 1 binding warp). They have more interlacing points than samite weaves, resulting in a firmer textile, appropriate for use as furnishings (fig. 19).¹¹

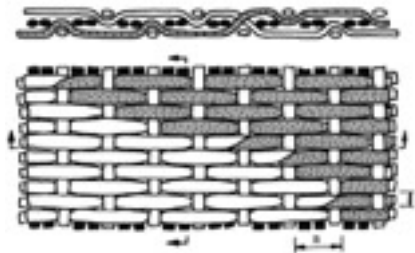


fig. 19 Diagram of the structure of taqueté. Drawing by courtesy of D. De Jonghe in Wild and Dross-Krüpe, “Ars Polymita”, p 303.

Samite weaves, on the other hand, have less interlacing points, since the wefts in this structure go over 2 binding warps, thereby creating a smoother textile surface (fig. 20). This structure is more appropriate for silk textiles, the elements of which have a high density and need a looser interlacing in order to be woven more easily. Furthermore, samite structures enhance the inherent properties of silk, since they increase the float length on the surface of the textile, accentuating the fineness and lustre of the silk yarns.¹²

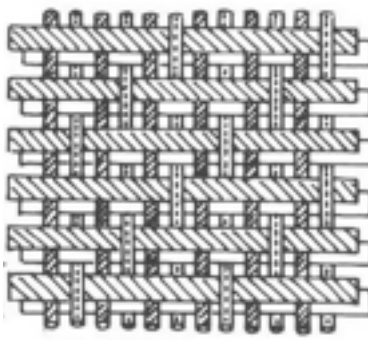


Fig. 20 Diagram of a weft-faced samite or compound twill (Notes techniques, CIETA, Lyon 1979, p. 22)

¹⁰ See El-Homossani, “Early Compound Weave Structures”, p. 160 and Vogelsang-Eastwood, *The Development*, p. 367.

¹¹ El-Homossani, “Early Compound Weave Structures”, p. 164.

¹² Ibid.

3. Lampas weaving

A complex compound weave structure with one foundation weft that produces the base fabric and one or more supplementary wefts, per weft pass, that produce the pattern. While lampas employs two warps, like the taqueté and samite, it differs in that it employs two types of wefts to obtain two different weave structures for the foundation and pattern. Most often, a weft-faced weave is used for the pattern and a warp-faced one for the foundation, with the result that the pattern appears in relief against the foundation.

Weft-twining is worked with two or three decorative wefts, which pass alternately over and under an equal number of warps, changing position in the manner of a twine. The aesthetic result of this technique resembles embroidery and creates a decorative, textured band (fig. 21).¹³



fig. 21 Undulant band woven in weft-twining on Benaki 7123 (IV 10)

¹³ For this technique see De Jonghe et al., *Ancient Tapestries*, p. 43-45.