

Northern Archaeological Textiles

NESAT VII



edited by

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Chapter 7

Brocaded Tablet-Woven Bands: Same Appearance, Different Weaving Technique, Hørning, Hvilehøj and Mammen

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For my MA thesis on the analysis and reconstruction of tablet weavings I examined a few of the poorly preserved fragments of brocaded tablet-woven bands from two Viking Age female graves at Hørning and Hvilehøj. It quickly became obvious that much information was hidden in these fragments, although they were previously believed to be too poorly preserved for analysis. As Anne Hedeager Krag was researching symbols of power in Viking Age garments (Hedeager Krag, chapter 6 above), she needed a thorough investigation of the tablet-woven material from Hørning Church and Hvilehøj, which are both situated near Randers in Jutland, Denmark.¹ In addition, for my MA thesis, I examined the well-preserved tablet-woven bands from Mammen near Viborg, Denmark. This article is concerned with the technical analysis of tenth-century tablet-woven brocaded bands and, hopefully, it gives some more information to those, who ask the question: 'Where were brocaded tablet-woven braids in the Viking Age produced?'

The patterns of most of the bands show a certain uniformity as they are frequently composed of diagonal lines and key patterns. But even if the patterns look the same, the bands were produced in different ways. And *this* is the interesting point. Many scholars have assumed that these fine bands, clearly made from exotic materials, were also produced by workshops in foreign countries. I have analysed eight different brocaded tablet weavings from the tenth century and more are described in the literature (Geijer 1938; Hald 1980; Crowfoot 1956; Nockert 1982; Hansen 1990). Based on the many creative and, more or less successful, technical variations of the weaving techniques I have seen and the many efforts done in some geographic areas to save silk threads and replace them with flax or nettle thread, I am of the opinion that many of these bands could have been homemade using imported materials – probably imitating certain uniform types.

Hørning Church

During the excavations of Hørning Church by Knud Krogh and Olfert Voss in 1960 a rich Viking Age female grave was found (Krogh, Voss 1961). The funeral must have taken place just before the first church was built. The grave was dated to the end of the tenth century. In total there are more than eighty-five fragments of tablet-woven bands – all in a very poor state of preservation (Fig. 7.1). Many adhere to flakes of organic material and consequently only one side can be seen. The sizes of the fragments vary from a few millimetres up to 7cm in length. The silver is heavily corroded and the corrosion in many cases covers the surface so that details cannot be seen.

All the fragments were radiographed by Birte Gottlieb of the National Museum, Denmark. The X-radiographs clearly show the silver threads and often it is possible to get an impression of the patterns by looking at these images. The fragments were registered on a form with information on the thread count of the brocading weft. It was hardly visible by eye or through a microscope, but it could be measured on

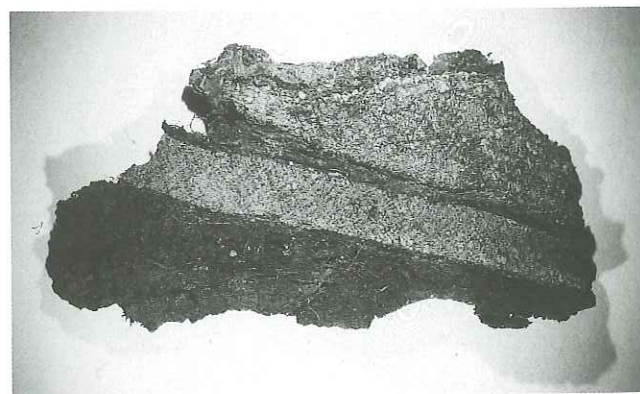


Fig. 7.1. One of 85 fragments of the tablet-woven borders from Hørning. In the centre is band II and above band IV (photo. National Museum, Copenhagen)

the X-radiographs. In addition, information was noted on the number of tablets used to weave the band, the thread count of the warp, whether there was a stave border or no border at all framing the main pattern, plus information on whether the pattern was created by picking up threads from single tablets or by tablets next to each other. In this way it was possible to isolate at least five bands.

Band I

Tablet-woven silver brocaded band, width 8–9mm, woven with 19 tablets. No stave border.

Brocade weft count: 30 per cm. Warp count per cm: 80 threads.

Material: half silk, half a decomposed fibre, probably flax, in the pattern section. One tablet along each side carries 4 silk threads. (About 50% silk used to produce the band.) Silver thread: flat silver strip wrapped around a silk core.

Technique: quarter turns forward and pick up of one thread from single tablets. One edge tablet on each side and 17 tablets in the pattern section.

Band II

Tablet-woven silver brocaded band, width 12–15mm, woven with 33 tablets. No stave border.

Brocade weft count: 30 per cm. Warp count per cm: 80 threads.

Material: half silk, half a decomposed fibre, probably flax, in the pattern section. One tablet along each side carries 4 silk threads. (About 50% silk used to produce the band.) Silver thread: flat silver strip wrapped around a silk core.

Technique: quarter turns forward and pick up of one thread from single tablets. One edge tablet on each side and 17 tablets in the pattern section.

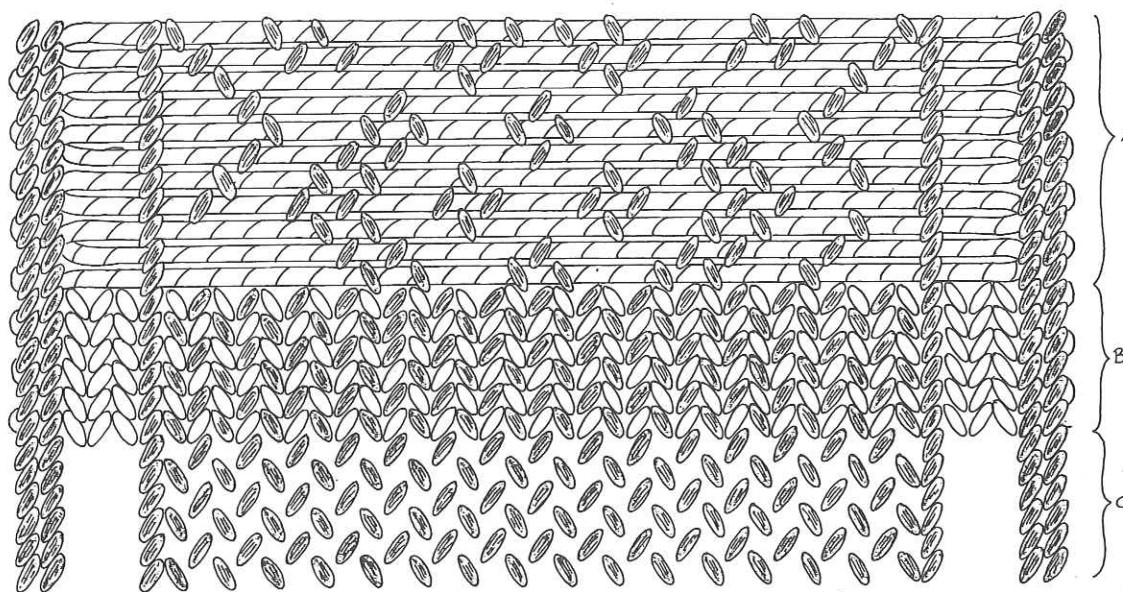
Band III

Tablet-woven silver brocaded band, width 18–20mm, woven with 43 tablets. 6 tablets on each side form a stave border.

Brocade weft count: 30 per cm. Warp count per cm: 80 threads.

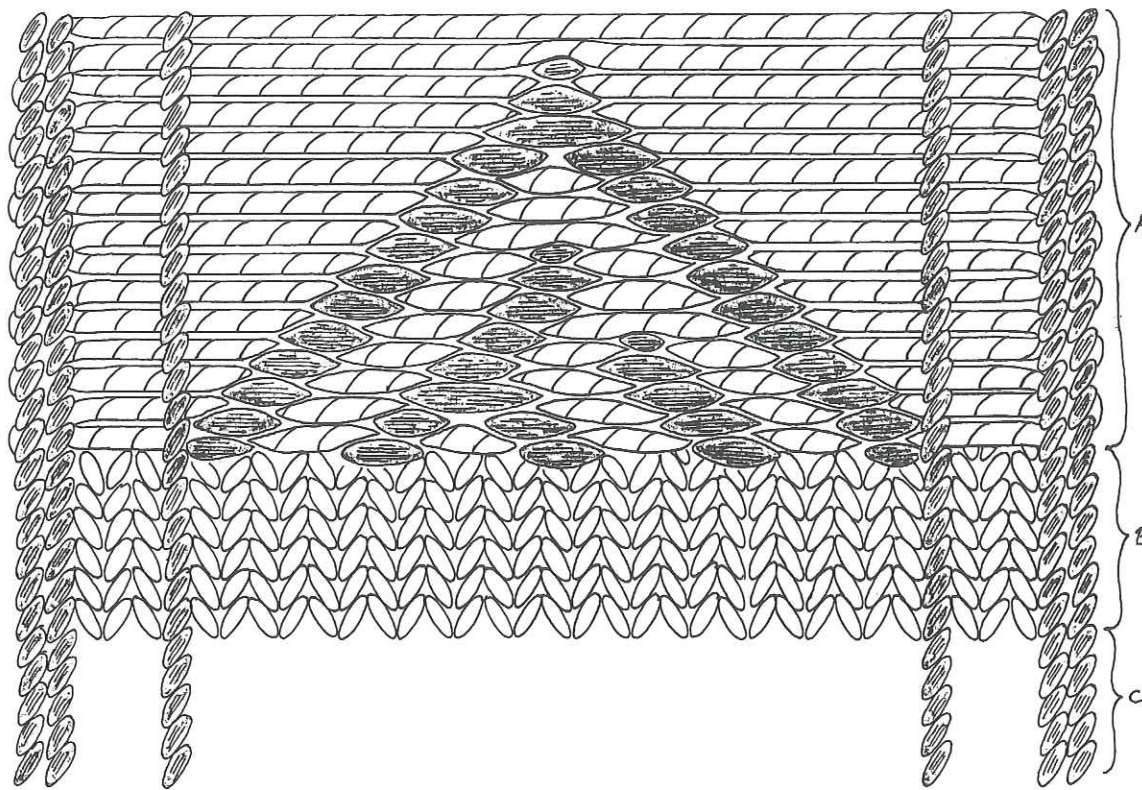
Material: half silk, half a decomposed fibre, probably flax, in the pattern section. The tablets appearing on the surface of the stave border each carried 4 silk threads, the tablets hidden under the stave border all carried flax. (About 50% silk used to produce the band.) Silver thread: flat silver strip wrapped around a silk core.

Technique: quarter turns forward and pick up of one thread from single tablets. One edge tablet on each side and 17 tablets in the pattern section (Fig. 7.2).



- trendtråd silke
- trendtråd nok hør
- ⌋ brokadedtråd sølvulahn

Fig. 7.2. Diagram of Hørning band III. A: brocaded tablet-weave. B: ground weave, half silk and half a decomposed thread. Turning: quarter turn forward, tablets threaded alternating in pairs. C: the reverse of the band as seen today with half of the original threads missing (drawing. L Ræder Knudsen)



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- ⊙ *trendtråd silke*
- *trendtråd nok hør*
- ▨ *brokadedtråd sølvlahn*
- ≡ *soumaktråd silke*

Fig. 7.4. Diagram of the Hvilehøj band. The pattern was formed by a silk thread passing across the warp in a soumak-like technique. Originally the band was made using silk in only 6 of the 37 tablets. The warp threads of these tablets never appear on the surface above the brocade weft. They are replaced, probably with flax, to save on silk and for this 'silk' band only 16% of the warp was silk. (drawing. L Ræder Knudsen)

Originally the band was woven using about 37 tablets, but only 6 of these tablets carried silk threads. The 31 tablets left carried a thread made from a fibre which has decomposed. This fibre probably was flax or nettle. This means that only 16% of the warp threads were silk even though the band looked like a silken band. Much effort was expended to save silk in planning this band. For each weft, impressions in the silver thread show that it has only been tied down by the flax/nettle thread in a few places outside the patterns. The patterns were made using another silk thread passed across the warp while weaving. It is possible to see how the silk thread was used on the reverse side of the band. The Hvilehøj band, therefore, differs substantially from other Viking Age brocaded tablet-woven bands, for instance the Mammen bands, where tie-down points of the silver thread

form the patterns. Using a silk thread across the warp to form the patterns has two advantages. It saves expensive silk thread and it is possible to change the colours of the patterns along the band. The disadvantage is that it is a very time-consuming weaving method.

The Mammen wrist bands

The well-known bracelets found in a Viking Age burial near Mammen in Denmark also have tablet woven borders (Hald 1950; Østergård 1991; Hansen 1991). Fragments of the same band presumably belonging to a tunic were found. Contrary to the wrist bands it was possible to see the reverse side of these fragments.

Tablet-woven silver and gold brocaded band, width

Band IV

This band is not preserved to its full width, but the widest fragment is 35mm and, if the band was symmetrical, the minimum width would have been 53mm.

Brocade weft count: 15 per cm. Warp count per cm: 80 threads.

Material: apparently silk in all tablets. Silver thread: flat silver strip wrapped around a silk core. (100% silk used to produce the band.)

Technique: quarter turns forward and pick up of multiple tablets. Stave border or side border with pattern.

The thread count of the warp is nearly the same as in bands I, II and III, about 20 tablets per cm, whereas the thread count of the brocading weft is substantially different, namely about 15 threads per cm. This is nearly half as closely woven as the first three bands and results from the fact that the brocading thread is much thicker. It is very difficult to observe details of the fragments, but it looks as though all the tablets were threaded with four silk threads. The patterns on band IV have been produced by picking up threads from several tablets next to each other. As a result, the pattern appears as a silken surface on a silvery background.

Band V

In this find there were very small remains of a tablet-woven pure silk band which was probably pattern woven (thread sequences comparable to 3/1 double faced broken twill were observed). It has a warp count of about 12 tablets per cm and a weft count of about 17 wefts per cm.

The thread count of the brocade weft in the bands I, II and III is the same, namely about 30 brocade threads per cm. Also the same technique has been used replacing silk threads with probably flax or nettle threads in those tablet holes where the thread never appears on the surface. This thread is now disintegrated and has totally disappeared leaving empty spaces where the flax or nettle thread used to be (Fig. 7.3). Besides, the patterns of the three bands are made in a similar way where warp threads alternately from even and uneven tablet numbers tie down the brocade weft.

Hvilehøj

In 1880 Conrad Engelhardt excavated a Viking Age female grave in the outskirts of Randers, Jutland. The Hvilehøj grave contained many organic pieces including fragments of a tablet-woven band with silver and gold brocade. The grave is dated to the second half of the tenth century.

The tablet-woven band from Hvilehøj today consists of fourteen fragments. In some cases they are preserved on top of flakes of fur, textile and other organic materials. In other cases the band is preserved so that it can be examined from both sides. The band has a brocade weft of silver and patterns in silk and gold. In most cases the silver is heavily corroded

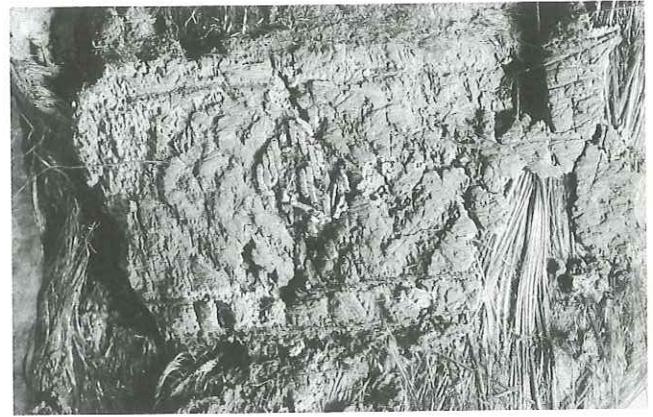


Fig. 7.3. One of 14 fragments of the Hvilehøj band. Tablet-woven silver brocaded band with a gold brocaded pattern in the centre (photo. National Museum, Copenhagen)

and, therefore, it is very difficult to see any details.

The fragments were radiographed by Birthe Gottlieb of the National Museum, Denmark, and the X-radiographs were examined and compared with the results of an examination under a microscope. The X-radiographs proved very useful because the original contours of the silver and gold threads were clearly visible. In addition, you can see the points where the metal threads were tied down, and accordingly the pattern is partly revealed.

The Hvilehøj band

Tablet-woven band 16–17mm wide woven using 37(?) tablets. The pattern covered 25 tablets, but all of the warp threads in the pattern section have disappeared. Probably 6 tablets on each side formed the stave border. Two tablets along the edge on each side carried silk, then 3 tablets carried warp threads of a material that has decomposed. After this there is one tablet with silken warp threads forming an edge next to the pattern (Fig. 7.4). The patterns of this band are not created by the warp threads tying down brocade wefts, as in most other brocaded tablet weavings. It is made using an extra silk thread across the warp in some kind of a soumak technique. The soumak pattern thread reveals clearly the number of tablets in the pattern field even though the warp has gone.

Brocade weft count: 28 per cm. Warp count per cm: 90 threads.

Material: only 6 tablets out of 37 tablets were threaded using silk; the rest had a fibre which has decomposed. (Only about 16% silk used to produce the band.)

Silver and gold thread: flat silver or gold strip wrapped around a silk core.

Technique: quarter turns forward and pick up of one thread from single tablets. One edge tablet on each side and 17 tablets in the pattern section.

14mm, woven using 37(?) tablets (Fig 7.5). Stave border formed by two 4-hole tablets with silk, about 4 tablets threaded with a material that has decomposed and one 4-hole tablet forming an edge to the pattern. The pattern has 23 tablets.

Brocade weft count: 30 per cm. Warp count per cm: 102 threads.

Material: half silk, half a decomposed fibre, probably flax, in the pattern section. Two tablets along the edge on each side carried silk, then about 4 tablets carried warp threads of a material that has now disappeared. After this there is one tablet with silken warp threads forming an edge next to the pattern (About 50% silk used to produce the band).

Silver and gold thread: flat silver or gold strip wrapped around a silk core.

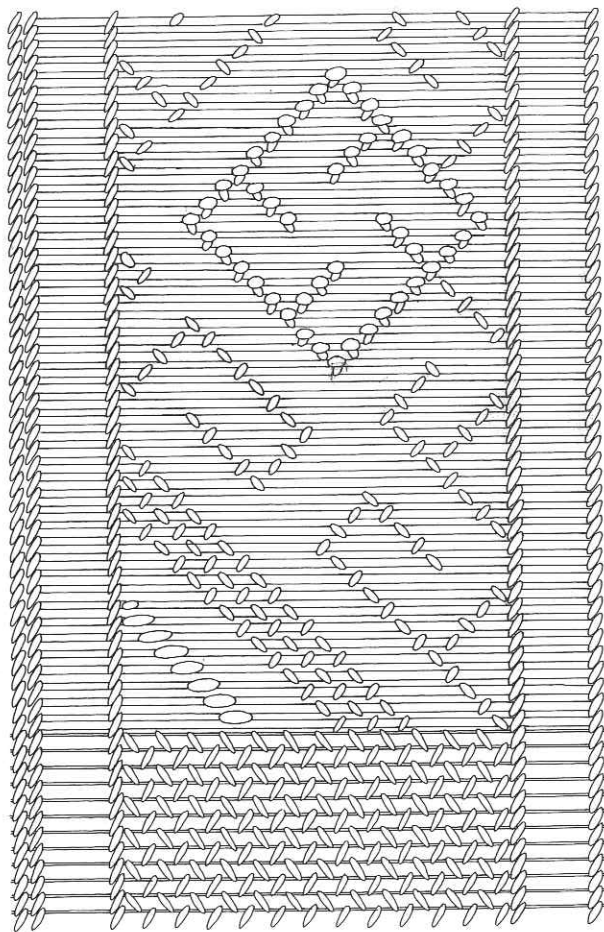


Fig. 7.5. Diagram of the silver and gold brocaded tablet-woven band from the wrist bands found in the Mammen grave. A swastika is brocaded in gold with silver around it. The border between the silver and gold is decorated with a silk soumak thread. On the reverse of a similar band from the tunic, the ground weave of half silk and half a fibre now disintegrated can be seen (drawing, L Ræder Knudsen)

Technique: quarter turns forward and pick up of one thread from single tablets.

The band was brocaded with silver and gold wefts and often the borders between the gold and silver surfaces have been accentuated by silk thread passed around the weft in a soumak-like technique while weaving. On the reverse side of the fragments of the tunic you can see empty spaces left by the now missing flax or nettle threads. Under the stave borders at the edges the warp threads never appear on the surface. Therefore they are completely replaced with flax(?) and all you can see on the back side of the band now is a ladder-like row of threads. It is not usual to see that a textile is only half preserved like this, because vegetable fibres are very rarely preserved and almost never under the same conditions as are silk and wool due to their chemical composition.

From Mammen there is also another tablet-woven brocaded band mounted on the 'pennants' (Østergaard 1991), but as it is not possible to see the reverse side of the band. It is not analysed here.

The origin of tenth-century tablet-woven bands

Six Danish tablet-woven brocaded bands from the tenth century are presented here. These bands have a lot in common, but also many differences. There is a band with warp threads of pure silk, bands made of half silk and half flax or nettle and a band made of only 16% silk. But all of them originally were somewhat similar in appearance.

In addition to these finds, I have recorded tablet-woven brocaded bands found in northern Europe from the tenth century described in the literature. They have been registered in a table including many technical details (table 7.1). The table reveals that a lot of different methods have been used to produce bands of similar appearance. Some scholars have assumed that these fine bands made of foreign materials were imported (Nockert 1982, 207; Geijer 1994, 86).² Others have argued that they could just as well be homemade using imported materials (Geijer 1938, 90–95; Crowfoot 1956; Hansen 1990, 62–63). Margrethe Hald argued that more information was needed before the origin of the bands could be established (Hald 1980, 233–237). If these bands were all made in professional workshops and imported from the south, one would expect them to be quite alike in their technical details or, perhaps, be equally different within specific geographic areas.

The table omits a lot of examples from Birka as the corpus is enormous, but the trend that can be read from the table is clear. The Birka bands have two details in common: most of them are brocaded using double drawn metal wire, a detail not seen in any of the other finds, and mostly threads from two holes in the tablet tie down the brocading weft. The usual way is that only one thread from a tablet ties down the brocading weft. This little detail means a lot while weaving as a different method has to be used to pick up the

threads. Also the bands from St Cuthbert's tomb all have threads from two holes in the tablet tying down the brocade weft.

Otherwise the Birka bands have many differences. Some bands were woven using quarter turns forward; some were pattern woven; some were made of pure silk; some had half of the silk replaced with a vegetable fibre; some have a stave border; some have no border; some have a single pick up of warp threads; some have multiple pick up to form silken surfaces; some were single coloured and some multi-coloured.

Most of the bands from St Cuthbert's tomb were made from the best materials, namely pure silk and gold thread (the exceptions are bands nos 9 and 10, where silver gilt threads were used). Also the designs are remarkable with lions and flowers, which are quite different from most other designs and not really suitable for tablet weaving. They require a technique where it is possible to obtain rounded shapes. In tablet weaving you are able to form diagonal lines, and lines across and parallel to the band, but the technique is not suitable to produce rounded shapes. A clear example is the girdle (no 1). A very complicated and time consuming method is used (3/1 double faced broken twill), where all the tablets have to be turned differently. On top of this two-coloured band there is brocading, which makes it nearly impossible to see the two-colour pattern. Crowfoot writes that this is due to the decay of the colours, but also on a replica it is difficult to see the differences in colour (Crowfoot 1956, 437; Hansen 1990, 70). The St Cuthbert bands appear to have been made by people not that familiar with tablet-weaving, although the bands are very accurate and neatly done using the best material.

The Scandinavian bands, including a band from Hedeby in North Schleswig, were made partly from silk, partly from a now missing thread, with the exception of band IV from Hørning. Surely to economise on the expensive and rare silk thread much effort was expended to replace silk with presumably flax, where it was possible. The bands are often very accurate and neatly done using only as little of the precious silk as needed. The band from Køstrup seems to be an attempt to make an imitation of the silk and silver bands in wool. The weaver was not familiar with the normal weaving method. For instance an even number of tablets in the pattern field was used and consequently difficulties in obtaining similar motifs to those seen elsewhere arose. An even tablet number in the pattern field will not create pointed shapes in the middle of the band, which many of the patterns demand.

The study of the technical details of the brocaded tablet-woven bands from the tenth century reveals a probable link between the technical traditions and geographical areas.

Acknowledgement

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Notes

1. Analyses of these band fragments were made possible by a grant from Queen Margrethe II's Archaeological Foundation. The complete work will be published elsewhere.
2. Originally Geijer formed the opinion that the Birka bands were homemade, but she later came to the conclusion that they were imported from within the Byzantine cultural sphere.

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Selection of brocade weft threads	1										2	2	2	5	
	6	6	6	6	6	6	6	6	6	6					
Silver brocade weft of silver strip wrapped around a silk core	X	X	X												
Silver brocade weft of silver strip wrapped around a silk core thread, single motifs in gold brocade threads made similarly			X												
Silver brocade weft of silver strip wrapped around a silk core thread, single motifs in a now disappeared material, presumably flax		X													
Alternately silver- and gold brocade wefts independently of the pattern				X											X
Alternately silver- and gold brocade wefts independently of the pattern, the same borders always silver															
Brocade weft made of double drawn silver wire														X	
Silver gilt brocade weft										X					
Gold brocade weft of gold strip wrapped around a silk core thread					X	X	X	X	X	X	X				
Weft threads made of multi-coloured wool								X							
Extra silk thread used as soumak to separate fields of silver and gold								X							
Extra silk thread used as soumak in fields of silver brocade		X													
Extra silk thread used as soumak to form the pattern. No tie down points in the pattern.									X						
Literature concerning the band	6	6	6	6	6	6	6	3, 4, 8	1			4	2	2	5

* Bands I have analysed

- 1 Crowfoot (1956)
- 2 Geijer (1938)
- 3 Hald (1950, engl.edi.1980)
- 4 Hansen (1990, 1991)
- 5 Nockert (1982)
- 6 Krogh, Voss (1961)
- 7 Lønborg, Rasmussen (1993)
- 8 Østergård (1991)

Table 7.1. Table of technical information on tenth-century tablet-woven brocaded bands found in northern Europe