# The Cordage from Berenike (1994-2000 Seasons): The Statistics*

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**Abstract: The Cordage from Berenike (1994-2000 Seasons): The Statistics**
The cordage from Berenike has been studied in detail during the 1994-2001 seasons, the results of which have been published in several chapters in the excavation's preliminary reports and scholarly articles in journals, mostly in *Antiguo Oriente*. The published results relied heavily on a large database, which not only included notes on cordage's aspects (mainly material, appearance, features, application) but also a large body of statistical information. The present paper presents these statistical data by means of tables, graphs and figures, accompanied by a short description and explanation. Because most conclusions have already been published in the afore-mentioned publications, the nature of the present paper is strongly descriptive rather than interpretative.

**Keywords:** material – appearance – composition – cord indices – rope – string

**Resumen: El cordaje de Berenice (campañas 1994-2000): las estadísticas**
El cordaje de Berenice ha sido estudiado en detalle durante las campañas de 1994-2000, y los resultados fueron publicados en varios capítulos de los informes preliminares de la excavación y en artículos académicos en revistas especializadas, la mayor parte en *Antiguo Oriente*. Los resultados publicados descansan en una gran base de datos, que no sólo incluye notas sobre los aspectos del cordaje (principalmente el material, apariencia, rasgos, aplicación) sino también en un gran cuerpo de información estadística. Este trabajo presenta esos datos estadísticos a través de tablas, gráficos y figuras, acompañados por una breve descripción y explicación. Como muchas de las conclusiones ya han sido publicadas en los mencionados artículos, la naturaleza de este trabajo es más descriptiva que interpretativa.

**Palabras Clave:** material – apariencia – composición – índices de cuerda – nudo – fibra

1. Introduction

This paper presents the statistics of the detailed analysis of the cordage found in Berenike, the Ptolemaic and Roman harbour site at the Egyptian Red Sea coast, on which previous published accounts on the cordage are (partially) based.[1] It was decided to publish all data, including the raw data, to allow the scientific community to evaluate the results. In order to simplify this task, previously published tables are included as well.[2] Note, however, that in the text, no extensive reference to all tables is made: the results are based on the overall tables.

For an introduction to the site, a description of the contexts as well as the results of the excavations, organised between 1994 and 2001 by the University of Leiden, The Netherlands (co-director W.Z. Wendrich) and the Universtiy of Delaware (co-director S.E. Sidebotham), the reader is referred to the preliminary reports.[3] The terminology, which is used, is explained and discussed elsewhere, as well as other aspects of the Berenike cordage.[4]

2. Material (table 1-21)

Half of the site's cordage corpus is made of grass[5], whereas the other half is made of palm (25%), soft fibre (16%) and (goat) hair[6] (7%); three percent is registered as 'other material', see below. Although percentages fluctuated, most trench corpora displayed a similar pattern (grass occurred most often, followed by palm, soft fibre and (goat) hair respectively).

The differences between the quantity of grass and palm cordage from the two different periods were only slight but they made up a slightly larger part of the corpus from the youngest contexts, *viz.* 5th-6th century AD (cad). Although it is tempting to suggest that an increased intensity of contacts between the inhabitants of Berenike and the places from which these materials had to be imported is reason for these differences, the differences are too small to draw definite conclusions. It remains uncertain whether material was imported as raw material, half-product, end product or all three of them. However, it is not unreasonable to assume that packing materials, such as bundles unprocessed grass (known to have been used for stowage in shipping cargo) and palm (of

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[1] Veldmeijer 2003, 2004, 2005a, b, c, 2006a; Veldmeijer and Van Roode 2004; Wendrich 1995.

[2] Veldmeijer 1998, 1999; Wendrich 1995; Wendrich and Veldmeijer 1996.

[3] Sidebotham and Wendrich 1995, 1996, 1998, 1999, 2000.

[4] See note 1 and 2.

[5] With 'grasses', halfa grasses are meant.

[6] The status of the hair is not entirely clear: goat or hairy sheep, see Wild and Wild 1998: 222.

which the fibre might have been used for the same purpose) were made into cordage and basketry after arriving at Berenike. If so, the ships and/or cargo are likely to have come from areas with (partly) the same vegetation. Note that stowage might have been re-used in other transportation. The choice of material was not only dictated by its strength and application. Availability, price and preparation must have influenced the choice of material too. The fact that grasses were freely obtainable might count for at least part of the far larger quantity of grass cordage.

Although a larger quantity of (goat) hair was excavated from early Roman contexts, the difference between the quantities was too small to draw conclusions on a more desert oriented life style[7] or not. However, the lack of substantial quantities of leather and rawhide cordage seems to suggest that the people were not specifically desert oriented. In Qasr Ibrim, for example, much leather and rawhide cordage and thongs have been recovered. Qasr Ibrim, although now only an island in Lake Nasr due to the construction of the dams, actually is a hill top fort, at about 70 m height, and although close to the Nile, it was situated in the middle of an arid, desolated area. No cordage made of donkey hair was identified, which is known from sites as Masada[8]: cordage made of camel hair was not attested either.[9] It is difficult to give a satisfying explanation: donkeys were known in Egypt for a long time (camels, or better, dromedaries, came to Egypt much later). It is possible that the ancient people did use it after all but due to lack of research, especially from pre-Roman this is unknown to us.

The quantity of soft fibre cordage (predominantly flax, but occasionally cotton and wool) is third large in almost all trenches. Remarkable is the huge difference between the two different periods (see below). Soft fibres are regarded as relatively expensive, among others due to the elaborate preparation processes of the raw material before being able to use it, which might count as one reason for the lower quantity; post-depositional processes as another.[10] Flax cordage was mainly used in textiles and fishing nets, in the former among others because of the softness; in the latter because the material is better resistant against water. Other applications of small flax cordage were those applications in which strong but thin cordage was needed such as stringing beads. The larger quantity of soft fibre cordage during the 1st cad is due to the large number of fishing net fragments as well as the larger number of textiles, the soft fibre cordage being, partially, the result of their deterioration.

[7] Wendrich 1995: 84; Wendrich and Veldmeijer 1996: 295.
[8] Bernick 1994: 307.
[9] But see Wild and Wild 1998: 222.
[10] Wendrich and Veldmeijer 1996: 295.

A small quantity of cordage made of other materials was registered, the larger part being registered as 'undeterminable due to deterioration'. Among the identified 'other materials', are reeds: there are indications that these grasses were used for the more 'heavy duty purposes.' Important for the contacts with areas overseas, like India, is the identification of cordage made of coconut, much used in India, Sri Lanka and the whole of East Asia, even nowadays. The coconut cordage must have been used for tying goods for transport because the import of this material for making cordage in Berenike is unlikely: perfectly suitable material could be obtained in large quantities from within the closer vicinity of Berenike. Besides, the coconut shell, from which cordage was made, was thrown away which is an indication that the inhabitants of Berenike were not used to the coconut fruit as source for cordage.

3. Appearance

Because the registration from previous seasons proved that large quantities of soft fibres occurred as yarns, which were not registered with the 'new' registration,[11] the supposition that the difference in the occurrence of soft fibre was even larger is justifiable.

*3.1. Composition (table 22-43)*

**3.1.1. Plied cordage (table 22-28)**

Plied cordage was by far the most common type of cordage in every trench, although the percentage showed some fluctuations. Only in trench BE96/97-13, the percentage was less than 70%. Most of the grass and palm cordage were plies, as was the case with the (goat) hair cordage.

The $zS_2$ composition was most frequently encountered, although this composition was less often registered with palm and even far less with soft fibre relative to the grass plies. Almost no $zS_2$ (goat) hair cordage occurred; while $sZ_2$ was encountered sporadically with grass and soft fibre and slightly more often with palm, it was almost the only composition used to make (goat) hair cordage. So far, a reason for this is difficult to present. The suggestion by Renfrew and Bahn[12] that composition reflects right and left-handed people (fibres that spiral to the right, thus 'S'-wise, supposedly were made by right

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[11] The counting of yarns was abandoned, as yarns are, relative to other types of cordage, more prone to breaking into fragments; therefore they were registered as 'low', 'medium' and 'high' quantities from the 1999-season onwards.

[12] Renfrew and Bahn 1991: 383.

handed people) is highly improbable. This would mean that all S-plied cordage was made by right-handed people and all Z-plied, thus (goat) hair cordage, by left-handed people. Although the discussion is limited to plied cordage, it is not unimportant to bring cables into this discussion. With a $zS_2[Z_3]$ cable, the $zS_2$ ply is made, according the theory, by a right-handed person and then? Did they bring it to a left-handed person for cabling? This is not the way cabled cordage was made as ethnological research[13] suggests. Possibly, it is a reflection of male and female workers. Among the Ababda Bedouin in modern Egypt, women make the (goat) hair cordage in the sZ twist. Whether the composition of the ancient (goat) hair cordage was the result of female work or not is impossible to obtain from the archaeological record. If this was the case, the question remains if women also made cordage from other material in the same composition, among which thick ropes (ropes are often made in the same orientation as (goat) hair). Wendrich (pers.com.) thinks that properties of the material was and is the reason for the dominant sZ twist rather than differences due to difference in gender. Whether this can also explain the fact that the sZ twist occurred more often with palm cordage is as interesting as unanswerable for the time being. It is clear, however, that a large part of the ropes were made in this composition.[14]

The largest variation in composition is seen with soft fibre. Much soft fibre cordage is the deterioration product of textiles. Moreover, textiles include also items as tassels, flounces and furbelows, drapings and carpets. A few registered tassels[15] strengthen the thought that soft fibre cordage with an 'other composition' (*i.e.* $zS_n$, $sZ_n$; $_n > 3$), but especially the ones in which '$_n$' reached high values (seven or higher), originates from these kinds of objects.

As stated, halfa grass was relatively easy to obtain, but perhaps more important might be the fact that it was the cheapest material available (allowing us to assume the observations made by Wendrich[16] was valid in ancient times

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[13] Wendrich 1999: 300.

[14] More on this in Veldmeijer and Zazzaro, submitted. It might be interesting to see whether the importance of this composition was with all palm cordage, or whether this was due to the use of the $sZ_2$ composition with one of the specific palm tree parts (fibre or leaf). Also, it might be interesting to see if one of the palm species, *H. thebaica* or *P. dactylifera,* shows a tendency to a larger quantity $sZ_2$ composed cordage or not. This, in turn, might shed light on the $sZ_2$ composed (goat) hair cordage: if one of the palm species or palm parts show a tendency to the sZ twist, this could be a strong indication that the properties of the material forced to make the cordage in that way, as with (goat) hair. However, although no numbers are available about palm fibre/palm leaf/palm species, it seems doubtful that one of the features exhibited a similar emphasis on $sZ_2$ as with (goat) hair.

[15] For example BE97/98-19.009 0970-h-3008, BE97/98.19.006 0575-h-3009 and BE97/98.19.006 0575-h-3010.

[16] Wendrich 1999: 282-283.

too). Therefore, it can hardly come as a surprise that grass cordage was by far the largest group of material.[17]

Consequently it can be concluded that for the ordinary-purpose-cordage, *i.e.* the cordage used for all kind of purposes, like fastening animals, fastening things which became loose, package etc., especially halfa grass was used. For these purposes, people seems to have made the grass cordage themselves, most of the time on the spot when the string or rope was needed.[18] One might argue that $zS_2$ was the composition resulting in these actions. Thus, in other words, when people needed cordage for 'all-time-purposes' they quickly made it from grass, resulting in cordage with a $zS_2$ composition. Thus, the $zS_2$ composition does not reflect centralisation or specific producer and it is therefore not possible to use the most common compositions to suggest specific producers, as suggested by Wendrich.[19] The large number of palm cordage with a $zS_2$ composition, although smaller than grass, supports these thoughts: the material was less easily available and possibly more expensive than grass,[20] but still relatively easily available to people. With the expensive and less easily to prepare soft fibres, the $zS_2$ composition is less often registered, thus suggesting more specific use.

The $zS_3$ and $sZ_3$ composition are indicators for the necessity of stronger cordage. The relatively small quantity was the result of the lower necessity for this stronger cordage relative to cordage of 'normal strength'.[21]

The corpora of the two different periods (1st cad and the 5th-6th cad) are remarkably similar. However the distribution of compositions among grass and palm is more equal among the plied cordage of the 1st cad than among the 5th-6th cad material. In the oldest period, more cordage was used with three or more yarns: apparently there was a larger need for stronger cordage. The

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[17] Although there are other reasons as well like for instance the large quantities of matting used for among others roofing.

[18] As is still done in present day Egypt by farmers and fishermen.

[19] Wendrich 1989: 175.

[20] The degree of preparation of the raw material and the production of the cordage, as well as the quantity of that material necessary to produce the needed cordage and the occurrence within Berenike's vicinity, besides possibly payment for raw material, make up the price of cordage.

[21] As discussed elsewhere (Veldmeijer 2005b), the relative strength is meant. More on the application of linear cordage in Veldmeijer and Zazzaro, submitted.

higher percentage cabled cordage and the higher percentage ropes supports this conclusion.

### 3.1.2. Cable cordage (table 29-43)

Cabling was done to create strong(er) cordage, although for some materials ([goat] hair and to a lesser extend soft fibre) plied cordage seems to have been cabled in the first place to lock the ply rather than to create 'heavy-duty-cordage'. The predominance of alternating twists suggests a good knowledge of obtaining relatively strong cordage, because cordage composed in an alternating twist is stronger relative to cordage made in non-alternating twist.

The large variety of cabled soft fibre can be explained by the fact that creating stronger soft fibre cordage was done by making cabled cordage instead of plied cordage with thicker yarns, the latter of which as usually done with other materials (note that large part of cabled palm fibre cordage were basket handles). Furthermore, textiles often involve cabled cordage, especially items as hangings and tassels. The percentage of cabled cordage of the trench corpus was surprisingly uniform, even though differences occurred. All but one of the corpora showed percentages cabled cordage between 10 and 20% of the total of that trench.

### 3.2. String/rope (table 44-46)

Mainly grass and palm ropes were regularly encountered. The early contexts contained a larger percentage ropes relative to the late contexts. The function of the few encountered soft fibre ropes remains obscure although at least one was closely associated with shipping related artefacts like sails. It is unlikely that hair was much used to make thick ropes. Beside the huge quantity of hair one would need, hair cordage has a low degree of internal coherency due to the relative shortness of the hairs. Creating stronger cordage from hair was therefore done by various levels of cabling, sometimes combined with other materials. More often, however, braids were used, as is still done nowadays by the Ababda Bedouin, for example as camel ropes. Once deposited, the short hairs become very brittle in arid conditions and loose coherency easily, especially when the cabling was loose anyway. Plied hair cordage hardly has any internal coherency and falls apart easily. Even hair cordage with large diameters must have suffered from the lack of coherency more than any other material.

## 3.3. Cord Indices (table 47-58)

A larger percentage palm cordage exhibited higher CIP values relative to other materials. If assumed that the rate of loosening was the same for grass and palm when made in comparable twist and composition, the higher CIP indicates that palm could be plied more tightly than other materials and was therefore stronger. The fact that compositions with three yarns ($zS_3/sZ_3$) as well as cabled cordage were more often encountered with palm, supports this thought. It also shows that the people were perfectly aware of these qualities: palm was used when people needed stronger cordage.

Cordage with three yarns often exhibited higher CIP values. The reason for this is that the third yarn was often inserted in a second production phase through which the cordage was tightened a second time (although thick ropes, like the ones found in Mersa/Wadi Gawasis,[22] were made in one production phase). The higher CIP values with cabled cordage were due to a second production phase as well: the cabling locks the ply and tightens it.

## 4. DISCUSSION

Identification of the material on taxon or species proved not possible for all pieces, especially when the material was grass or palm. The identification of the material was often problematic because of the bad preservation, which affected the diagnostic epidermis.[23] This lack of identified material contrasted with especially plaited basketry. A plait of strips of palm leaf, however, is not spun or twisted in contrast to cordage. The production of cordage seriously weakens the resistance against deterioration and the epidermis is damaged already before the cordage being used and, eventually, discarded. Although basketry often shows patterns of wear, in many cases enough of the epidermis is left to identify the material microscopically or even macroscopically.

The identification of cordage made of (goat) hair met problems in the uncertain position of hairy sheep and goats as mentioned previously. The identification of the three soft fibres had to be performed by microscope and even then some could not be identified, again due to deterioration.

As observed, apparently there was a larger need for stronger cordage in the 1st cad. It is tempting to conclude that the stronger cordage originated from shipping related activities especially for the ropes with large diameters. The

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[22] Veldmeijer and Zazzaro, submitted.

[23] Note that it is still possible to identify it, but this requires laboratory equipment such as scanning electron microscopes. This has not been done.

high amount of other shipping and sea related artefacts from these contexts, such as fishing nets and hooks as well as sails, supports these thoughts. Although heavy work seems obvious, it is not possible to identify the exact purpose of thicker and stronger cordage in more detail. Besides, due to the multiple-functional character of cordage, this is most of the time impossible anyway, unless there is a strong association and/or context.[24]

The study of the cordage from Berenike shows that archaeological cordage cannot provide the archaeologist with an answers on all aspects. It is not possible to deduce detailed information on the economy of cordage, although the quantity might be an indication. It must, however, be stated that the quantification of cordage is somewhat problematic. Counting pieces of cordage, as is done in the research of Berenike's cordage, did not give an accurate insight in the used quantity of cordage but rather a very rough indication. Cordage can break into many pieces, short and long alike. Another way of quantifying is measuring the length of the recovered cordage, as is done by Bernick.[25] This is as uninformative as counting pieces because cordage can be made in any required or desired length. It is the application that makes the quantity informative.

A research of cordage pays the efforts, because it allows insight in the daily life of the people who lived a long time ago. This is especially true for the identifiable and closed-associated cordage and the aspects material and economy. But the bulk of the material, the non-identifiable and non-associated cordage, has less informative content in itself and is 'only' of importance from a statistical point of view. It gains considerable additional importance by comparing with other sites. The statistical information is thus put in broader perspective and relative deductions can be made. This comparison informs one whether the inhabitants of one site were more apt using cordage relative to the inhabitants of other sites.[26]

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[24] Cf. Veldmeijer and Zazzaro, submitted.

[25] Bernick 1994.

[26] A statistic comparison with Quseir al-Qadim proved difficult due to the fact that no extensive figures of the complete corpus have been published yet. The Berenike research proved very important for the study of the aforementioned ropes at Mersa Gawasis.

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**Note on the tables** (colour versions of the graphs are available with the author):

- n.d.: 'not dated'
- n.a.: 'not applicable'
- *: dates are uncertain due to their recovery from trench cleans
- bc: baulk clean
- ebc: east baulk clean
- nbc: north baulk clean
- sbc: south baulk clean
- wbc: west baulk clean
- tc: trench clean

| CONTEXT | DATE | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | TOTAL |
|---|---|---|---|---|---|---|---|
| 002 | 5/6 cad | 239 | 114 | 52 | 49 | 27 | 481 |
| 003 | 5/6 cad | 86 | 57 | 28 | 14 | 0 | 185 |
| 004 | 5/6 cad | 5 | 4 | 0 | 0 | 0 | 9 |
| 005 | 5/6 cad | 11 | 7 | 2 | 0 | 0 | 20 |
| 006 | 5/6 cad | 1 | 2 | 3 | 1 | 1 | 8 |
| 007 | 5/6 cad | 187 | 35 | 11 | 0 | 1 | 234 |
| 008 | 5/6 cad | 5 | 0 | 0 | 0 | 0 | 5 |
| 009 | 5/6 cad | 1 | 0 | 0 | 0 | 0 | 1 |
| 010 | 5/6 cad | 3 | 0 | 0 | 0 | 0 | 3 |
| 012 | 5/6 cad | 81 | 55 | 14 | 0 | 0 | 150 |
| 014 | 5/6 cad | 0 | 1 | 0 | 0 | 0 | 1 |
| 015 | 5/6 cad | 8 | 2 | 0 | 0 | 0 | 10 |
| 018 | 5/6 cad | 9 | 1 | 0 | 0 | 0 | 10 |
| 020 | 5/6 cad | 1 | 1 | 1 | 0 | 0 | 3 |
| 021 | 5/6 cad | 17 | 3 | 3 | 0 | 2 | 25 |
| 022 | 5/6 cad | 2 | 0 | 0 | 0 | 0 | 2 |
| 023 | 5/6 cad | 2 | 0 | 0 | 0 | 1 | 3 |
| 024 | 5/6 cad | 1 | 2 | 0 | 0 | 0 | 3 |
| 025 | 5/6 cad | 8 | 3 | 0 | 0 | 0 | 11 |
| 026 | 5/6 cad | 31 | 10 | 0 | 0 | 1 | 42 |
| 027 | 5/6 cad | 2 | 6 | 1 | 0 | 0 | 9 |
| 027wc | 5/6 cad | 9 | 10 | 0 | 0 | 0 | 19 |
| 028 | 5/6 cad | 22 | 5 | 1 | 0 | 0 | 28 |
| 028b | 5/6 cad | 3 | 1 | 0 | 0 | 0 | 4 |
| 029 | 5/6 cad | 20 | 11 | 5 | 0 | 0 | 36 |
| 030 | 5/6 cad | 3 | 2 | 2 | 0 | 0 | 7 |
| 031 | 5/6 cad | 0 | 0 | 1 | 0 | 0 | 1 |
| 032 | 5/6 cad | 1 | 0 | 1 | 0 | 0 | 2 |
| 033 | 5/6 cad | 2 | 3 | 0 | 0 | 0 | 5 |
| 034 | 5/6 cad | 0 | 1 | 0 | 0 | 0 | 1 |
| 036 | 5/6 cad | 6 | 4 | 0 | 0 | 0 | 10 |
| 037 | 5/6 cad | 7 | 3 | 1 | 0 | 0 | 11 |
| 038 | 5/6 cad | 7 | 6 | 1 | 0 | 0 | 14 |
| 038/039 | 5/6 cad | 0 | 1 | 0 | 0 | 0 | 1 |
| 053 | 4/5 cad | 0 | 0 | 0 | 2 | 0 | 2 |
| 059 | 5 cad | 0 | 0 | 0 | 1 | 0 | 1 |
| 061 | 2-4 cad | 0 | 0 | 1 | 0 | 0 | 1 |
| 063 | 2-4 cad | 1 | 0 | 0 | 0 | 0 | 1 |
| 070 | 5 cad | 0 | 1 | 0 | 0 | 0 | 1 |
| 080 | 4/5 cad | 0 | 0 | 1 | 0 | 0 | 1 |
| 40 | n/a | 781 | 351 | 129 | 67 | 33 | 1361 |
| bc* | n/d | 19* | 31* | 4* | 1* | 2* | 57* |
| ebc* | n/d | 26* | 31* | 4* | 1* | 0* | 62* |
| nbc* | n/d | 50* | 30* | 19* | 1* | 6* | 106* |
| sbc* | n/d | 20* | 25* | 14* | 5* | 4* | 68* |
| wbc* | n/d | 28* | 15* | 7* | 2* | 1* | 53* |
| tc* | n/d | 63* | 21* | 13* | 11* | 0* | 108* |
| 6* | n/a | 206* | 153* | 61* | 21* | 13* | 454* |
| 46 | n/a | 987 | 504 | 190 | 88 | 46 | 1815 |

**Table 1.**
Materials of which the cordage was made, found in trench BE95/95-01 during the 1994- and 1995-seasons. The corpus is presented per locus. Dates are incorporated as well.

| CONTEXT | DATED | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|---|
| | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | |
| 001 | 5/6 | 41 | 47 | 34 | 13 | 5 | 140 |
| 002 | 5/6 | 95 | 26 | 11 | 1 | 5 | 138 |
| 003 | 5/6 | 4 | 4 | 6 | 1 | 0 | 15 |
| 004 | 5/6 | 14 | 11 | 2 | 0 | 0 | 27 |
| 005 | 5/6 | 9 | 10 | 2 | 0 | 0 | 21 |
| 006 | 5/6 | 11 | 0 | 2 | 0 | 0 | 13 |
| 008 | 5/6 | 141 | 78 | 49 | 6 | 7 | 281 |
| 009 | 5/6 | 1 | 2 | 1 | 0 | 0 | 4 |
| 010 | 5/6 | 1 | 0 | 0 | 0 | 0 | 1 |
| 012 | 5/6 | 21 | 4 | 1 | 1 | 0 | 27 |
| 013 | 5/6 | 38 | 16 | 14 | 0 | 2 | 70 |
| 014 | 5/6 | 9 | 14 | 5 | 3 | 0 | 31 |
| 016 | 5/6 | 2 | 0 | 0 | 0 | 0 | 2 |
| 018 | 5/6 | 3 | 6 | 1 | 0 | 0 | 10 |
| 019 | 5/6 | 9 | 10 | 42 | 3 | 5 | 69 |
| 020 | 5/6 | 4 | 3 | 16 | 0 | 0 | 23 |
| 024 | 5/6 | 0 | 0 | 1 | 0 | 0 | 1 |
| 025 | 5/6 | 0 | 9 | 4 | 0 | 1 | 14 |
| 029 | 5/6 | 0 | 0 | 1 | 0 | 1 | 2 |
| 040 | 4/5 | 5 | 1 | 3 | 0 | 0 | 9 |
| 060 | n/d | 0 | 0 | 1 | 0 | 0 | 1 |
| 069 | 4 | 0 | 1 | 0 | 0 | 0 | 1 |
| 095 | n/d | 0 | 0 | 0 | 3 | 0 | 3 |
| 100 | n/d | 1 | 0 | 0 | 0 | 0 | 1 |
| 101 | n/d | 0 | 0 | 1 | 0 | 0 | 1 |
| 121 | 4 | 0 | 2 | 0 | 0 | 0 | 2 |
| 122 | n/d | 1 | 0 | 0 | 0 | 0 | 1 |
| 149 | 4 | 2 | 0 | 0 | 0 | 0 | 2 |
| SUBTOTAL | 28 | n/a | 412 | 244 | 197 | 31 | 26 | 910 |
| nbc* | n/d | 0* | 1* | 3* | 0* | 1* | 5* |
| sbc* | n/d | 3* | 7* | 1* | 0* | 1* | 12* |
| wbc* | n/d | 2* | 1* | 1* | 0* | 0* | 4* |
| tc* | n/d | 4* | 0* | 3* | 0* | 0* | 7* |
| SUBTOTAL* | 4* | n/a | 9* | 9* | 8* | 0* | 2* | 28* |
| TOTAL | 32 | n/a | 421 | 253 | 205 | 31 | 28 | 938 |

**Table 2.**

Materials of which the cordage was made, found in trench BE96/…-10 during the 1996-2000-seasons. The corpus is presented per locus. Dates are incorporated as well.

| CONTEXT | DATE | MATERIAL | | | | | TOTAL |
|---------|------|-------|------|------------|-------------|-------|-------|
|         |      | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER |       |
| 003 | 1 cad | 2 | 9 | 13 | 0 | 1 | 25 |
| 006 | 1 cad | 1 | 9 | 30 | 0 | 15 | 55 |
| 007 | 1 cad | 0 | 8 | 0 | 0 | 0 | 8 |
| 009 | 1 cad | 0 | 2 | 1 | 0 | 0 | 3 |
| 015 | 1 cad | 0 | 0 | 8 | 0 | 0 | 8 |
| 015pr | 1 cad | 0 | 0 | 1 | 0 | 0 | 1 |
| SUBTOTAL 6 | n/a | 3 | 28 | 53 | 0 | 16 | 100 |
| tc* | n/a | 0* | 0* | 1* | 0* | 1* | 2* |
| SUBTOTAL* 1* | n/a | 0* | 0* | 1* | 0* | 1* | 2* |
| TOTAL 7 | n/a | 3 | 28 | 54 | 0 | 17 | 102 |

**Table 3.**
Materials of which the cordage was made, found in trench BE95-03 during the 1995-season. The corpus is presented per locus. Dates are incorporated as well.

| CONTEXT | DATE | MATERIAL | | | | | TOTAL |
|---------|------|-------|------|------------|-------------|-------|-------|
|         |      | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER |       |
| 001 | 1 cad | 13 | 13 | 31 | 42 | 1 | 100 |
| 002 | 1 cad | 430 | 237 | 304 | 119 | 22 | 1112 |
| 003 | 1 cad | 2 | 3 | 3 | 4 | 0 | 12 |
| TOTAL 3 | 1 cad | 445 | 253 | 338 | 165 | 23 | 1224 |

**Table 4.**
Materials of which the cordage was made, found in trench BE96/97-13 during the 1996- and 1997-seasons. The corpus is presented per locus. Dates are incorporated as well.

| CONTEXT | DATE | MATERIAL | | | | | TOTAL |
|---------|------|-------|------|------------|-------------|-------|-------|
|         |      | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER |       |
| 001 | 1 cad | 0 | 0 | 0 | 5 | 0 | 5 |
| 002 | 1 cad | 7 | 1 | 7 | 0 | 0 | 15 |
| 003 | 1 cad | 4 | 2 | 2 | 5 | 0 | 13 |
| 004 | 1 cad | 0 | 0 | 0 | 1 | 0 | 1 |
| 006 | 1 cad | 109 | 18 | 34 | 3 | 0 | 164 |
| 007 | 1 cad | 11 | 2 | 4 | 0 | 0 | 17 |
| 008 | 1 cad | 115 | 11 | 57 | 11 | 1 | 195 |
| 009 | 1 cad | 118 | 24 | 33 | 7 | 0 | 182 |
| 011 | 1 cad | 2 | 0 | 0 | 0 | 0 | 2 |
| 014 | 1 cad | 0 | 0 | 2 | 0 | 0 | 2 |
| 024 | 1 cad | 1 | 0 | 0 | 0 | 0 | 1 |
| SUBTOTAL 11 | 1 cad | 367 | 58 | 139 | 32 | 1 | 597 |
| ebc* | 1 cad | 24* | 3* | 13* | 1* | 0* | 41* |
| nbc* | 1 cad | 29* | 2* | 4* | 0* | 2* | 37* |
| sbc* | 1 cad | 3* | 6* | 0* | 0* | 0* | 9* |
| wbc* | 1 cad | 2* | 6* | 1* | 0* | 0* | 9* |
| tc* | 1 cad | 8* | 0* | 6* | 7* | 0* | 21* |
| SUBTOTAL* 5* | 1 cad | 66* | 17* | 24* | 8* | 2* | 117* |
| TOTAL 16 | 1 cad | 433 | 75 | 163 | 40 | 3 | 714 |

**Table 5.**
Materials of which the cordage was made, found in trench BE97/98-19 during the 1997- and 1998-seasons. The corpus is presented per locus. Dates are incorporated as well.

| CONTEXT | DATE | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|---|
| | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | |
| 002 | 1 cad | 53 | 23 | 12 | 1 | 3 | 92 |
| 006 | 1 cad | 10 | 50 | 11 | 0 | 1 | 72 |
| 007 | 1 cad | 2 | 1 | 1 | 0 | 1 | 5 |
| 009 | 1 cad | 14 | 0 | 6 | 0 | 0 | 20 |
| 010 | 1 cad | 2 | 0 | 2 | 0 | 6 | 10 |
| 011 | 1 cad | 0 | 1 | 0 | 0 | 0 | 1 |
| 012 | 1 cad | 11 | 0 | 3 | 0 | 0 | 14 |
| 014 | 1 cad | 3 | 0 | 10 | 0 | 0 | 13 |
| SUBTOTAL  8 | 1 cad | 95 | 75 | 45 | 1 | 11 | 227 |
| 001* | 1 cad | 11* | 4* | 0* | 0* | 3* | 18* |
| nbc* | 1 cad | 2* | 1* | 0* | 0* | 0* | 3* |
| sbc* | 1 cad | 2* | 1* | 1* | 0* | 0* | 4* |
| wbc* | 1 cad | 7* | 4* | 1* | 0* | 0* | 12* |
| SUBTOTAL*  4* | 1 cad | 22* | 10* | 2* | 0* | 3* | 37* |
| TOTAL  12 | 1 cad | 117 | 85 | 47 | 1 | 14 | 264 |

**Table 6.**
Materials of which the cordage was made, found in trench BE99-29 during the 1999-season. The corpus is presented per locus. Dates are incorporated as well.

| CONTEXT | DATE | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|---|
| | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | |
| 002 | 1 cad | 3 | 0 | 0 | 0 | 0 | 3 |
| 005 | 1 cad | 4 | 0 | 0 | 0 | 0 | 4 |
| 006 | 1 cad | 98 | 17 | 15 | 12 | 3 | 145 |
| 007 | 1 cad | 228 | 163 | 50 | 24 | 13 | 478 |
| 008 | 1 cad | 1 | 0 | 0 | 0 | 0 | 1 |
| 009 | 1 cad | 0 | 0 | 1 | 0 | 0 | 1 |
| 010 | 1 cad | 1 | 0 | 0 | 0 | 0 | 1 |
| 012 | 1 cad | 19 | 14 | 10 | 0 | 3 | 46 |
| 014 | 1 cad | 2 | 1 | 1 | 0 | 0 | 4 |
| 018 | 1 cad | 1 | 0 | 0 | 0 | 0 | 1 |
| SUBTOTAL  10 | 1 cad | 357 | 195 | 77 | 36 | 19 | 684 |
| ebc* | 1 cad | 37* | 7* | 5* | 0* | 0* | 49* |
| nbc* | 1 cad | 22* | 8* | 2* | 0* | 0* | 32* |
| sbc* | 1 cad | 9* | 7* | 0* | 1* | 0* | 17* |
| wbc* | 1 cad | 32* | 17* | 4* | 6* | 0* | 59* |
| SUBTOTAL*  4* | 1 cad | 100* | 39* | 11* | 7* | 0* | 157* |
| TOTAL  14 | 1 cad | 457 | 234 | 88 | 43 | 19 | 841 |

**Table 7.**
Materials of which the cordage was made, found in trench BE99-31 during the 1999-seasons. The corpus is presented per locus. Dates are incorporated as well.

| CONTEXT | DATE | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|---|
| | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | TOTAL | |
| 001 | 1 cad | 6 | 3 | 0 | 1 | 1 | 11 |
| 003 | 1 cad | 10 | 4 | 0 | 0 | 1 | 15 |
| 004 | 1 cad | 11 | 2 | 1 | 11 | 0 | 25 |
| 005 | 1 cad | 18 | 11 | 1 | 0 | 0 | 30 |
| 006 | 1 cad | 1 | 0 | 0 | 0 | 0 | 1 |
| 008 | 1 cad | 190 | 42 | 27 | 27 | 12 | 298 |
| 009 | 1 cad | 6 | 3 | 2 | 1 | 0 | 12 |
| 011 | 1 cad | 2 | 9 | 12 | 0 | 0 | 23 |
| 012 | 1 cad | 0 | 0 | 0 | 2 | 0 | 2 |
| 013 | 1 cad | 85 | 39 | 10 | 8 | 3 | 145 |
| 017 | 1 cad | 23 | 22 | 5 | 6 | 1 | 57 |
| 018 | 1 cad | 57 | 25 | 4 | 4 | 0 | 90 |
| 019 | 1 cad | 9 | 4 | 1 | 5 | 0 | 19 |
| 022 | 1 cad | 30 | 22 | 8 | 6 | 5 | 71 |
| 024 | 1 cad | 3 | 1 | 0 | 0 | 0 | 4 |
| 025 | 1 cad | 33 | 20 | 20 | 0 | 2 | 75 |
| 026 | 1 cad | 15 | 11 | 6 | 0 | 1 | 33 |
| 027 | 1 cad | 2 | 8 | 0 | 4 | 0 | 14 |
| 029 | 1 cad | 6 | 4 | 1 | 0 | 0 | 11 |
| 033 | 1 cad | 0 | 2 | 4 | 0 | 0 | 6 |
| 036 | 1 cad | 0 | 0 | 2 | 0 | 0 | 2 |
| 039 | 1 cad | 0 | 0 | 1 | 0 | 0 | 1 |
| TOTAL 22 | 1 cad | 507 | 232 | 105 | 75 | 26 | 945 |

**Table 8.**

Materials of which the cordage was made, found in trench BE00-33 during the 2000-season. The corpus is presented per locus. Dates are incorporated as well.

| CONTEXT | DATE | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|---|
| | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | TOTAL | |
| 005 | n/d | 1 | 0 | 0 | 0 | 0 | 1 |
| 007 | n/d | 3 | 0 | 0 | 0 | 0 | 3 |
| TOTAL 2 | n/d | 4 | 0 | 0 | 0 | 0 | 4 |

**Table 9.**

Materials of which the cordage was made, found in trench BE96-11 during the 1996-season. The corpus is presented per locus. Dates are incorporated as well.

| CONTEXT | DATE | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|---|
| | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | TOTAL | |
| 001 | late Roman | 19 | 18 | 67 | 25 | 2 | 131 |
| TOTAL 1 | late Roman | 19 | 18 | 67 | 25 | 2 | 131 |

**Table 10.**

Materials of which the cordage was made, found in trench BE96-14 during the 1996-season. The corpus is presented per locus. Dates are incorporated as well.

| CONTEXT | DATE | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|---|
| | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | |
| 002 | 5 cad | 0 | 0 | 1 | 0 | 0 | 1 |
| 004 | 5 cad | 0 | 0 | 1 | 0 | 0 | 1 |
| SUBTOTAL 2 | 5 cad | 0 | 0 | 2 | 0 | 0 | 2 |
| bc* | n/a | 0* | 0* | 0* | 0* | 1* | 1* |
| SUBTOTAL* 1* | n/a | 0* | 0* | 0* | 0* | 1* | 1* |
| TOTAL 3 | n/a | 0 | 0 | 2 | 0 | 1 | 3 |

**Table 11.**

Materials of which the cordage was made, found in trench BE95-04 during the 1995-season. The corpus is presented per locus. Dates are incorporated as well.

| CONTEXT | DATE | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|---|
| | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | TOTAL | |
| 010 | 5/6 cad | 0 | 2 | 0 | 0 | 0 | 2 |
| SUBTOTAL 1 | 5/6 cad | 0 | 2 | 0 | 0 | 0 | 2 |
| bc* | 5/6 cad | 0* | 3* | 1* | 0* | 0* | 4* |
| tc* | n/a | 0* | 1* | 0* | 0* | 0* | 1* |
| wbc* | 5/6 cad | 0* | 0* | 0* | 0* | 3* | 3* |
| SUBTOTAL* 3* | 5/6 cad | 0* | 4* | 1* | 0* | 3* | 8* |
| TOTAL 4 | n/a | 0 | 6 | 1 | 0 | 3 | 10 |

**Table 12.**

Materials of which the cordage was made, found in trench BE96/97/98-12 during the 1996-1998-seasons. The corpus is presented per locus. Dates are incorporated as well.

| CONTEXT | DATE | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|---|
| | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | |
| 002 | 4/5 cad | 0 | 10 | 1 | 0 | 0 | 11 |
| SUBTOTAL 1 | n/a | 0 | 10 | 1 | 0 | 0 | 11 |
| bc* | n/a | 0* | 0* | 0* | 1* | 0* | 1* |
| SUBTOTAL* 1* | n/a | 0* | 0* | 0* | 1* | 0* | 1* |
| TOTAL 2 | n/a | 0 | 10 | 1 | 1 | 0 | 12 |

**Table 13.**

Materials of which the cordage was made, found in trench BE95/96/97-05 during the 1995-1997-seasons. The corpus is presented per locus. *Dates are incorporated as well.*

| CONTEXT | DATE | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|---|
| | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | |
| 003 | 4/5 cad | 6 | 3 | 0 | 0 | 0 | 9 |
| 013 | 4/5 cad | 1 | 3 | 0 | 0 | 0 | 4 |
| 022 | 4/5 cad | 2 | 2 | 14 | 1 | 0 | 19 |
| 025 | 4/5 cad | 0 | 1 | 2 | 0 | 0 | 3 |
| SUBTOTAL 4 | 4/5 cad | 9 | 9 | 16 | 1 | 0 | 35 |
| tc* | 4/5 cad | 0* | 2* | 1* | 0* | 0* | 3* |
| SUBTOTAL* 1* | 4/5 cad | 0* | 2* | 1* | 0* | 0* | 3* |
| TOTAL 5 | 4/5 cad | 9 | 11 | 17 | 1 | 0 | 38 |

**Table 14.**

Materials of which the cordage was made, found in trench BE96-09 during the 1996-season. The corpus is presented per locus. Dates are incorporated as well.

| CONTEXT | DATE | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|---|
| | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | TOTAL | |
| SUBTOTAL 001 | 5/6? cad | 23 | 18 | 31 | 2 | 26 | 100 |
| TOTAL 1 | 5/6? cad | 23 | 18 | 31 | 2 | 26 | 100 |

**Table 15.**

Materials of which the cordage was made, found in trench BE96-15 during the 1996-season. The corpus is presented per locus. Dates are incorporated as well.

**trench BE95/96-06**

| CONTEXT | DATE | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|---|
| | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | |
| 002 | 5/6 cad | 0 | 3 | 0 | 0 | 0 | 3 |
| 004 | 5/6 cad | 4 | 13 | 2 | 3 | 0 | 22 |
| 005 | 5/6 cad | 0 | 0 | 15 | 0 | 0 | 15 |
| 008 | 5/6 cad | 0 | 1 | 0 | 0 | 0 | 1 |
| 011 | 5/6 cad | 0 | 1 | 0 | 0 | 0 | 1 |
| 016 | 5/6 cad | 0 | 3 | 0 | 0 | 0 | 3 |
| SUBTOTAL 6 | n/a | 4 | 21 | 17 | 3 | 0 | 45 |
| tc* | n/d | 1* | 3* | 5* | 0* | 0* | 9* |
| SUBTOTAL* 1* | n/a | 1* | 3* | 5* | 0* | 0* | 9* |
| TOTAL 7 | n/a | 5 | 24 | 22 | 3 | 0 | 54 |

**trench BE97-16**

| CONTEXT | DATE | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|---|
| | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | |
| 004 | 5/6 cad | 3 | 2 | 0 | 0 | 0 | 5 |
| 005 | 5/6 cad | 38 | 13 | 9 | 6 | 0 | 66 |
| 008 | 5/6 cad | 1 | 0 | 0 | 0 | 0 | 1 |
| 009 | 5/6 cad | 3 | 1 | 0 | 0 | 0 | 4 |
| 010 | 5/6 cad | 39 | 11 | 10 | 2 | 1 | 63 |
| 037 | 5/6 cad | 0 | 2 | 1 | 0 | 0 | 3 |
| 038 | 5/6 cad | 39 | 6 | 21 | 12 | 3 | 81 |
| 041 | 5/6 cad | 127 | 58 | 28 | 31 | 4 | 248 |
| SUBTOTAL 8 | n/a | 250 | 93 | 69 | 51 | 8 | 471 |
| 001* | n/d | 8* | 0* | 1* | 2* | 0* | 11* |
| s/wbc* | n/d | 3* | 5* | 0* | 3* | 0* | 11* |
| sbc* | n/d | 26* | 5* | 3* | 3* | 0* | 37* |
| SUBTOTAL* 3* | n/a | 37* | 10* | 4* | 8* | 0* | 59* |
| TOTAL 11 | n/a | 287 | 103 | 73 | 59 | 8 | 530 |

**trench BE95/96-6 & trench BE97-16**

| CONTEXT | DATE | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|---|
| | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | |
| SUBTOTAL 14 | 5/6 cad | 254 | 114 | 86 | 54 | 8 | 516 |
| SUBTOTAL* 4* | n/a | 38* | 13* | 9* | 8* | 0* | 68* |
| TOTAL 18 | n/a | 292 | 127 | 95 | 62 | 8 | 584 |

**Table 16.**

Materials of which the cordage was made, found in trench BE95/96-06 and BE97/98-16 during the 1995-1998-seasons. The corpora are presented per locus. Dates are incorporated as well.

| CONTEXT | DATE | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|---|
| | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | |
| 001 | 5/6 cad | 12 | 9 | 1 | 1 | 0 | 23 |
| 002 | 5/6 cad | 52 | 16 | 4 | 10 | 5 | 87 |
| 003 | 5/6 cad | 29 | 7 | 1 | 0 | 0 | 37 |
| 004 | 5/6 cad | 30 | 8 | 3 | 1 | 1 | 43 |
| 005 | 5/6 cad | 24 | 23 | 0 | 0 | 0 | 47 |
| 006 | 5/6 cad | 14 | 6 | 2 | 0 | 0 | 22 |
| 008 | 5/6 cad | 2 | 1 | 0 | 0 | 0 | 3 |
| 009 | 5/6 cad | 17 | 11 | 5 | 0 | 5 | 38 |
| 010 | 5/6 cad | 75 | 28 | 4 | 17 | 1 | 125 |
| 011 | 5/6 cad | 168 | 46 | 4 | 4 | 4 | 226 |
| 012 | 5/6 cad | 11 | 23 | 1 | 0 | 0 | 35 |
| 013 | 5/6 cad | 1 | 2 | 0 | 0 | 0 | 3 |
| 014 | 5/6 cad | 87 | 18 | 3 | 1 | 0 | 109 |
| 015 | 5/6 cad | 35 | 6 | 3 | 0 | 0 | 44 |
| 016 | 5/6 cad | 7 | 10 | 0 | 0 | 0 | 17 |
| 017 | 5/6 cad | 8 | 3 | 0 | 0 | 0 | 11 |
| 018 | 5/6 cad | 62 | 36 | 2 | 1 | 0 | 101 |
| 019 | 5/6 cad | 5 | 6 | 1 | 0 | 0 | 12 |
| 020 | 5/6 cad | 0 | 14 | 0 | 0 | 0 | 14 |
| 023 | 5/6 cad | 0 | 11 | 4 | 0 | 0 | 15 |
| 024 | 5/6 cad | 0 | 3 | 0 | 0 | 0 | 3 |
| TOTAL 21 | 5/6 cad | 639 | 287 | 38 | 35 | 16 | 1015 |

**Table 17.**

Materials of which the cordage was made, found in trench BE98-21 during the 1998-season. The corpus is presented per locus. Dates are incorporated as well.

| CONTEXT | DATE | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|---|
| | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | |
| 002 | 5/6 cad | 1 | 0 | 0 | 0 | 0 | 1 |
| 006 | n/d | 1 | 2 | 0 | 0 | 0 | 3 |
| TOTAL 2 | n/a | 2 | 2 | 0 | 0 | 0 | 4 |

**Table 18.**

Materials of which the cordage was made, found in trench BE99-27 during the 1999-season. The corpus is presented per locus. Dates are incorporated as well.

| | TRENCH | CONTEXT | DATE | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| | | | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | |
| SUBTOTAL | BE.SH.2 | 005 | 5/6 cad | 0 | 2 | 0 | 0 | 0 | 2 |
| TOTAL | BE.SH.2 | 1 | 5/6 cad | 0 | 2 | 0 | 0 | 0 | 2 |
| | BE.SH.3 | 002 | 5/6 cad | 0 | 0 | 1 | 2 | 0 | 3 |
| | BE.SH.3 | 003 | 5/6 cad | 0 | 2 | 0 | 0 | 0 | 2 |
| TOTAL | BE.SH.3 | 2 | 5/6 cad | 0 | 2 | 1 | 2 | 0 | 5 |
| | BE.SH.5 | 001 | 5/6 cad | 0 | 8 | 0 | 8 | 2 | 18 |
| | BE.SH.5 | 002 | 5/6 cad | 0 | 0 | 1 | 10 | 1 | 12 |
| | BE.SH.5 | 003 | 5/6 cad | 1 | 0 | 1 | 0 | 0 | 2 |
| TOTAL | BE.SH.5 | 3 | 5/6 cad | 1 | 8 | 2 | 18 | 3 | 32 |
| SUBTOTAL | BE.SH.7 | 002 | 5/6 cad | 0 | 0 | 1 | 0 | 0 | 1 |
| TOTAL | BE.SH.7 | 1 | 5/6 cad | 0 | 0 | 1 | 0 | 0 | 1 |

**Table 19.**

Materials of which the cordage was made, found in trenches that were excavated in Shenshef during the 1996-season. The corpus is presented per locus. Dates are incorporated as well.

| PERIOD | | MATERIAL | | | | | TOTAL NUMBER/% |
|---|---|---|---|---|---|---|---|
| | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | |
| | | NUMBER/% | NUMBER/% | NUMBER/% | NUMBER/% | NUMBER/% | |
| | 1 cad | 1943/48 | 903/22 | 788/19 | 316/8 | 99/2 | 4049/100 |
| | 5/6 cad | 2148/53 | 1043/26 | 547/**13** | 215/5 | 114/3 | 4067/100 |
| SUBTOTAL | n/a | 4091/50 | 1946/24 | 1335/16 | 531/7 | 213/3 | 8116/100 |
| | 5/6 cad SH | 1/3 | 12/30 | 4/10 | 20/50 | 3/8 | 40/100 |
| | other dated | 20/25 | 26/32 | 24/30 | 6/7 | 5/6 | 81/100 |
| | n/d | 249/45 | 171/31 | 83/15 | 31/6 | 22/4 | 556/100 |
| SUBTOTAL | n/a | 270/40 | 209/31 | 111/16 | 57/8 | 30/4 | 677/100 |
| TOTAL | | 4361/**50** | 2155/25 | 1446/16 | 588/7 | 243/3 | 8793/100 |
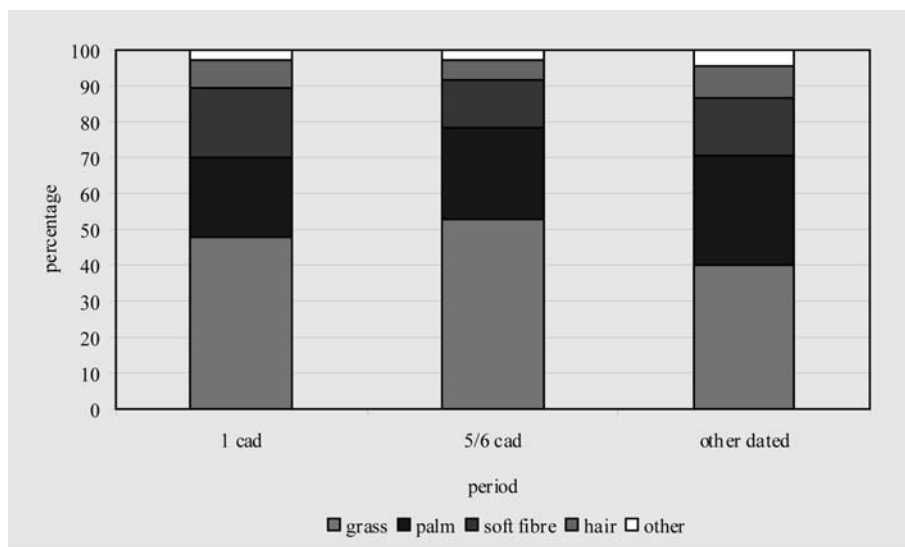


### Table 20 and graph 21.

Materials of which the cordage was made, recovered from contexts dated to the 1st cad, the 5th-6th cad and 'other dated' ('5/6 cad', 'other dated' and 'n/a' lumped), was made. The table shows the quantity per material as well as the percentage of a certain material from the total quantity of cordage that was excavated from that period. Graph 21 is based on table 20 and shows the percentages of which the cordage was made. Key: Thirteen percent (**bold** in table 20) of the total quantity of 4067 pieces of cordage that was recovered from a 5th-6th cad context was made of soft fibre and 50% (**bold** in table 20) of all excavated cordage, regardless their date and material, was made of grass.

| composition ↓ | A<br>plies per material | | | | | B<br>total material | | | | | C<br>total plies (n=1492) | | | | | D<br>total (n=1815) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | i | ii | iii | iv | v | i | ii | iii | iv | v | i | ii | iii | iv | v | i | ii | iii | iv | v |
| | grass (n=933) | palm (n=398) | soft fibre (n=90) | (goat) hair (n=53) | other (n=18) | grass (n=987) | palm (n=504) | soft fibre (n=190) | (goat) hair (n=88) | other (n=46) | grass | palm | soft fibre | (goat) hair | other | grass | palm | soft fibre | (goat) hair | other |
| $zS_2$ | 92 | **75** | 27 | 17 | 61 | 87 | **59** | 13 | 10 | 24 | 58 | **20** | 2 | 1 | 1 | 47 | **16** | 1 | <1 | 1 |
| $sZ_2$ | 1 | 8 | 31 | 77 | 33 | 1 | 6 | 15 | 47 | 13 | <1 | 2 | 2 | 3 | <1 | <1 | 2 | 2 | 2 | <1 |
| $zS_3$ | 7 | 15 | 4 | 0 | 6 | 7 | 12 | 2 | 0 | 2 | 4 | 4 | <1 | 0 | <<1 | 4 | 3 | <1 | 0 | <<1 |
| $sZ_3$ | <1 | 2 | 13 | 2 | 0 | <1 | 1 | 6 | 1 | 0 | <1 | <1 | 1 | <<1 | 0 | <1 | <1 | 1 | <<1 | 0 |
| $zS_n$ | 0 | 1 | 11 | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 0 | <1 | 1 | 0 | 0 | 0 | <1 | 1 | 0 | 0 |
| $sZ_n$ | 0 | 0 | 13 | 4 | 0 | 0 | 0 | 6 | 2 | 0 | 0 | 0 | 1 | <1 | 0 | 0 | 0 | 1 | <1 | 0 |
| other | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| total zS | 99 | 91 | 42 | 17 | 67 | 94 | 72 | 20 | 10 | 26 | 62 | 24 | 3 | 1 | 1 | 51 | 19 | 2 | 0 | 1 |
| total sZ | 1 | 10 | 57 | 83 | 33 | 1 | 7 | 27 | 50 | 13 | 1 | 2 | 4 | 3 | <1 | 1 | 2 | 4 | 2 | <1 |

**Table 22.1.**

Distribution of the compositions of plied cordage found in trench BE94/95-01. Key: Seventy-five percent (**bold**) of all plies made of palm had the $zS_2$ composition (Aii). Fifty-nine percent (**bold**) of all cordage made of palm (i.e. regardless twist and composition) had the $zS_2$ composition (Bii). The $zS_2$ composition of palm cordage made up 20% (**bold**) of the total number of plied cordage from trench BE94/95-01 (Cii) regardless material. The palm $zS_2$ cordage made up 16% (**bold**) of the total quantity regardless twists, compositions or materials (Dii). ($_n$>3).

**Description of the cordage of trench BE94/95-01, on the basis of table 22.1. This description serves as a key for the following tables (table 22.2-22.14):**

Table 22.1 shows that 94% of all grass cordage was made in the zS twist (Bi). The zS twist made up 62% of all plied cordage, regardless the material of which they were made (Ci); the zS twist made up even more than half (51%) of all cordage recovered from the trench, regardless material and composition (in contrast, this was only 1% for the sZ twist [Di]). Ninety-two percent of the plied grass cordage was $zS_2$-plied and 7% was $zS_3$ plied. Very few grass plies showed an opposite orientation (only 1% of the total of grass plies, Ai).

Palm plies exhibited a similar emphasis on the zS twist but less convincingly (91% of the total of palm plies [Aii] and 72% of all cordage made of palm [Bii]). On the other hand, plied palm with a zS twist made

up only 24% of the total of plied cordage from trench BE94/95-01 (Cii) and 19% of the total of cordage, regardless material and composition (Dii). This was 2% and 2% for the sZ twist respectively. Seventy-five percent of the plies made of palm (Aii), had a $zS_2$ composition, which is the most often encountered composition (as with grass). The $sZ_2$ and $sZ_3$ compositions occurred more often relative to grass plies. Also the $zS_3$ composition was registerred more often than with grass plies (cf. Ai and Aii).

The zS and sZ twists were much more evenly spread among soft fibre plies. Forty-two percent of the total of soft fibre plies (Aiii) and 20% of all cordage made of soft fibre (Biii) was made according the zS twist, whereas 57% and 27% respectively showed compositions in the sZ twist. However, the plied cordage with a zS twist made up only 3% of the total of plies (Ciii) and 2% of the total of the trench, regardless composition and material (Diii; this was 4% and 4% respectively for the sZ twist). The different compositions were much more evenly represented: there was no strong emphasis on one composition in particular. However, the $zS_2$ and $sZ_2$ compositions occurred most often (27% and 31% respectively, Aiii).

The situation with (goat) hair differed because the majority of the plied cordage was made in the sZ twist (Aiv: 83% against 16% zS). Fifty percent of the total of cordage showed the sZ twist (Biv). The percentage of (goat) hair of the total of plied cordage of the trench (Civ) was low (4%) and good a 2% of the total of the trench, regardless the composition and material (Diii). The $sZ_2$ composition was encountered most often (Aiv: 77% of the total of (goat) hair plies and 47% of the total of (goat) hair cordage).

A little more than 1% of the total of plied cordage was registerred as 'other material' (C). Due to the nature of this category not much value can be given to the percentage. However, zS was the most commonly occurring twist (67%: Av).

| composition ↓ | A | | | | | B | | | | | C | | | | | D | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | i | ii | iii | iv | v | i | ii | iii | iv | v | i | ii | iii | iv | v | i | ii | iii | iv | v |
| | plies per material | | | | | total material | | | | | total plies (n=416) | | | | | total (n=584) | | | | |
| | grass (n=258) | palm (n=102) | soft fibre (n=21) | (goat) hair (n=31) | other (n=4) | grass (n=292) | palm (n=127) | soft fibre (n=95) | (goat) hair (n=62) | other (n=8) | grass | palm | soft fibre | (goat) hair | other | grass | palm | soft fibre | (goat) hair | other |
| $zS_2$ | 95 | 43 | 24 | 0 | 50 | 84 | 35 | 14 | 0 | 25 | 59 | 11 | 1 | 0 | <1 | 42 | 8 | 1 | 0 | <1 |
| $sZ_2$ | <1 | 7 | 29 | 97 | 0 | <1 | 6 | 6 | 48 | 0 | <1 | 2 | 1 | 7 | 0 | <1 | 1 | 1 | 5 | 0 |
| $zS_3$ | 4 | 45 | 0 | 0 | 25 | 4 | 36 | 0 | 0 | 13 | 3 | 11 | 0 | 0 | <1 | 2 | 8 | 0 | 0 | <1 |
| $sZ_3$ | 0 | 4 | 19 | 3 | 0 | 0 | 3 | 4 | 2 | 0 | 0 | 1 | 1 | <1 | 0 | 0 | 1 | 1 | <1 | 0 |
| $zS_n$ | 0 | 1 | 5 | 0 | 25 | 0 | 1 | 1 | 0 | 13 | 0 | <1 | <1 | 0 | <1 | 0 | <1 | <1 | 0 | <1 |
| $sZ_n$ | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| other | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| total zS | 99 | 89 | 29 | 0 | 100 | 88 | 72 | 15 | 0 | 51 | 62 | 22 | 1 | 0 | 1 | 44 | 16 | 1 | 0 | 1 |
| total sZ | <1 | 11 | 72 | 100 | 0 | <1 | 9 | 15 | 50 | 0 | <1 | 3 | 3 | 7 | 0 | <1 | 2 | 3 | 5 | 0 |

**Table 22.2.**
Distribution of the compositions of plied cordage found in trench BE6/16. For key and description see table 22.1. ($_n$>3).

| composition ↓ | A | | | | | B | | | | | C | | | | | D | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | i | ii | iii | iv | v | i | ii | iii | iv | v | i | ii | iii | iv | v | i | ii | iii | iv | v |
| | plies per material | | | | | total material | | | | | total plies (n=716) | | | | | total (n=938) | | | | |
| | grass (n=390) | palm (n=212) | soft fibre (n=78) | (goat) hair (n=18) | other (n=18) | grass (n=421) | palm (n=253) | soft fibre (n=205) | (goat) hair (n=31) | other (n=28) | grass | palm | soft fibre | (goat) hair | other | grass | palm | soft fibre | (goat) hair | other |
| $zS_2$ | 89 | 57 | 35 | 0 | 56 | 83 | 48 | 13 | 0 | 36 | 49 | 17 | 4 | 0 | 1 | 37 | 13 | 3 | 0 | 1 |
| $sZ_2$ | 3 | 16 | 33 | 94 | 22 | 3 | 13 | 13 | 55 | 14 | 2 | 5 | 4 | 2 | 1 | 1 | 4 | 3 | 2 | <1 |
| $zS_3$ | 7 | 24 | 4 | 0 | 0 | 7 | 22 | 1 | 0 | 0 | 4 | 7 | <1 | 0 | 0 | 3 | 5 | <1 | 0 | 0 |
| $sZ_3$ | 0 | 2 | 8 | 0 | 11 | 0 | 2 | 3 | 0 | 7 | 0 | 1 | 1 | 0 | <1 | 0 | <1 | 1 | 0 | <1 |
| $zS_n$ | <1 | 1 | 12 | 0 | 0 | <1 | 1 | 4 | 0 | 0 | <1 | <1 | 1 | 0 | 0 | <1 | <1 | 1 | 0 | 0 |
| $sZ_n$ | <1 | 0 | 9 | 6 | 11 | <1 | 0 | 3 | 3 | 7 | <1 | 0 | 1 | <1 | <1 | <1 | 0 | 1 | <1 | <1 |
| other | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| total zS | 96 | 82 | 51 | 0 | 56 | 90 | 71 | 18 | 0 | 36 | 53 | 24 | 5 | 0 | 1 | 40 | 18 | 4 | 0 | 1 |
| total sZ | 3 | 18 | 50 | 100 | 44 | 3 | 15 | 19 | 58 | 28 | 2 | 6 | 6 | 2 | 2 | 1 | 4 | 5 | 2 | 1 |

**Table 22.3.**
Distribution of the compositions of plied cordage found in trench BE96/…-10. For key and description see table 22.1. ($_n$>3).

| composition ↓ | A | | | | | B | | | | | C | | | | | D | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | i | ii | iii | iv | v | i | ii | iii | iv | v | i | ii | iii | iv | v | i | ii | iii | iv | v |
| | plies per material | | | | | total material | | | | | total plies (n=794) | | | | | total (n=1224) | | | | |
| | grass (n=337) | palm (n=173) | soft fibre (n=141) | (goat) hair (n=130) | other (n=13) | grass (n=445) | palm (n=253) | soft fibre (n=338) | (goat) hair (n=165) | other (n=23) | grass | palm | soft fibre | (goat) hair | other | grass | palm | soft fibre | (goat) hair | other |
| $zS_2$ | 75 | 47 | 24 | 3 | 0 | 57 | 32 | 10 | 2 | 0 | 32 | 10 | 4 | 1 | 0 | 21 | 32 | 3 | <1 | 0 |
| $sZ_2$ | 9 | 38 | 23 | 97 | 23 | 7 | 26 | 10 | 76 | 13 | 4 | 8 | 4 | 16 | <1 | 3 | 5 | 3 | 10 | <1 |
| $zS_3$ | 14 | 11 | 4 | 0 | 31 | 11 | 8 | 2 | 0 | 17 | 6 | 2 | 1 | 0 | 1 | 4 | 2 | <1 | 0 | <1 |
| $sZ_3$ | 1 | 4 | 12 | 0 | 0 | 1 | 3 | 5 | 0 | 0 | <1 | 1 | 2 | 0 | 0 | <1 | 1 | 1 | 0 | 0 |
| $zS_n$ | <1 | 0 | 30 | 0 | 46 | <1 | 0 | 13 | 0 | 26 | <1 | 0 | 5 | 0 | 1 | <<1 | 0 | 4 | 0 | <1 |
| $sZ_n$ | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| other | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| total zS | 89 | 58 | 58 | 3 | 77 | 68 | 40 | 25 | 2 | 43 | 38 | 12 | 10 | 1 | 2 | 25 | 34 | 7 | <1 | 1 |
| total sZ | 10 | 42 | 41 | 97 | 23 | 8 | 29 | 17 | 76 | 13 | 4 | 9 | 7 | 16 | <1 | 3 | 6 | 5 | 10 | <1 |

**Table 22.4.**
Distribution of the compositions of plied cordage found in trench BE96/97-13. For key and description see table 22.1. ($_n$>3).

| composition ↓ | A plies per material | | | | | B total material | | | | | C total plies (n=594) | | | | | D total (n=714) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | i grass (n=414) | ii palm (n=62) | iii soft fibre (n=87) | iv (goat) hair (n=31) | v other (n=0) | i grass (n=433) | ii palm (n=75) | iii soft fibre (n=163) | iv (goat) hair (n=40) | v other (n=3) | i grass | ii palm | iii soft fibre | iv (goat) hair | v other | i grass | ii palm | iii soft fibre | iv (goat) hair | v other |
| $zS_2$ | 67 | 31 | 15 | 0 | 0 | 64 | 25 | 8 | 0 | 0 | 47 | 3 | 2 | 0 | 0 | 39 | 3 | 2 | 0 | 0 |
| $sZ_2$ | 8 | 34 | 6 | 94 | 0 | 7 | 28 | 3 | 73 | 0 | 5 | 4 | 1 | 5 | 0 | 4 | 3 | 1 | 4 | 0 |
| $zS_3$ | 19 | 19 | 8 | 0 | 0 | 18 | 16 | 4 | 0 | 0 | 13 | 2 | 1 | 0 | 0 | 11 | 2 | 1 | 0 | 0 |
| $sZ_3$ | 6 | 16 | 2 | 6 | 0 | 6 | 13 | 1 | 5 | 0 | 4 | 2 | <1 | <1 | 0 | 4 | 1 | <1 | <1 | 0 |
| $zS_n$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $sZ_n$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| other | <1 | 0 | 69 | 0 | 0 | <1 | 0 | 37 | 0 | 0 | <1 | 0 | 10 | 0 | 0 | <1 | 0 | 8 | 0 | 0 |
| total zS | 86 | 50 | 23 | 0 | 0 | 82 | 41 | 12 | 0 | 0 | 60 | 5 | 3 | 0 | 0 | 50 | 5 | 3 | 0 | 0 |
| total sZ | 14 | 50 | 8 | 100 | 0 | 13 | 41 | 4 | 78 | 0 | 9 | 6 | 1 | 5 | 0 | 8 | 4 | 1 | 4 | 0 |

**Table 22.5.**

Distribution of the compositions of plied cordage found in trench BE97/98-19. For key and description see table 22.1. ($_n$>3).

| composition ↓ | A plies per material | | | | | B total material | | | | | C total plies (n=882) | | | | | D total (n=1015) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | i | ii | iii | iv | v | i | ii | iii | iv | v | i | ii | iii | iv | v | i | ii | iii | iv | v |
| | grass (n=591) | palm (n=245) | soft fibre (n=19) | (goat) hair (n=25) | other (n=2) | grass (n=639) | palm (n=287) | soft fibre (n=38) | (goat) hair (n=35) | other (n=16) | grass | palm | soft fibre | (goat) hair | other | grass | palm | soft fibre | (goat) hair | other |
| $zS_2$ | 89 | 55 | 0 | 0 | 0 | 82 | 47 | 0 | 0 | 0 | 60 | 15 | 0 | 0 | 0 | 52 | 13 | 0 | 0 | 0 |
| $sZ_2$ | 2 | 8 | 32 | 92 | 0 | 2 | 7 | 16 | 66 | 0 | 1 | 2 | 1 | 3 | 0 | 1 | 2 | 1 | 2 | 0 |
| $zS_3$ | 7 | 27 | 5 | 0 | 0 | 7 | 23 | 3 | 0 | 0 | 5 | 7 | <1 | 0 | 0 | 4 | 7 | <<1 | 0 | 0 |
| $sZ_3$ | 2 | 10 | 16 | 0 | 0 | 2 | 8 | 8 | 0 | 0 | 1 | 3 | <1 | 0 | 0 | 1 | 2 | <1 | 0 | 0 |
| $zS_n$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $sZ_n$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| other | <1 | <1 | 47 | 8 | 100 | <1 | <1 | 24 | 6 | 13 | <1 | <1 | 1 | <1 | <1 | <<1 | <<1 | 1 | <1 | <1 |
| total zS | 96 | 82 | 5 | 0 | 0 | 89 | 70 | 3 | 0 | 0 | 65 | 22 | <1 | 0 | 0 | 56 | 20 | 0 | 0 | 0 |
| total sZ | 4 | 18 | 48 | 92 | 0 | 4 | 15 | 24 | 66 | 0 | 2 | 5 | 1 | 3 | 0 | 2 | 4 | 1 | 2 | 0 |

**Table 22.6.**
Distribution of the compositions of plied cordage found in trench BE98-21. For key and description see table 22.1. ($_n$>3).

| composition ↓ | A plies per material | | | | | B total material | | | | | C total plies (n=217) | | | | | D total (n=264) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | i | ii | iii | iv | v | i | ii | iii | iv | v | i | ii | iii | iv | v | i | ii | iii | iv | v |
| | grass (n=105) | palm (n=78) | soft fibre (n=21) | (goat) hair (n=1) | other (n=12) | grass (n=117) | palm (n=85) | soft fibre (n=47) | (goat) hair (n=1) | other (n=14) | grass | palm | soft fibre | (goat) hair | other | grass | palm | soft fibre | (goat) hair | other |
| $zS_2$ | 69 | 74 | 10 | 0 | 92 | 62 | 68 | 4 | 0 | 79 | 33 | 27 | 1 | 0 | 5 | 27 | 22 | 1 | 0 | 4 |
| $sZ_2$ | 9 | 13 | 10 | 100 | 0 | 8 | 12 | 4 | 100 | 0 | 4 | 5 | 1 | <1 | 0 | 3 | 4 | 1 | <1 | 0 |
| $zS_3$ | 10 | 6 | 14 | 0 | 0 | 9 | 6 | 6 | 0 | 0 | 5 | 2 | 1 | 0 | 0 | 4 | 2 | 1 | 0 | 0 |
| $sZ_3$ | 6 | 5 | 0 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 |
| $zS_n$ | 7 | 0 | 62 | 0 | 8 | 6 | 0 | 28 | 0 | 7 | 3 | 0 | 6 | 0 | <1 | 3 | 0 | 5 | 0 | <1 |
| $sZ_n$ | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | <1 | 0 | 0 | 0 | 0 | <1 | 0 | 0 | 0 |
| other | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | <1 | 0 | 0 | 0 | 0 | <1 | 0 | 0 |
| total zS | 86 | 80 | 86 | 0 | 100 | 77 | 74 | 38 | 0 | 86 | 41 | 29 | 8 | 0 | 5 | 34 | 24 | 7 | 0 | 4 |
| total sZ | 15 | 19 | 10 | 100 | 0 | 13 | 18 | 4 | 100 | 0 | 7 | 7 | 1 | <1 | 0 | 5 | 6 | 1 | <1 | 0 |

**Table 22.7.**
Distribution of the compositions of plied cordage found in trench BE99-29. For key and description see table 22.1. ($_n$>3).

| composition ↓ | A | | | | | B | | | | | C | | | | | D | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | i | ii | iii | iv | v | i | ii | iii | iv | v | i | ii | iii | iv | v | i | ii | iii | iv | v |
| | plies per material | | | | | total material | | | | | total plies (n=660) | | | | | total (n=841) | | | | |
| | grass (n=415) | palm (n=172) | soft fibre (n=45) | (goat) hair (n=18) | other (n=10) | grass (n=457) | palm (n=234) | soft fibre (n=88) | (goat) hair (n=43) | other (n=19) | grass | palm | soft fibre | (goat) hair | other | grass | palm | soft fibre | (goat) hair | other |
| $zS_2$ | 77 | 48 | 11 | 17 | 40 | 70 | 35 | 6 | 7 | 21 | 49 | 13 | 1 | <1 | 1 | 38 | 10 | 1 | <1 | <1 |
| $sZ_2$ | 3 | 23 | 27 | 83 | 40 | 3 | 17 | 14 | 35 | 21 | 2 | 6 | 2 | 2 | 1 | 2 | 5 | 1 | 2 | <1 |
| $zS_3$ | 14 | 10 | 7 | 0 | 0 | 13 | 7 | 3 | 0 | 0 | 9 | 3 | <1 | 0 | 0 | 7 | 2 | <1 | 0 | 0 |
| $sZ_3$ | 5 | 18 | 2 | 0 | 20 | 5 | 14 | 1 | 0 | 11 | 3 | 5 | <1 | 0 | <1 | 2 | 4 | <1 | 0 | <1 |
| $zS_n$ | 0 | 0 | 51 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 0 |
| $sZ_n$ | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | <1 | 0 | 0 | 0 | 0 | <1 | 0 | 0 |
| other | <1 | 0 | 0 | 0 | 0 | <1 | 0 | 0 | 0 | 0 | <1 | 0 | 0 | 0 | 0 | <1 | 0 | 0 | 0 | 0 |
| total zS | 91 | 58 | 69 | 17 | 40 | 83 | 42 | 35 | 7 | 21 | 58 | 16 | 4 | <1 | 1 | 45 | 12 | 4 | <1 | <1 |
| total sZ | 8 | 41 | 31 | 83 | 60 | 8 | 31 | 16 | 35 | 32 | 5 | 11 | 3 | 2 | 1 | 4 | 9 | 2 | 2 | 1 |

**Table 22.8.**
Distribution of the compositions of plied cordage found in trench BE99-31. For key and description see table 22.1. ($_n$>3).

| composition ↓ | A plies per material | | | | | B total material | | | | | C total plies (n=727) | | | | | D total (n=945) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | i grass (n=451) | ii palm (n=187) | iii soft fibre (n=12) | iv (goat) hair (n=55) | v other (n=22) | i grass (n=507) | ii palm (n=232) | iii soft fibre (n=105) | iv (goat) hair (n=75) | v other (n=26) | i grass | ii palm | iii soft fibre | iv (goat) hair | v other | i grass | ii palm | iii soft fibre | iv (goat) hair | v other |
| $zS_2$ | 87 | 33 | 42 | 0 | 14 | 77 | 27 | 5 | 0 | 12 | 54 | 9 | 1 | 0 | <1 | 41 | 7 | 1 | 0 | <1 |
| $sZ_2$ | 4 | 24 | 17 | 100 | 32 | 4 | 19 | 2 | 73 | 27 | 2 | 6 | <1 | 8 | 1 | 2 | 5 | <1 | 6 | 1 |
| $zS_3$ | 3 | 27 | 8 | 0 | 36 | 3 | 22 | 1 | 0 | 31 | 2 | 7 | <1 | 0 | 1 | 2 | 5 | <1 | 0 | 1 |
| $sZ_3$ | 6 | 14 | 0 | 0 | 14 | 5 | 11 | 0 | 0 | 12 | 3 | 4 | 0 | 0 | <1 | 3 | 3 | 0 | 0 | <1 |
| $zS_n$ | <1 | 2 | 17 | 0 | 5 | <1 | 1 | 2 | 0 | 4 | <1 | <1 | <1 | 0 | <1 | <1 | <1 | <1 | 0 | <1 |
| $sZ_n$ | 0 | 1 | 17 | 0 | 0 | 0 | <1 | 2 | 0 | 0 | 0 | <1 | <1 | 0 | 0 | 0 | <1 | <1 | 0 | 0 |
| other | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| total zS | 90 | 62 | 67 | 0 | 55 | 80 | 50 | 8 | 0 | 47 | 56 | 16 | 2 | 0 | 2 | 43 | 12 | 2 | 0 | 2 |
| total sZ | 10 | 39 | 34 | 100 | 46 | 9 | 30 | 4 | 73 | 39 | 5 | 10 | 1 | 8 | 1 | 5 | 8 | 1 | 6 | 1 |

**Table 22.9.**
Distribution of the compositions of plied cordage found in trench BE00-33. For key and description see table 22.1. ($_n$>3).

| composition ↓ | A plies per material | | | | | B total material | | | | | C total plies (n=6825) | | | | | D total (n=8793) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | i | ii | iii | iv | v | i | ii | iii | iv | v | i | ii | iii | iv | v | i | ii | iii | iv | v |
| | grass (n=3951) | palm (n=1717) | soft fibre (n=605) | hair (n=403) | other (n=149) | grass (n=4361) | palm (n=2155) | soft fibre (n=1446) | hair (n=589) | other (n=242) | grass | palm | soft fibre | hair | other | grass | palm | soft fibre | hair | other |
| $zS_2$ | 85 | 55 | 24 | 4 | 40 | 77 | 44 | 10 | 3 | 24 | 49 | 14 | 2 | <1 | 1 | 38 | 11 | 2 | <1 | 1 |
| $sZ_2$ | 3 | 18 | 25 | 93 | 27 | 3 | 14 | 11 | 63 | 17 | 2 | 4 | 2 | 5 | 1 | 2 | 3 | 2 | 4 | <1 |
| $zS_3$ | 9 | **20** | 5 | 0 | 11 | 8 | **16** | 2 | 0 | 7 | 5 | **5** | <1 | 0 | <1 | 4 | **4** | <1 | 0 | <1 |
| $sZ_3$ | 2 | 7 | 9 | 1 | 13 | 2 | 5 | 4 | 1 | 8 | 1 | 2 | 1 | <<1 | <1 | 1 | 1 | 1 | <<1 | <1 |
| $zS_n$ | <1 | 1 | 19 | 0 | 6 | <1 | <1 | 8 | 0 | 4 | <1 | <1 | 2 | 0 | <1 | <1 | <1 | 1 | 0 | <1 |
| $sZ_n$ | <<1 | <1 | 7 | 1 | 2 | <<1 | <<1 | 3 | 1 | 1 | <<1 | <<1 | 1 | <<1 | <<1 | <<1 | <<1 | <1 | <<1 | <<1 |
| other | <<1 | <<1 | 12 | <1 | 1 | <<1 | <<1 | 5 | <1 | 1 | <<1 | <<1 | 1 | <<1 | <<1 | <<1 | <<1 | 1 | <<1 | <<1 |
| total zS | 94 | 76 | 48 | 4 | 57 | 85 | 60 | 20 | 3 | 35 | 54 | 19 | 4 | <1 | 2 | 42 | 15 | 3 | <1 | 2 |
| total sZ | 5 | 25 | 41 | 95 | 42 | 5 | 19 | 18 | 65 | 26 | 3 | 6 | 4 | 5 | 1 | 3 | 4 | 3 | 4 | 1 |

**Table 22.10 (above) and graph 22.11-22.14 (below).**
Distribution of the compositions of plied cordage found in Berenike. ($_n$>3).
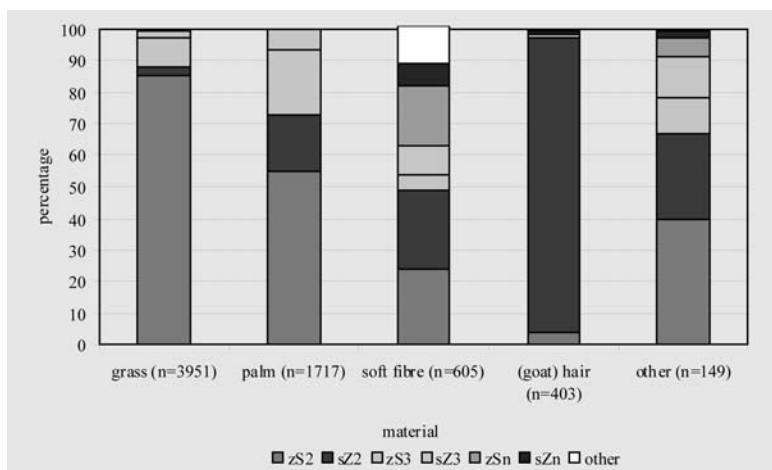
**Graph 22.11.**
Graphic presentation of the A section of table 22.10. Key: Twenty percent (bold in table 22.10) of all palm plies showed the $zS_3$ composition. ($_n>3$).
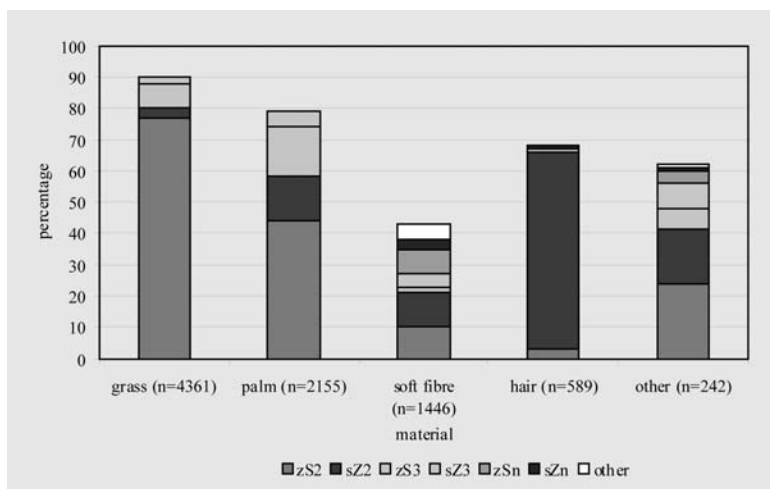
**Graph 22.12.**
Graphic presentation of the B section of table 22.10. Key: Sixteen percent (**bold** in table 22.10) of all palm cordage (i.e. regardless twist) showed the $zS_3$ composition. ($_n>3$).
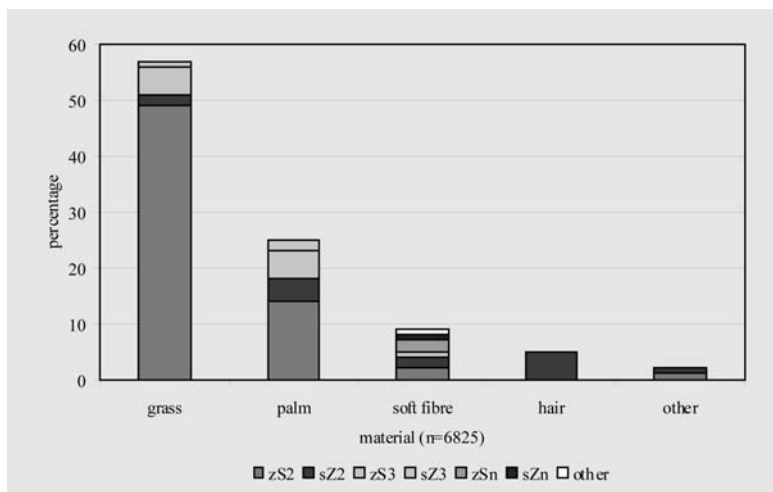
**Graph 22.13.**
Graphic presentation of the C section of table 22.10. Key: The $zS_3$ composition of cordage made of palm made up 5% (**bold** in table 22.10) of the total number of plied cordage from the site regardless material. ($_n$>3).
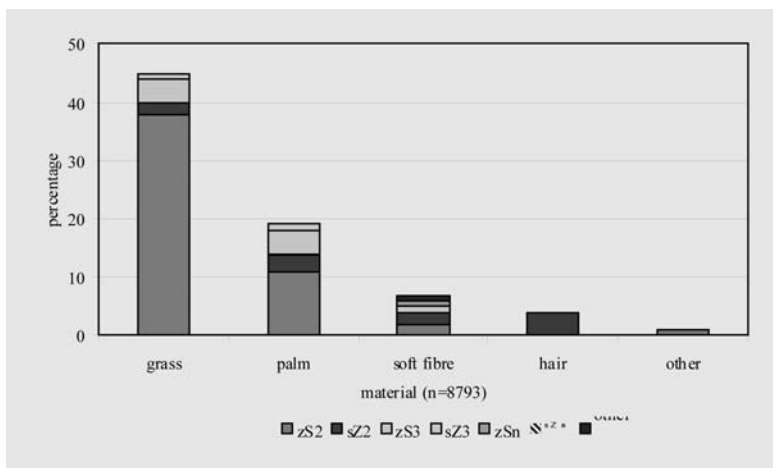


**Graph 22.14.**
Graphic presentation of the D section of table 22.10. Key: The palm $zS_3$ cordage made up 4% (**bold** in table 22.10) of the total quantity of cordage without taking notice of difference in twist, composition or material. ($_n$>3).

| COMPOSITION | | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | TOTAL |
|---|---|---|---|---|---|---|---|---|
| | $zS_2$ | | 1312 | 317 | 73 | 7 | 16 | 1725 |
| | | $sZ_2$ | 98 | 188 | 56 | 222 | 18 | 582 |
| | $zS_3$ | | 207 | 103 | 21 | 0 | 11 | 342 |
| 1 cad | | $sZ_3$ | 79 | 79 | 20 | 0 | 17 | 195 |
| | $zS_n$ | | 8 | 8 | 91 | 0 | 7 | 114 |
| | | $sZ_n$ | 0 | 2 | 11 | 0 | 0 | **13** |
| | other | | 4 | 0 | 54 | 0 | 1 | 59 |
| | total | | 1708 | 697 | 326 | 229 | 70 | 3030 |
| | $zS_2$ | | 1810 | 514 | 59 | 5 | 30 | 2418 |
| | | $sZ_2$ | **31** | 93 | 76 | 123 | 20 | 343 |
| | $zS_3$ | | 135 | 210 | 9 | 0 | 1 | 355 |
| 5/6 cad | | $sZ_3$ | 14 | 32 | 31 | 3 | 5 | 85 |
| | $zS_n$ | | 1 | 6 | 21 | 0 | 2 | 30 |
| | | $sZ_n$ | 1 | 0 | 26 | 5 | 3 | 35 |
| | other | | 1 | 1 | 7 | 2 | 0 | 11 |
| | total | | 1993 | 856 | 229 | 138 | 61 | 3277 |

**Table 23.**

Plied cordage and the distribution of compositions, quantified per material and period (1st cad and 5th-6th cad). The last column shows the totals of a composition per period. The table shows the quantities from which the percentages of table 24 and 25 were calculated. Key: Thirty-one percent (**bold**) plied pieces of cordage made of grass, encountered in contexts dated to the 5th-6th century AD, showed the $sZ_2$ composition. Thirteen (**bold**) plied pieces of cordage from the 1st century AD contexts showed a $sZ_n$ composition. ($_n$>3).

| composition ↓ | A plies per material | | | | | B total material | | | | | C total plies (n=3030) | | | | | D total 1 cad (n=4049) | | | | | E total site (n=8793) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | i | ii | iii | iv | v | i | ii | iii | iv | v | i | ii | iii | iv | v | i | ii | iii | iv | v | i | ii | iii | iv | v |
| | grass (n=1708) | palm (n=697) | soft fibre (n=326) | (goat) hair (n=229) | other (n=70) | grass (n=1943) | palm (n=903) | soft fibre (n=788) | (goat) hair (n=316) | other (n=99) | grass | palm | soft fibre | (goat) hair | other | grass | palm | soft fibre | (goat) hair | other | grass | palm | soft fibre | (goat) hair | other |
| $zS_2$ | 77 | **45** | 22 | 3 | 23 | 68 | **35** | 9 | 2 | 16 | 43 | **10** | 2 | <1 | 1 | 32 | **8** | 2 | <1 | <1 | 15 | **4** | 1 | <<1 | <1 |
| $sZ_2$ | 6 | 27 | 17 | 97 | 26 | 5 | 21 | 7 | 70 | 18 | 3 | 6 | 2 | 7 | 1 | 2 | 5 | 1 | 5 | <1 | 1 | 2 | 1 | 3 | <1 |
| $zS_3$ | 12 | 15 | 6 | 0 | 16 | 11 | 11 | 3 | 0 | 11 | 7 | 3 | 1 | 0 | <1 | 5 | 3 | 1 | 0 | <1 | 2 | 1 | <1 | 0 | <1 |
| $sZ_3$ | 5 | 11 | 6 | 0 | 24 | 4 | 9 | 3 | 0 | 17 | 3 | 3 | 1 | 0 | 1 | 2 | 2 | <1 | 0 | <1 | 1 | 1 | <1 | 0 | <1 |
| $zS_n$ | <1 | 1 | 28 | 0 | 10 | <1 | 1 | 12 | 0 | 7 | <1 | <1 | 3 | 0 | <1 | <1 | <1 | 2 | 0 | <1 | <1 | <<1 | 1 | 0 | <<1 |
| $sZ_n$ | 0 | <1 | 3 | 0 | 0 | 0 | <1 | 1 | 0 | 0 | 0 | <<1 | <1 | 0 | 0 | 0 | <<1 | <1 | 0 | 0 | 0 | <<1 | <1 | 0 | 0 |
| other | <1 | 0 | 17 | 0 | 1 | <1 | 0 | 7 | 0 | 1 | <1 | 0 | 2 | 0 | <<1 | <<1 | 0 | 1 | 0 | <<1 | <<1 | 0 | 1 | 0 | <<1 |
| total zS | 89 | 61 | 57 | 3 | 49 | 79 | 47 | 24 | 2 | 34 | 50 | 13 | 6 | <1 | 2 | 37 | 11 | 5 | <1 | 1 | 17 | 5 | 2 | <<1 | 1 |
| total sZ | 11 | 38 | 27 | 97 | 50 | 9 | 30 | 11 | 70 | 35 | 6 | 9 | 3 | 7 | 2 | 4 | 7 | 2 | 5 | 1 | 2 | 3 | 2 | 3 | 1 |

**Table 24 (above) and graph 25 (below).**

Distribution of the compositions of plied cordage from contexts dated to the 1st cad, in percentage of plies of a material (Ai-v), in percentage of the total quantity of a material regardless composition (Bi-v), in percentage of the total quantity of plies from the trench regardless material (Ci-v), in percentage of the total quantity of all compositions from the trench regardless material (Di-v) and in percentage of the total quantity of cordage from the site regardless twist, composition and material (Ei-v). Key: Forty-five percent (**bold** in table 24) of all plies made of palm, had the $zS_2$ composition (Aii). Thirty-five percent (**bold** in table 24) of all cordage made of palm (i.e. regardless twist and composition), had the $zS_2$ composition (Bii). This $zS_2$ composition of palm cordage, made up 10% (**bold** in table 24) of the total quantity of plied cordage (Cii) regardless material. The palm $zS_2$ cordage made up 8% (**bold**) of the total quantity of cordage without taking notice of differences in twists, compositions or materials (Dii). Four percent of the total quantity of cordage from the site was $zS_2$ palm cordage from a 1st cad context (Eii). ($_n$>3). Graph 25. The graph shows the data of Ai-v, table 24.

| composition ↓ | A plies per material | | | | | B total material | | | | | C total plies (n=3275) | | | | | D total 5/6 cad (n=4067) | | | | | E total site (n=8793) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | i grass (n=1993) | ii palm (n=856) | iii soft fibre (n=229) | iv (goat) hair (n=138) | v other (n=59) | i grass (n=2148) | ii palm (n=1043) | iii soft fibre (n=547) | iv (goat) hair (n=215) | v other (n=114) | i grass | ii palm | iii soft fibre | iv (goat) hair | v other | i grass | ii palm | iii soft fibre | iv (goat) hair | v other | i grass | ii palm | iii soft fibre | iv (goat) hair | v other |
| $zS_2$ | 91 | 60 | 26 | 4 | 47 | 84 | 49 | 11 | 2 | 25 | 55 | 16 | 2 | <1 | 1 | 45 | 13 | 1 | <1 | 1 | 21 | 6 | 1 | <<1 | <1 |
| $sZ_2$ | 2 | 11 | 33 | 89 | 34 | 1 | 9 | 14 | 57 | 18 | 1 | 3 | 2 | 4 | 1 | 1 | 2 | 2 | 3 | <1 | <1 | 1 | 1 | 1 | <1 |
| $zS_3$ | 7 | 25 | 4 | 0 | 2 | 6 | 20 | 2 | 0 | 1 | 4 | 6 | <1 | 0 | <<1 | 3 | 5 | <1 | 0 | <<1 | 2 | 2 | <1 | 0 | <<1 |
| $sZ_3$ | 1 | 4 | 14 | 2 | 8 | 1 | 3 | 6 | 1 | 4 | <1 | 1 | 1 | <<1 | <1 | <1 | 1 | 1 | <<1 | <1 | <1 | <1 | <1 | <<1 | <<1 |
| $zS_n$ | <<1 | 1 | 9 | 0 | 3 | <<1 | 1 | 4 | 0 | 2 | <<1 | <1 | 1 | 0 | <<1 | <<1 | <1 | 1 | 0 | <<1 | <<1 | <<1 | <1 | 0 | <<1 |
| $sZ_n$ | <<1 | 0 | 11 | 4 | 5 | <<1 | 0 | 5 | 2 | 3 | <<1 | 0 | 1 | <1 | <<1 | <<1 | 0 | 1 | <1 | <<1 | <<1 | 0 | <1 | <<1 | <<1 |
| other | <<1 | <1 | 3 | 1 | 0 | <<1 | <<1 | 1 | 1 | 0 | <<1 | <<1 | <1 | <<1 | 0 | <<1 | <<1 | <1 | <<1 | 0 | <<1 | <<1 | <<1 | <<1 | 0 |
| total zS | 98 | 86 | 39 | 4 | 53 | 90 | 70 | 17 | 2 | 28 | 59 | 22 | 3 | <1 | 1 | 48 | 18 | 2 | <1 | 1 | 23 | 8 | 2 | <<1 | <1 |
| total sZ | 3 | 15 | 58 | 95 | 47 | 2 | 12 | 25 | 60 | 25 | 1 | 4 | 4 | 4 | 1 | 1 | 3 | 4 | 3 | 1 | 1 | 1 | 2 | 1 | <1 |

**Table 26 (above) and graph 27 (below).**

Distribution of the compositions of plied cordage from contexts dated to the 5th-6th cad, in percentage of plies of a material (Ai-v), in percentage of the total quantity of a material regardless composition (Bi-v), in percentage of the total quantity of plies from the trench regardless material (Ci-v), in percentage of the total quantity of all compositions from the trench regardless material (Di-v) and in percentage of the total quantity of cordage from the site regardless twist, composition and material (Ei-v). ($_n$>3). For key see table 24. The graph shows the data of Ai-v, table 26.
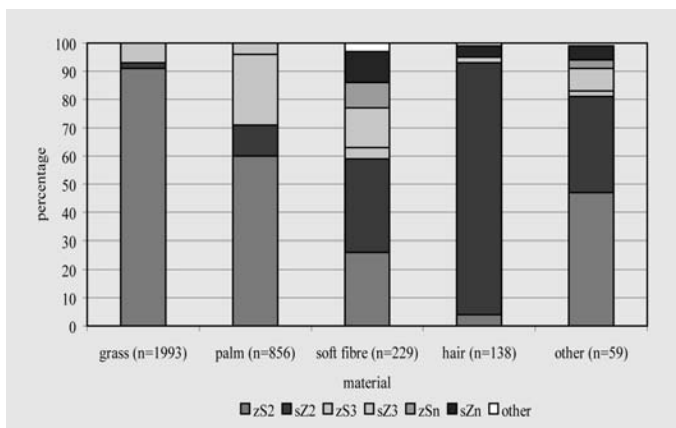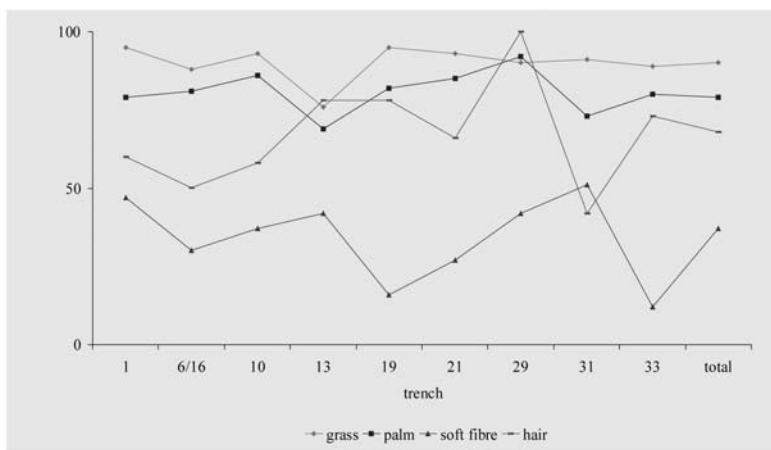
**Graph 28.**
Plied cordage, per material, in percent of the total quantity of cordage per trench to show the importance of plied cordage and its fluctuations per trench.

| | TWIST | COMPOSITION | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|
| | | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | |
| cables | $sS[Z]$ | $sS_2[Z_3]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | | $sS_3[Z_2]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | | $sS_n[Z_2]$ | 0 | 0 | 2 | 0 | 0 | 2 |
| | $zZ[S]$ | $zZ_n[S_2]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | $sZ[S]$ | $sZ_2[S_2]$ | 2 | 3 | 13 | 26 | 2 | 46 |
| | | $sZ_2[S_3]$ | 0 | 1 | 0 | 1 | 0 | 2 |
| | | $sZ_3[S_2]$ | 0 | 0 | 1 | 1 | 0 | 2 |
| | | $sZ_n[S_2]$ | 0 | 0 | 4 | 0 | 0 | 4 |
| | $zS[Z]$ | $zS_2[Z_2]$ | 14 | 23 | 6 | 0 | 20 | 63 |
| | | $zS_2[Z_3]$ | 16 | 12 | 1 | 0 | 0 | 29 |
| | | $zS_2[Z_n]$ | 0 | 3 | 0 | 0 | 0 | 3 |
| | | $zS_3[Z_2]$ | 2 | 7 | 1 | 0 | 5 | 15 |
| | | $zS_3[Z_3]$ | 2 | 3 | 2 | 0 | 0 | 7 |
| | | $zS_n[Z_2]$ | 0 | 0 | 8 | 0 | 0 | 8 |
| | $sZ[Z]$ | $sZ_2[Z_2]$ | 0 | 1 | 3 | 1 | 0 | 5 |
| | | $sZ_2[Z_n]$ | 0 | 0 | 3 | 0 | 0 | 3 |
| | | $sZ_3[Z_2]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | | $sZ_n[Z_2]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | $zS[S]$ | $zS_2[S_2]$ | 11 | 6 | 1 | 0 | 0 | 18 |
| | | $zS_3[S_2]$ | 0 | 1 | 1 | 0 | 0 | 2 |
| double cable | $sZ[S]\{Z\}$ | $sZ_2[S_2]\{Z_2\}$ | 0 | 0 | 2 | 2 | 0 | 4 |
| | | $sZ_2[S_3]\{Z_2\}$ | 0 | 0 | 0 | 1 | 0 | 1 |
| | $sZ[Z]\{S\}$ | $sZ_2[Z_2]\{S_2\}$ | 0 | 0 | 0 | 1 | 0 | 1 |
| | $sZ[Z]\{Z\}$ | $sZ_2[Z_2]\{Z_2\}$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | $zS[S]\{Z\}$ | $zS_2[S_2]\{Z_2\}$ | 0 | 1 | 0 | 0 | 0 | 1 |
| | $zS[S]\{S\}$ | $zS_2[S_2]\{S_2\}$ | 0 | 1 | 0 | 0 | 0 | 1 |
| | $zZ[S]\{S\}$ | $zZ_2[S_2]\{S_2\}$ | 0 | 0 | 1 | 0 | 0 | 1 |
| total alternating | | | 36 | 53 | 38 | 31 | 27 | 185 |
| total non-alternating | | | 11 | 9 | 17 | 2 | 0 | 39 |
| total trench | | | 47 | 62 | 55 | 33 | 27 | 224 |
| % of total trench | | | **21** | 28 | 25 | 15 | 12 | 100 |

**Table 29.**

Cabled cordage and the variety of twist and composition, quantified per material, found in trench BE94/95-01. Key: Twenty-one percent (**bold**) of the total quantity of 224 pieces of cabled cordage from trench BE94/95-01 was made of grass. The row '% of total trench' shows the percentage cables of a material from the total quantity of cables from that trench. ($_n$>3).

| | TWIST | COMPOSITION | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|
| | | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | |
| cable | $sZ[S]$ | $sZ_2[S_2]$ | 0 | 3 | 1 | 12 | 0 | 16 |
| | | $sZ_n[S_2]$ | 0 | 0 | 5 | 0 | 0 | 5 |
| | | $sZ_n[S_3]$ | 0 | 0 | 2 | 0 | 0 | 2 |
| | | $sZ_n[S_n]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | $zS[Z]$ | $zS_2[Z_2]$ | 15 | 6 | 0 | 0 | 0 | 21 |
| | | $zS_2[Z_3]$ | 0 | 0 | 0 | 0 | 3 | 3 |
| | | $zS_3[Z_2]$ | 2 | 0 | 0 | 0 | 0 | 2 |
| | | $zS_3[Z_3]$ | 0 | 2 | 0 | 0 | 0 | 2 |
| | | $zS_n[Z_2]$ | 0 | 0 | 8 | 0 | 0 | 8 |
| | $sZ[Z]$ | $sZ_2[Z_2]$ | 0 | 0 | 0 | 3 | 1 | 4 |
| | | $sZ_2[Z_3]$ | 0 | 0 | 0 | 0 | 1 | 1 |
| | | $sZ_n[Z_2]$ | 0 | 0 | 3 | 0 | 0 | 3 |
| | $zS[S]$ | $zS_2[S_2]$ | 0 | 1 | 0 | 0 | 0 | 1 |
| | | $zS_2[S_n]$ | 1 | 0 | 0 | 0 | 0 | 1 |
| double cable | $sZ[S]\{Z\}$ | $sZ_2[S_2]\{Z_2\}$ | 0 | 0 | 0 | 1 | 0 | 1 |
| | | $sZ_2[S_3]\{Z_2\}$ | 0 | 0 | 0 | 1 | 0 | 1 |
| | $sZ[I]\{S\}$ | $sZ_2[I_2]\{S_2\}$ | 0 | 0 | 0 | 1 | 0 | 1 |
| | $sZ[Z]\{S\}$ | $sZ_2[Z_2]\{S_2\}$ | 0 | 0 | 0 | 1 | 0 | 1 |
| | $zS[Z]\{S\}$ | $zS_2[Z_2]\{S_2\}$ | 2 | 0 | 2 | 0 | 0 | 4 |
| | $zS[S]\{S\}$ | $zS_2[S_2]\{S_n\}$ | 0 | 0 | 1 | 0 | 0 | 1 |
| total alternating | | | 19 | 11 | 19 | 14 | 3 | 66 |
| total non-alternating | | | 1 | 1 | 4 | 5 | 2 | 13 |
| total trench | | | 20 | 12 | 23 | 19 | 5 | 79 |
| % of total trench | | | 25 | 15 | 29 | 24 | 6 | 100 |

**Table 30.**

Cabled cordage and the variety of twist and composition, quantified per material, found in trench BE6/16. ($_n$>3). For key see table 29.

| | TWIST  COMPOSITION | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | TOTAL |
|---|---|---|---|---|---|---|---|---|
| cable | sZ[S] | $sZ_2[S_2]$ | 1 | 1 | 7 | 11 | 0 | 20 |
| | | $sZ_n[S_2]$ | 0 | 0 | 4 | 0 | 0 | 4 |
| | zS[Z] | $zS_2[Z_2]$ | 12 | 10 | 3 | 0 | 2 | 27 |
| | | $zS_2[Z_3]$ | 1 | 1 | 0 | 0 | 0 | 2 |
| | | $zS_3[Z_2]$ | 2 | 6 | 0 | 0 | 1 | 9 |
| | | $zS_n[Z_2]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | sZ[Z] | $sZ_2[Z_2]$ | 0 | 0 | 3 | 0 | 0 | 3 |
| | | $sZ_2[Z_n]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | zS[S] | $zS_2[S_2]$ | 3 | 0 | 1 | 0 | 0 | 4 |
| | | $zS_2[S_3]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | | $zS_n[S_2]$ | 0 | 0 | 2 | 0 | 0 | 2 |
| double cable | sZ[S]{Z} | $sZ_2[S_2]\{Z_2\}$ | 0 | 1 | 0 | 0 | 0 | 1 |
| | sZ[Z]{S} | $sZ_2[Z_2]\{S_2\}$ | 0 | 0 | 0 | 0 | 1 | 1 |
| | zS[Z]{S} | $zS_2[Z_2]\{S_2\}$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | zS[S]{Z} | $zS_2[S_2]\{Z_2\}$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | | $zS_n[S_2]\{Z_2\}$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | zS[S]{S} | $zS_2[S_2]\{S_2\}$ | 0 | 0 | 1 | 0 | 0 | 1 |
| total alternating | | | 16 | 19 | 16 | 11 | 3 | 65 |
| total non-alternating | | | 3 | 0 | 11 | 0 | 1 | 15 |
| total trench | | | 19 | 19 | 27 | 11 | 4 | 80 |
| % of total trench | | | 24 | 24 | 34 | 14 | 5 | 100 |

**Table 31.**
Cabled cordage and the variety of twist and composition, quantified per material, found in trench BE96/…-10. ($_n$>3). For key see table 29.

| | TWIST | COMPOSITION | MATERIAL | | | | | TOTAL |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | |
| Cable | sS[Z] | $sS_2[Z_2]z$ | 0 | 1 | 0 | 0 | 0 | 1 |
| | zZ[S] | $zZ_n[S_2]$ | 0 | 0 | 5 | 0 | 0 | 5 |
| | sZ[S] | $sZ_2[S_2]$ | 9 | 8 | 1 | 9 | 0 | 27 |
| | | $sZ_2[S_3]$ | 0 | 0 | 0 | 1 | 0 | 1 |
| | | $sZ_2[S_n]$ | 0 | 0 | 0 | 6 | 0 | 6 |
| | | $sZ_3[S_3]$ | 0 | 0 | 5 | 0 | 0 | 5 |
| | | $sZ_n[S_2]$ | 0 | 0 | 2 | 0 | 0 | 2 |
| | zS[Z] | $zS_2[Z_2]$ | 29 | 6 | 10 | 0 | 2 | 47 |
| | | $zS_2[Z_3]$ | 10 | 3 | 0 | 1 | 0 | 14 |
| | | $zS_2[Z_n]$ | 2 | 0 | 0 | 0 | 0 | 2 |
| | | $zS_3[Z_2]$ | 1 | 2 | 1 | 0 | 0 | 4 |
| | | $zS_3[Z_3]$ | 5 | 6 | 0 | 0 | 1 | 12 |
| | | $zS_n[Z_2]$ | 0 | 0 | 10 | 0 | 1 | 11 |
| | | $zS_n[Z_3]$ | 0 | 0 | 2 | 0 | 0 | 2 |
| | | $zS_n[Z_n]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | sZ[Z] | $sZ_2[Z_2]$ | 0 | 0 | 0 | 2 | 0 | 2 |
| | | $sZ_3[Z_2]$ | 0 | 0 | 2 | 0 | 0 | 2 |
| | zS[S] | $zS_2[S_2]$ | 2 | 0 | 1 | 0 | 0 | 3 |
| | | $zS_2[S_3]$ | 0 | 0 | 0 | 0 | 1 | 1 |
| | | $zS_n[S_2]$ | 0 | 0 | 4 | 0 | 0 | 4 |
| double cable | sZ[S]{Z} | $sZ_2[S_2]\{Z_2\}$ | 0 | 0 | 0 | 2 | 0 | 2 |
| | | $sZ_2[S_n]\{Z_2\}$ | 0 | 0 | 0 | 0 | 2 | 2 |
| | | $sZ_3[S_2]\{Z_2\}$ | 0 | 0 | 0 | 0 | 1 | 1 |
| | sZ[Z]{S} | $sZ_2[Z_2]\{S_2\}$ | 0 | 0 | 0 | 2 | 1 | 3 |
| | | $sZ_2[Z_3]\{S_3\}$ | 0 | 0 | 2 | 0 | 0 | 2 |
| | sZ[S]{S} | $sZ_2[S_2]\{S_n\}$ | 0 | 0 | 0 | 1 | 0 | 1 |
| | zS[Z]{S} | $zS_2[Z_2]\{S_2\}$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | zS[S]{Z} | $zS_2[S_n]\{Z_2\}$ | 0 | 0 | 1 | 0 | 0 | 1 |
| total alternating | | | 56 | 25 | 33 | 19 | 7 | 140 |
| total non-alternating | | | 2 | 1 | 15 | 5 | 2 | 25 |
| total trench | | | 58 | 26 | 48 | 24 | 9 | 165 |
| % of total trench | | | 35 | 16 | 29 | 15 | 5 | 100 |

**Table 32.**
Cabled cordage and the variety of twist and composition, quantified per material, found in trench BE96/97-13. ($_n$>3). For key see table 29.

| CONTEXT | | | MATERIAL | | | TOTAL |
|---|---|---|---|---|---|---|
| | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | |
| BE97/98-19 | 14 | 10 | 70 | 9 | 0 | 103 |
| % of total trench | 14 | 10 | 68 | 9 | 0 | 100 |
| BE98-21 | 44 | 42 | 17 | 10 | 14 | 127 |
| % of total trench | 35 | 33 | 13 | 8 | 11 | 100 |

**Table 33.**
Cabled cordage, quantified per material, found in trenches BE97/98-19 and BE98-21. For key see table 29.

| | TWIST | COMPOSITION | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|
| | | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | |
| cable | sZ[S] | $sZ_2[S_2]$ | 0 | 0 | 2 | 0 | 0 | 2 |
| | | $sZ_n[S_2]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | zS[Z] | $zS_2[Z_2]$ | 2 | 1 | 1 | 0 | 0 | 4 |
| | | $zS_2[Z_3]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | | $zS_3[Z_3]$ | 8 | 4 | 0 | 0 | 1 | 13 |
| | | $zS_n[Z_2]$ | 0 | 0 | 6 | 0 | 0 | 1 |
| | | $zS_n[Z_3]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | sZ[Z] | $sZ_2[Z_2]$ | 0 | 1 | 0 | 0 | 0 | 1 |
| | zS[S] | $zS_3[S_2]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | | $zS_n[S_2]$ | 0 | 0 | 7 | 0 | 0 | 7 |
| double cable | zS[Z]{Z} | $zS_2[Z_3]\{Z_2\}$ | 0 | 0 | 3 | 0 | 0 | 3 |
| | zS[Z]{S} | $zS_n[Z_2]\{S_2\}$ | 0 | 0 | 1 | 0 | 0 | 1 |
| total alternating | | | 10 | 6 | 13 | 0 | 1 | 30 |
| total non-alternating | | | 0 | 0 | 11 | 0 | 0 | 11 |
| total trench | | | 10 | 6 | 24 | 0 | 1 | 41 |
| % of total trench | | | 24 | 15 | 59 | 0 | 2 | 100 |

**Table 34.**
Cabled cordage and the variety of twist and composition, quantified per material, found in trench BE99-29. ($_n$>3). For key see table 29.

| | TWIST | COMPOSITION | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|
| | | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | |
| cable | zZ[S] | $zZ_3[S_2]$ | 0 | 0 | 2 | 0 | 0 | 2 |
| | | $zZ_n[S_2]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | sZ[S] | $sZ_2[S_2]$ | 4 | 6 | 1 | 12 | 1 | 24 |
| | | $sZ_2[S_3]$ | 0 | 1 | 0 | 1 | 0 | 2 |
| | | $sZ_2[S_n]$ | 0 | 0 | 1 | 1 | 0 | 2 |
| | | $sZ_n[S_2]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | zS[Z] | $zS_2[Z_2]$ | 17 | 9 | 5 | 4 | 1 | 36 |
| | | $zS_2[Z_3]$ | 5 | 13 | 0 | 0 | 3 | 21 |
| | | $zS_2[Z_n]$ | 2 | 0 | 0 | 0 | 0 | 2 |
| | | $zS_3[Z_2]$ | 1 | 1 | 0 | 1 | 0 | 3 |
| | | $zS_3[Z_3]$ | 0 | 20 | 0 | 0 | 0 | 20 |
| | | $zS_n[Z_2]$ | 1 | 0 | 10 | 0 | 0 | 11 |
| | | $zS_n[Z_3]$ | 0 | 0 | 2 | 0 | 4 | 6 |
| | | $zS_n[Z_n]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | zI[S] | $zI_n[S_2]$ | 0 | 0 | 5 | 0 | 0 | 5 |
| | | $zI_n[S_3]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | sZ[Z] | $sZ_2[Z_2]$ | 0 | 0 | 0 | 2 | 0 | 2 |
| | | $sZ_3[Z_3]$ | 0 | 0 | 0 | 1 | 0 | 1 |
| | | $sZ_n[Z_2]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | zS[S] | $zS_2[S_2]$ | 0 | 1 | 0 | 0 | 0 | 1 |
| | | $zS_2[S_3]$ | 0 | 6 | 0 | 0 | 0 | 6 |
| | | $zS_n[S_2]$ | 0 | 0 | 2 | 0 | 0 | 2 |
| double cable | sZ[S]{Z} | $sZ_2[S_2]\{Z_2\}$ | 0 | 0 | 0 | 1 | 0 | 1 |
| | | $sZ_2[S_2]\{Z_3\}$ | 0 | 0 | 0 | 1 | 0 | 1 |
| | zS[S]{Z} | $zS_2[S_2]\{Z_2\}$ | 1 | 0 | 0 | 0 | 0 | 1 |
| | | $zS_2[S_n]\{Z_2\}$ | 3 | 0 | 0 | 0 | 0 | 3 |
| | | $zS_n[S_2]\{Z_2\}$ | 0 | 0 | 1 | 0 | 0 | 1 |
| total alternating | | | 30 | 50 | 21 | 21 | 9 | 131 |
| total non-alternating | | | 4 | 7 | 13 | 3 | 0 | 27 |
| total trench | | | 34 | 57 | 34 | 24 | 9 | 158 |
| % of total trench | | | 22 | 36 | 22 | 15 | 6 | 100 |

**Table 35.**
Cabled cordage and the variety of twist and composition, quantified per material, found in trench BE99-31. ($_n$>3). For key see table 29.

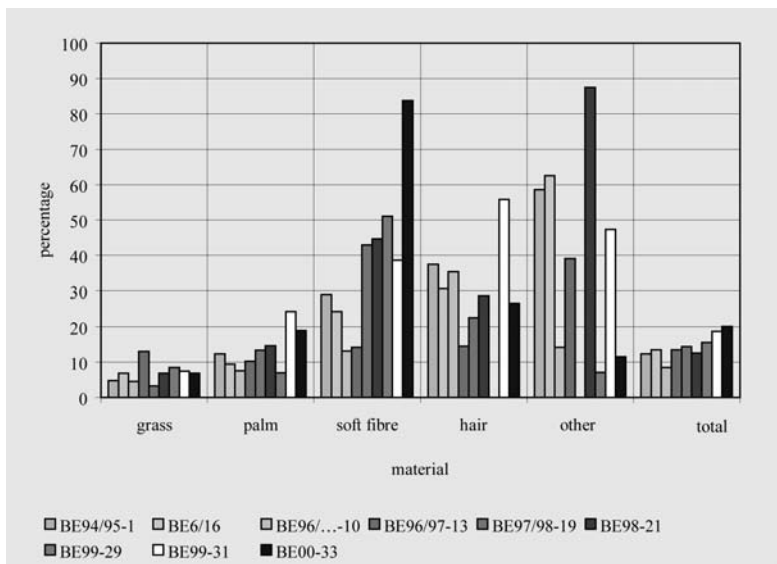| | TWIST | COMPOSITION | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | TOTAL |
|---|---|---|---|---|---|---|---|---|
| cable | $sS[Z]$ | $sS_n[Z_2]$ | 0 | 0 | 3 | 0 | 0 | 3 |
| | $zZ[S]$ | $zZ_2[S_2]$ | 0 | 0 | 2 | 0 | 0 | 2 |
| | | $zZ_n[S_2]$ | 0 | 0 | 7 | 0 | 0 | 7 |
| | | $zZ_n[S_3]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | | $zZ_n[S_n]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | $sZ[S]$ | $sZ_2[S_2]$ | 3 | 2 | 0 | 15 | 0 | 20 |
| | | $sZ_2[S_3]$ | 0 | 0 | 0 | 0 | 1 | 1 |
| | | $sZ_2[S_n]$ | 0 | 0 | 2 | 2 | 0 | 4 |
| | | $sZ_3[S_2]$ | 0 | 1 | 0 | 0 | 0 | 1 |
| | $zS[Z]$ | $zS_2[Z_2]$ | 13 | 7 | 12 | 0 | 0 | 32 |
| | | $zS_2[Z_3]$ | 8 | 4 | 2 | 0 | 0 | 14 |
| | | $zS_2[Z_n]$ | 3 | 3 | 1 | 0 | 0 | 7 |
| | | $zS_3[Z_2]$ | 0 | 2 | 2 | 0 | 0 | 4 |
| | | $zS_3[Z_3]$ | 3 | 25 | 0 | 0 | 2 | 30 |
| | | $zS_3[Z_n]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | | $zS_n[Z_2]$ | 0 | 0 | 22 | 0 | 0 | 22 |
| | | $zS_n[Z_3]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | | $zS_n[Z_n]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | $sZ[Z]$ | $sZ_n[Z_2]$ | 1 | 0 | 0 | 0 | 0 | 1 |
| | $zS[S]$ | $zS_2[S_2]$ | 2 | 0 | 2 | 0 | 0 | 4 |
| | | $zS_n[S_2]$ | 0 | 0 | 7 | 0 | 0 | 7 |
| | | $zS_n[S_3]$ | 0 | 0 | 3 | 0 | 0 | 3 |
| | $sI[Z]$ | $sI_n[Z_2]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | $zI[Z]$ | $zIn[Z2]$ | 0 | 0 | 5 | 0 | 0 | 5 |
| | $zI[S]$ | $zI_2[S_2]$ | 2 | 0 | 0 | 0 | 0 | 2 |
| | | $zI_3[S_2]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | | $zI_n[S_2]$ | 0 | 0 | 8 | 0 | 0 | 8 |
| double cable | $sZ[S]\{Z\}$ | $sZ_2[S_2]\{Z_2\}$ | 0 | 0 | 0 | 2 | 0 | 2 |
| | | $sZ_2[S_n]\{Z_2\}$ | 0 | 0 | 0 | 1 | 0 | 1 |
| | $zS[Z]\{Z\}$ | $zS_n[Z_2]\{Z_2\}$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | | $zS_n[Z_2]\{Z_3\}$ | 0 | 0 | 2 | 0 | 0 | 2 |
| total alternating | | | 30 | 44 | 44 | 20 | 3 | 141 |
| total non-alternating | | | 5 | 0 | 44 | 0 | 0 | 49 |
| total trench | | | 35 | 44 | 88 | 20 | 3 | 190 |
| % of total trench | | | 18 | 23 | 46 | 11 | 2 | 100 |

**Table 36.**
Cabled cordage and the variety of twist and composition, quantified per material, found in trench BE00-33. ($_n$>3). For key see table 29.

| TRENCH | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|
| | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | |
| BE94/95-1 | **5** | 12 | 29 | 38 | 59 | **12** |
| BE6/16 | 7 | 9 | 24 | 31 | 63 | 14 |
| BE96/…-10 | 5 | 8 | 13 | 35 | 14 | 9 |
| BE96/97-13 | 13 | 10 | 14 | 15 | 39 | 13 |
| BE97/98-19 | 3 | 13 | 43 | 23 | 0 | 14 |
| BE98-21 | 7 | 15 | 45 | 29 | 88 | 13 |
| BE99-29 | 9 | 7 | 51 | 0 | 7 | 16 |
| BE99-31 | 7 | 24 | 39 | 56 | 47 | 19 |
| BE00-33 | 7 | 19 | 84 | 27 | 12 | 20 |

**Table 37 (above) and graph 38 (below).**
Occurrence of cabled cordage per trench, in percentages of the total quantity of a certain material and in percentages of the total quantity of cordage. Percentages are calculated from the data of table 1-19 (quantity of cordage per material) and table 29-36. Key: Five percent (**bold** in table 37) of all cordage made of grass found in trench BE94/95-01 was cabled. Twelve percent (**bold** in table 37) of all cordage (i.e. regardless twist, composition and material) found in trench BE94/95-01 was cabled. The graph shows the percentage cabled cordage of a material and of the total quantity (per trench).

| | TWIST | COMPOSITION | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | TOTAL |
|---|---|---|---|---|---|---|---|---|
| Cables | sS[Z] | sS$_2$[Z$_2$] | 0 | 1 | 0 | 0 | 0 | 1 |
| | | sS$_2$[Z$_3$] | 0 | 0 | 1 | 0 | 0 | 1 |
| | | sS$_3$[Z$_2$] | 0 | 0 | 1 | 0 | 0 | 1 |
| | | sS$_n$[Z$_2$] | 0 | 0 | 5 | 0 | 0 | 5 |
| | zZ[S] | zZ$_2$[S$_2$] | 0 | 0 | 2 | 0 | 0 | 2 |
| | | zZ$_3$[S$_2$] | 0 | 0 | 2 | 0 | 0 | 2 |
| | | zZ$_n$[S$_2$] | 0 | 0 | 14 | 0 | 0 | 14 |
| | | zZ$_n$[S$_3$] | 0 | 0 | 1 | 0 | 0 | 1 |
| | | zZ$_n$[S$_n$] | 0 | 0 | 1 | 0 | 0 | 1 |
| | sZ[S] | sZ$_2$[S$_2$] | 19 | 24 | 26 | 86 | 3 | 158 |
| | | sZ$_2$[S$_3$] | 0 | 2 | 0 | 3 | 1 | 6 |
| | | sZ$_2$[S$_n$] | 0 | 0 | 3 | 9 | 0 | 12 |
| | | sZ$_3$[S$_2$] | 0 | 1 | 4 | 1 | 0 | 6 |
| | | sZ$_3$[S$_3$] | 0 | 0 | 5 | 0 | 0 | 5 |
| | | sZ$_n$[S$_2$] | 0 | 0 | 20 | 0 | 0 | 20 |
| | | sZ$_n$[S$_3$] | 0 | 0 | 2 | 0 | 0 | 2 |
| | | sZ$_n$[S$_n$] | 0 | 0 | 1 | 0 | 0 | 1 |
| | zS[Z] | zS$_2$[Z$_2$] | 102 | 63 | 42 | 5 | 25 | 237 |
| | | zS$_2$[Z$_3$] | 40 | 34 | 4 | 1 | 8 | 87 |
| | | zS$_2$[Z$_n$] | 7 | 6 | 1 | 0 | 0 | 14 |
| | | zS$_3$[Z$_2$] | 8 | 18 | 5 | 0 | 7 | 38 |
| | | zS$_3$[Z$_3$] | 18 | 65 | 2 | 1 | 4 | 90 |
| | | zS$_3$[Z$_n$] | 0 | 0 | 1 | 0 | 0 | 1 |
| | | zS$_n$[Z$_2$] | 1 | 0 | 70 | 0 | 1 | 72 |
| | | zS$_n$[Z$_3$] | 0 | 0 | 6 | 0 | 4 | 10 |
| | | zS$_n$[Z$_n$] | 0 | 0 | 3 | 0 | 0 | 3 |
| | sZ[Z] | sZ$_2$[Z$_2$] | 0 | 2 | 14 | 9 | 2 | 27 |
| | | sZ$_2$[Z$_3$] | 0 | 0 | 0 | 0 | 1 | 1 |
| | | sZ$_2$[Z$_n$] | 0 | 0 | 4 | 0 | 0 | 4 |
| | | sZ$_3$[Z$_2$] | 0 | 0 | 3 | 0 | 0 | 3 |
| | | sZ$_3$[Z$_3$] | 0 | 0 | 0 | 1 | 0 | 1 |
| | | sZ$_n$[Z$_2$] | 1 | 0 | 5 | 0 | 0 | 6 |
| | zS[S] | zS$_2$[S$_2$] | 18 | 8 | 8 | 0 | 0 | 34 |
| | | zS$_2$[S$_3$] | 0 | 6 | 2 | 0 | 1 | 9 |
| | | zS$_2$[S$_n$] | 1 | 0 | 0 | 0 | 0 | 1 |
| | | zS$_3$[S$_2$] | 0 | 1 | 5 | 0 | 0 | 6 |
| | | zS$_n$[S$_2$] | 0 | 0 | 22 | 0 | 0 | 22 |
| | | zS$_n$[S$_3$] | 0 | 0 | 3 | 0 | 0 | 3 |
| | sI[Z] | sI$_n$[Z$_2$] | 0 | 0 | 1 | 0 | 0 | 1 |
| | zI[Z] | zI$_n$[Z$_2$] | 0 | 0 | 5 | 0 | 0 | 5 |
| | zI[S] | zI$_2$[S$_2$] | 2 | 0 | 0 | 0 | 0 | 2 |
| | | zI$_3$[S$_2$] | 0 | 0 | 1 | 0 | 0 | 1 |
| | | zI$_n$[S$_2$] | 0 | 0 | 13 | 0 | 0 | 13 |
| | | zI$_n$[S$_3$] | 0 | 0 | 1 | 0 | 0 | 1 |
| double cable (A) | | | 6 | 3 | 25 | 19 | 7 | 60 |
| trench BE97/98-19 (B) | | | 14 | 10 | 70 | 9 | 14 | 117 |
| trench BE98-21 (C) | | | 44 | 42 | 17 | 10 | 0 | 113 |
| total alternating | | | 195 | 213 | 195 | 106 | 53 | 762 |
| total non-alternating | | | 22 | 18 | 114 | 10 | 4 | 168 |
| subtotal (= total minus (A), (B), (C)) | | | 217 | 231 | 309 | 116 | 57 | 930 |
| total | | | 281 | 286 | 421 | 154 | 78 | 1220 |
| % of total site | | | 23 | 23 | 35 | 13 | 6 | 100 |
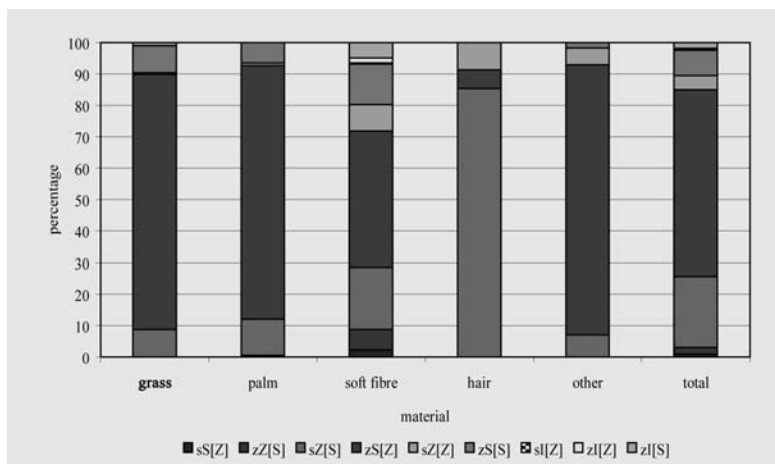
**Table 39 (p. 86) and graph 40.**

Cabled cordage and the variety of twist and composition, quantified per material, recovered from Berenike. Key: Twenty-three percent (**bold** in table 39) of the total quantity of 1220 pieces of cabled cordage from the site was cabled cordage made of grass. ($_n$>3).

Graph 40 (based on table 39) shows the distribution of twist and composition per material (of the subtotal).

| TWIST | | COMPOSITION | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|
| | | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | |
| cables | sS[Z] | $sS_2[Z_2]$ | 0 | 1 | 0 | 0 | 0 | 1 |
| | | $sS_n[Z_2]$ | 0 | 0 | 3 | 0 | 0 | 3 |
| | zZ[S] | $zZ_2[S_2]$ | 0 | 0 | 2 | 0 | 0 | 2 |
| | | $zZ_3[S_2]$ | 0 | 0 | 2 | 0 | 0 | 2 |
| | | $zZ_n[S_2]$ | 0 | 0 | 12 | 0 | 0 | 12 |
| | | $zZ_n[S_3]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | | $zZ_n[S_n]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | sZ[S] | $sZ_2[S_2]$ | 17 | 16 | 4 | 38 | 1 | 76 |
| | | $sZ_2[S_3]$ | 0 | 1 | 0 | 2 | 1 | 4 |
| | | $sZ_2[S_n]$ | 0 | 0 | 3 | 9 | 0 | 12 |
| | | $sZ_3[S_2]$ | 0 | 1 | 0 | 0 | 0 | 1 |
| | | $sZ_3[S_3]$ | 1 | 0 | 5 | 0 | 0 | 6 |
| | | $sZ_n[S_2]$ | 0 | 0 | 3 | 0 | 0 | 3 |
| | zS[Z] | $zS_2[Z_2]$ | 61 | 23 | 33 | 4 | 4 | 125 |
| | | $zS_2[Z_3]$ | 28 | 24 | 3 | 1 | 3 | 59 |
| | | $zS_2[Z_n]$ | 8 | 3 | 1 | 0 | 1 | 13 |
| | | $zS_3[Z_2]$ | 1 | 5 | 7 | 1 | 0 | 14 |
| | | $zS_3[Z_3]$ | 17 | 55 | 0 | 0 | 3 | 75 |
| | | $zS_3[Z_n]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | | $zS_n[Z_2]$ | 1 | 0 | 52 | 0 | 1 | 54 |
| | | $zS_n[Z_3]$ | 0 | 0 | 4 | 0 | 4 | 8 |
| | | $zS_n[Z_n]$ | 0 | 0 | 4 | 0 | 0 | 4 |
| | sZ[Z] | $sZ_2[Z_2]$ | 0 | 1 | 0 | 4 | 0 | 5 |
| | | $sZ_2[Z_3]$ | 0 | 0 | 0 | 1 | 0 | 1 |
| | | $sZ_3[Z_2]$ | 0 | 0 | 2 | 0 | 0 | 2 |
| | | $sZ_n[Z_2]$ | 1 | 0 | 1 | 0 | 0 | 2 |
| | zS[S] | $zS_2[S_2]$ | 4 | 1 | 2 | 0 | 0 | 7 |
| | | $zS_2[S_3]$ | 0 | 6 | 1 | 0 | 1 | 8 |
| | | $zS_3[S_2]$ | 0 | 0 | 4 | 0 | 0 | 4 |
| | | $zS_n[S_2]$ | 0 | 0 | 24 | 0 | 0 | 24 |
| | | $zS_n[S_3]$ | 0 | 0 | 3 | 0 | 0 | 3 |
| | sI[Z] | $sI_n[Z_2]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | zI[Z] | $zI_n[Z_2]$ | 0 | 0 | 5 | 0 | 0 | 5 |
| | zI[S] | $zI_2[S_2]$ | 2 | 0 | 0 | 0 | 0 | 2 |
| | | $zI_3[S_2]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | | $zI_n[S_2]$ | 0 | 0 | 13 | 0 | 0 | 13 |
| | | $zI_n[S_3]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| double cable (A) | | | 4 | 0 | 13 | 12 | 4 | 33 |
| other (B) | | | 3 | 7 | 60 | 4 | 1 | 75 |
| total alternating | | | 134 | 128 | 120 | 55 | 18 | 455 |
| total non-alternating | | | 7 | 9 | 79 | 5 | 1 | 101 |
| subtotal (= total minus (A), (B)) | | | 141 | 137 | 199 | 60 | 19 | 556 |
| total | | | 148 | 144 | 272 | 76 | 24 | 664 |

**Table 41.**

Cabled cordage and the variety of twist and composition, quantified per material, recovered from contexts dated to the 1st cad. ($_n$>3). For key see table 29.

| | TWIST | COMPOSITION | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | TOTAL |
|---|---|---|---|---|---|---|---|---|
| cables | $sS[Z]$ | $sS_3[Z_2]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | | $sS_n[Z_2]$ | 0 | 0 | 2 | 0 | 0 | 2 |
| | $zZ[S]$ | $zZ_n[S_2]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | $sZ[S]$ | $sZ_2[S_2]$ | 3 | 8 | 18 | 39 | 2 | 70 |
| | | $sZ_2[S_3]$ | 0 | 1 | 0 | 0 | 0 | 1 |
| | | $sZ_3[S_2]$ | 0 | 0 | 3 | 1 | 0 | 4 |
| | | $sZ_n[S_2]$ | 0 | 0 | 13 | 0 | 0 | 13 |
| | | $sZ_n[S_3]$ | 0 | 0 | 1 | 1 | 0 | 2 |
| | | $sZ_n[S_n]$ | 0 | 0 | 1 | 0 | 0 | 1 |
| | $zS[Z]$ | $zS_2[Z_2]$ | 36 | 32 | 11 | 0 | 21 | 100 |
| | | $zS_2[Z_3]$ | 17 | 14 | 1 | 0 | 5 | 37 |
| | | $zS_2[Z_n]$ | 0 | 3 | 0 | 0 | 0 | 3 |
| | | $zS_3[Z_2]$ | 5 | 8 | 1 | 0 | 3 | 17 |
| | | $zS_3[Z_3]$ | 0 | 6 | 2 | 0 | 0 | 8 |
| | | $zS_n[Z_2]$ | 0 | 0 | 15 | 0 | 0 | 15 |
| | $sZ[Z]$ | $sZ_2[Z_2]$ | 0 | 0 | 13 | 2 | 0 | 15 |
| | | $sZ_2[Z_3]$ | 0 | 0 | 0 | 1 | 0 | 1 |
| | | $sZ_2[Z_n]$ | 0 | 0 | 4 | 0 | 0 | 4 |
| | | $sZ_n[Z_2]$ | 0 | 0 | 4 | 0 | 0 | 4 |
| | $zS[S]$ | $zS_2[S_2]$ | 14 | 5 | 4 | 0 | 0 | 23 |
| | | $zS_2[S_3]$ | 0 | 1 | 1 | 0 | 0 | 2 |
| | | $zS_2[S_n]$ | 1 | 0 | 0 | 0 | 0 | 1 |
| | | $zS_3[S_2]$ | 0 | 1 | 1 | 0 | 0 | 2 |
| | | $zS_n[S_2]$ | 0 | 0 | 2 | 0 | 0 | 2 |
| double cable (A) | | | 2 | 4 | 12 | 8 | 0 | 26 |
| other (B) | | | 41 | 38 | 17 | 8 | 13 | 117 |
| total alternating | | | 61 | 72 | 66 | 41 | 31 | 271 |
| total non-alternating | | | 15 | 7 | 33 | 3 | 0 | 58 |
| subtotal (= total minus (A), (B)) | | | 76 | 79 | 99 | 44 | 31 | 329 |
| total | | | 119 | 121 | 128 | 60 | 44 | 472 |

**Table 42.**
Cabled cordage and the variety of twist and composition, quantified per material, recovered from contexts dated to the 5th-6th cad. ($_n>3$). For key see table 29.

1 cad

| MATERIAL | GRASS (n=148) | PALM (n=144) | SOFT FIBRE (n=272) | (GOAT)HAIR (n=76) | OTHER (n=24) | TOTAL (n=664) |
|---|---|---|---|---|---|---|
| quantity material | (1943) 8 | (903) 16 | (788) **35** | (316) 24 | (99) 24 | (4049) 16 |
| cables (n=664) | 22 | 22 | **41** | 11 | 4 | 100 |

5/6 cad

| MATERIAL | GRASS (n=119) | PALM (n=121) | SOFT FIBRE (n=128) | (GOAT) HAIR (n=60) | OTHER (n=44) | TOTAL (n=472) |
|---|---|---|---|---|---|---|
| quantity material | (2148) 6 | (1043) 12 | (547) 23 | (215) 28 | (114) 39 | (4067) 12 |
| cables (n=472) | 25 | 26 | 27 | 13 | 9 | 100 |

**Table 43.**
Percentages calculated of the cabled cordage recovered from contexts dated to the 1st cad and to the 5th-6th cad. The table shows the percentage cabled cordage of a material (heading 'material') and of the total quantity of cabled cordage (heading 'cables'). Key: Thirty five percent (**bold**) of the cordage made of soft fibre, dated to the 1st cad, was cabled (272 cables out of 788 pieces) and 41% (**bold**) of the cabled cordage (regardless material) dated to the 1st cad, was made of soft fibre.

| TRENCH | MATERIAL | | | | | TOTAL (PLY/ CABLE) |
|---|---|---|---|---|---|---|
| | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | |
| | TOTAL (PLY/CABLE) | TOTAL (PLY/CABLE) | TOTAL (PLY/CABLE) | TOTAL (PLY/CABLE) | TOTAL (PLY/CABLE) | |
| BE94/95-01 | 31 (5/26) | 31 (9/22) | 0 (0/0) | 0 (0/0) | 4 (4/0) | 66 (18/48) |
| BE6/16 | 11 (5/6) | 8 (6/2) | 0 (0/0) | 1 (0/1) | 3 (0/3) | 23 (11/12) |
| BE96/…-10 | 12 (8/4) | 35 (28/7) | 0 (0/0) | 0 (0/0) | 0 (0/0) | 47 (36/11) |
| BE96/97-13 | 51 (29/22) | 22 (14/8) | 0 (0/0) | 0 (0/0) | 4 (0/4) | 77 (43/34) |
| BE97/98-19 | 8 (7/1) | 2 (2/0) | 3 (2/1) | 0 (0/0) | 1 (0/1) | 14 (11/3) |
| BE98-21 | 18 (2/16) | 12 (4/8) | 0 (0/0) | 3 (0/3) | 1 (0/1) | 34 (6/28) |
| BE99-29 | 27 (17/10) | 14 (12/2) | 0 (0/0) | 0 (0/0) | 3 (2/1) | 44 (31/13) |
| BE99-31 | 40 (26/14) | 53 (24/29) | 1 (0/1) | 1 (0/1) | 9 (2/7) | 104 (52/52) |
| BE00-33 | 33 (28/5) | 44 (23/21) | 2 (0/2) | 0 (0/0) | 6 (4/2) | 85 (55/30) |
| resttrenches | 4 (4/0) | 5 (0/5) | 0 (0/0) | 0 (0/0) | 3 (2/1) | 12 (6/6) |
| total | 235 (131/104) | 226 (122/104) | 6 (2/4) | 5 (0/5) | 34 (14/20) | 506 (269/237) |

**Table 44.**
Plied and cabled ropes, quantified per material and trench.

| TRENCH | MATERIAL | | | | | TOTAL |
|---|---|---|---|---|---|---|
| | grass | palm | soft fibre | (goat) hair | other | |
| BE94/95-01 | **3** | 6 | 0 | 0 | 9 | **4** |
| BE6/16 | 4 | 6 | 0 | 2 | 38 | 4 |
| BE96/…-10 | 3 | 14 | 0 | 0 | 0 | 5 |
| BE96/97-13 | 12 | 9 | 0 | 0 | 17 | 6 |
| BE97/98-19 | 2 | 3 | 2 | 0 | 33 | 2 |
| BE98-21 | 3 | 4 | 0 | 9 | 6 | 3 |
| BE99-29 | 23 | 17 | 0 | 0 | 21 | 17 |
| BE99-31 | 9 | 23 | 1 | 2 | 47 | 12 |
| BE00-33 | 7 | 19 | 2 | 0 | 8 | 9 |
| resttrenches | 6 | 5 | 0 | 0 | 5 | 3 |
| total site | 5 | **11** | 0 | 1 | 14 | **6** |

**Table 45.**

Percentage ropes per trench (of the material and of the total quantity of the trench, regardless material). The total quantity of the site is shown with 'total site'. The percentages were calculated from the quantities presented in table 44. Key: Three percent (**bold**) of all grass cordage recovered from trench BE94/95-01 was rope and 4% (**bold**) of all cordage from trench BE94/95-01. Furthermore, 11% (**bold**) of all excavated palm cordage had a diameter of 10 mm or more. Six (**bold**) percent of all recovered cordage was rope.

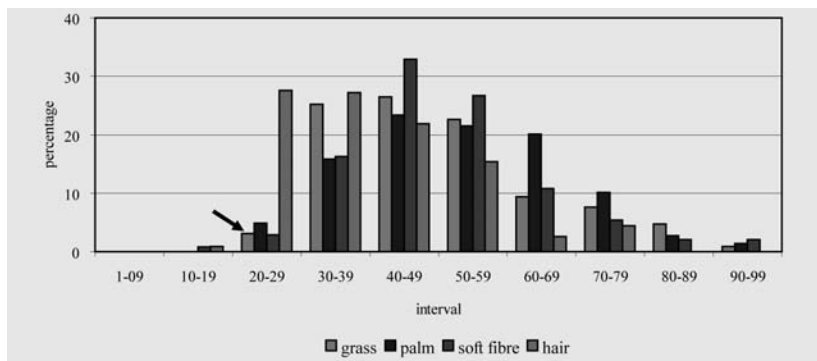| | | GRASS | PALM | SOFT FIBRE | (GOAT) HAIR | OTHER | |
|---|---|---|---|---|---|---|---|
| | | total (ply/cable) | total (ply/cable) | total (ply/cable) | total (ply/cable) | total (ply/cable) | total (ply/cable) |
| **1 cad** | quantity rope | 165 (113/52) | 131 (71/60 | 6 (2/4) | 1 (0/1) | 22 (8/14) | 325 (194/131) |
| | n=total (ply/cable) | 1856 (1708/148) | 841 (697/144) | 598 (326/272) | 305 (229/76) | 94 (70/24) | 3694 (3030/664) |
| | percentages of 'n' | 9 (**7/35**) | 16 (10/42) | 1 (1/2) | 0 (0/1) | 23 (11/58) | **9** (6/20) |
| **5/6 cad** | quantity | 62 (16/46) | 76 (40/36) | 1 (1/0) | 4 (0/4) | 8 (4/4) | 151 (61/90) |
| | n=total (ply/cable) | 2112 (1993/119) | 977 (856/121) | 357 (229/128) | 198 (138/60) | 103 (59/44) | 3747 (3275/472) |
| | percentages of 'n' | 3 (1/39) | 8 (5/30) | 0 (0/0) | 2 (0/7) | 8 (7/9) | 4 (2/19) |

**Table 46.**

The distribution of ropes among contexts dated to the 1st cad and 5th-6th cad (quantified per plied and cabled ropes, per material and in percentages of the total quantity of plies and cabled cordage of a certain material). The totals are included as well. Key: Seven percent (**bold**) of the total quantity of grass plied cordage (1708) and 35% (**bold**) of the total quantity of grass cabled cordage (148) that were recovered from 1st cad contexts were ropes. Nine percent (**bold**) of the cordage, plied as well as cabled, had a diameter of 10 mm or more (i.e. were ropes).

| | MATERIAL | 1-09 | 10-19 | 20-29 | 30-39 | 40-49 | 50-59 | 60-69 | 70-79 | 80-89 | 90-99 | total calculated CIP | total plies and cables | % CIP of total plies and cables |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | A | | | | | B | | | | | | C | D | E |
| | | | | | | INTERVAL | | | | | | | | |
| quantity | grass | 0 | 0 | **85** | 680 | 715 | 610 | 255 | 204 | 127 | 23 | **2699** | 4232 | 64 |
| | palm | 0 | 0 | 56 | 180 | 266 | 244 | 229 | 115 | 31 | 16 | 1137 | 2003 | 57 |
| | soft fibre | 0 | 2 | 7 | 39 | 79 | 64 | 26 | 13 | 5 | 5 | 240 | 1026 | 23 |
| | (goat) hair | 0 | 2 | 63 | 62 | 50 | 35 | 6 | 10 | 0 | 0 | 228 | 557 | 41 |
| | other | 0 | 0 | 6 | 6 | 25 | 11 | 20 | 3 | 8 | 8 | 87 | 227 | 38 |
| | total | 0 | 4 | 217 | 967 | 1135 | 964 | 536 | 345 | 171 | 52 | 4391 | 8045 | 55 |
| percentage | grass (n=2699) | 0 | 0 | **3** | 25 | 27 | 23 | 9 | 8 | 5 | 1 | 100 | | |
| | palm (n=1137) | 0 | 0 | 5 | 16 | 23 | 22 | 20 | 10 | 3 | 1 | 100 | | |
| | soft fibre (n=240) | 0 | 1 | 3 | 16 | 33 | 27 | 11 | 5 | 2 | 2 | 100 | | |
| | (goat) hair (n=228) | 0 | 1 | 28 | 27 | 22 | 15 | 3 | 4 | 0 | 0 | 100 | | |
| | other (n=87) | 0 | 0 | 7 | 7 | 29 | 13 | 23 | 3 | 9 | 9 | 100 | | |
| | total (n=4391) | 0 | 0 | 5 | 22 | 26 | 22 | 12 | 8 | 4 | 1 | 100 | | |

**Table 47 (above) and graph 48 (below).**

CIP values of plied and cabled cordage, quantified per material, and the distribution over the intervals in percentages (section B) of the cordage from Berenike to show the pattern of CIP values per material through time. Section C shows the total quantity of cordage of which CIP values were calculated. Section D shows the total quantity of plies and cables. Section E shows the percentage calculated CIP's of the total quantity of plies and cables per material and of the total regardless the material (the row heading 'total'). The data of section B and C of table 47 (quantity) were used to calculate the percentage in graph 48 (percentage). For key see text graph 48.

Graph 48 (below), graph of table 47 (section B). CIP values and their percentages (per interval) of the total quantity of calculated CIP's per material to show the pattern of CIP values per material. Cordage made of a different material (table 47: 'other') were left out. Key: Three percent (bold in table 47 and arrow in the graph) of the grass cordage of which CIP values were calculated showed values falling in the interval representing the CIP values 20-29 (85 pieces [**bold** in table 47] made of grass out of 2699 CIP calculated grass cordage [**bold**, section C]).
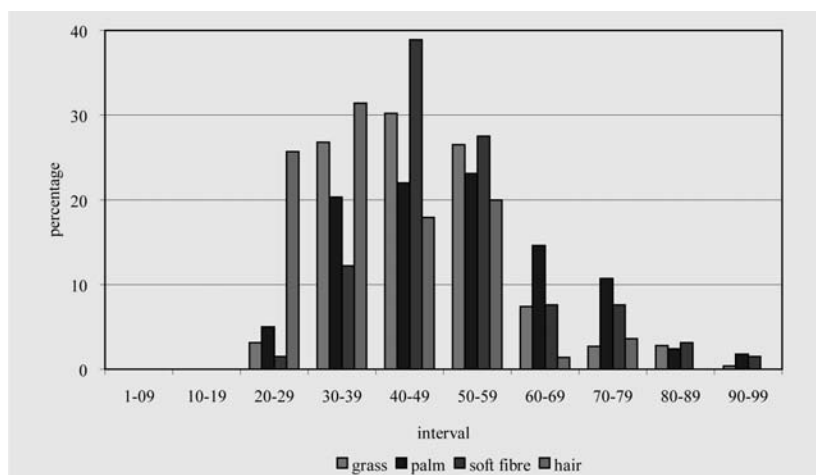
| | MATERIAL | 1-09 | 10-19 | 20-29 | INTERVAL 30-39 | 40-49 | 50-59 | 60-69 | 70-79 | 80-89 | 90-99 | total calculated CIP | total plies and cables | % CIP of total plies and cables |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| quantity | grass | 0 | 0 | 39 | 336 | 378 | 332 | 93 | 34 | 35 | 5 | 1252 | 1864 | 67 |
| | palm | 0 | 0 | 27 | 110 | 119 | 125 | 79 | 58 | 13 | 10 | 541 | 842 | 64 |
| | soft fibre | 0 | 0 | 2 | 16 | 51 | 36 | 10 | 10 | 4 | 2 | 131 | 601 | 22 |
| | (goat) hair | 0 | 0 | 36 | 44 | 25 | 28 | 2 | 5 | 0 | 0 | 140 | 305 | 46 |
| | other | 0 | 0 | 0 | 5 | 10 | 7 | 14 | 0 | 7 | 0 | 43 | 94 | 46 |
| | total | 0 | 0 | 104 | 511 | 583 | 528 | 198 | 107 | 59 | 17 | 2107 | 3706 | 57 |
| percentage | grass (n=1252) | 0 | 0 | 3 | 27 | 30 | 27 | 7 | 3 | 3 | 0 | 100 | | |
| | palm (n=541) | 0 | 0 | 5 | 20 | 22 | 23 | 15 | 11 | 2 | 2 | 100 | | |
| | soft fibre (n=131) | 0 | 0 | 2 | 12 | 39 | 28 | 8 | 8 | 3 | 2 | 100 | | |
| | (goat) hair (n=140) | 0 | 0 | 26 | 31 | 18 | 20 | 1 | 4 | 0 | 0 | 100 | | |
| | other (n=43) | 0 | 0 | 0 | 12 | 23 | 16 | 33 | 0 | 16 | 0 | 100 | | |
| | total (n=2107) | 0 | 0 | 5 | 24 | 28 | 25 | 9 | 5 | 3 | 1 | 100 | | |

**Table 49 (above) and graph 50 (below).**
CIP values of plied and cabled cordage, quantified per material, and the distribution over the intervals (section B) of cordage from context, dated to the 1st cad, to show the pattern of CIP values per material through time. Section C shows the total quantity of cordage of which CIP values were calculated; section D shows the total quantity of plies and cables. The last section shows the percentage calculated CIP's of the total quantity of plies and cables per material and of the total regardless the material. The data of the second and third section of 'quantity' were used to calculate the percentages. For key see graph 48.
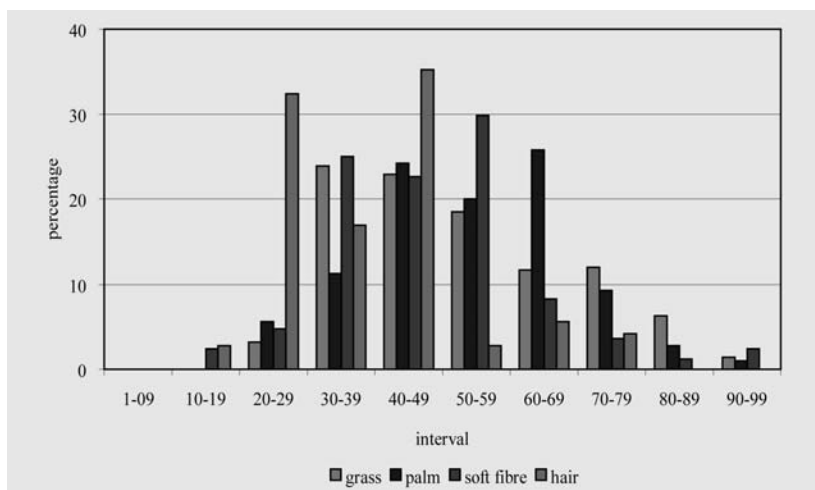Graph 50, graph of table 49. For key see graph 48. Cordage made of a different material ('other') were left out.

| | MATERIAL | 1-09 | 10-19 | 20-29 | 30-39 | 40-49 | 50-59 | 60-69 | 70-79 | 80-89 | 90-99 | total calculated CIP | total plies and cables | % CIP of total plies and cables |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | INTERVAL | | | | | | | | |
| quantity | grass | 0 | 0 | 43 | 314 | 301 | 243 | 153 | 158 | 82 | 18 | 1312 | 2113 | 62 |
| | palm | 0 | 0 | 28 | 56 | 120 | 99 | 128 | 46 | 14 | 5 | 496 | 977 | 51 |
| | soft fibre | 0 | 2 | 4 | 21 | 19 | 25 | 7 | 3 | 1 | 2 | 84 | 357 | 24 |
| | (goat) hair | 0 | 2 | 23 | 12 | 25 | 2 | 4 | 3 | 0 | 0 | 71 | 198 | 36 |
| | other | 0 | 0 | 6 | 1 | 13 | 2 | 2 | 2 | 0 | 3 | 29 | 105 | 28 |
| | total | 0 | 4 | 104 | 404 | 478 | 371 | 294 | 212 | 97 | 28 | 1992 | 3750 | 53 |
| percentage | grass (n=1312) | 0 | 0 | 3 | 24 | 23 | 19 | 12 | 12 | 6 | 1 | 100 | | |
| | palm (n=496) | 0 | 0 | 6 | 11 | 24 | 20 | 26 | 9 | 3 | 1 | 100 | | |
| | soft fibre (n=84) | 0 | 2 | 5 | 25 | 23 | 30 | 8 | 4 | 1 | 2 | 100 | | |
| | (goat) hair (n=71) | 0 | 3 | 32 | 17 | 35 | 3 | 6 | 4 | 0 | 0 | 100 | | |
| | other (n=29) | 0 | 0 | 21 | 3 | 45 | 7 | 7 | 7 | 0 | 10 | 100 | | |
| | total (n=1992) | 0 | 0 | 5 | 20 | 24 | 19 | 15 | 11 | 5 | 1 | 100 | | |

**Table 51 (above) and graph 52 (below).**
CIP values of plied and cabled cordage, quantified per material, and the distribution over the intervals (section B) of cordage from contexts that were dated to the 5th-6th cad to show the pattern of CIP values per material through time. Section C shows the total quantity of cordage of which CIP values were calculated; section D shows the total quantity of plies and cables. The last section shows the percentage calculated CIP's of the total quantity of plies and cables per material and of the total regardless the material. The data of the second and third section of 'quantity' were used to calculate the percentages. For key see graph 48. Graph 52, graph of table 51. For key see graph 48. Cordage made of a different material ('other') were left out.
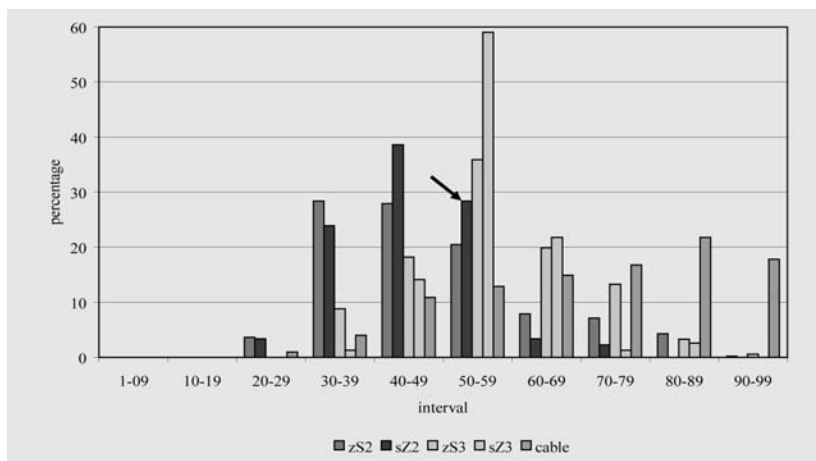
| COMPOSITION | | | 1-09 | 10-19 | 20-29 | 30-39 | 40-49 | 50-59 | 60-69 | 70-79 | 80-89 | 90-99 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| quantity | $zS_2$ | | 0 | 0 | 81 | 638 | 626 | 460 | 177 | 160 | 97 | 4 | 2243 |
| | | $sZ_2$ | 0 | 0 | 3 | 21 | 34 | 25 | 3 | 2 | 0 | 0 | 88 |
| | $zS_3$ | | 0 | 0 | 0 | 16 | 33 | 65 | 36 | 24 | 6 | 1 | 181 |
| | | $sZ_3$ | 0 | 0 | 0 | 1 | 11 | 46 | 17 | 1 | 2 | 0 | 78 |
| | cable | | 0 | 0 | 1 | 4 | 11 | 13 | 15 | 17 | 22 | 18 | 101 |
| | other | | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 0 | 0 | 0 | 8 |
| | total | | 0 | 0 | 85 | 680 | 715 | 610 | 255 | 204 | 127 | 23 | 2699 |
| percentage | $zS_2$ | | 0 | 0 | 4 | 28 | 28 | 21 | 8 | 7 | 4 | 0 | 100 |
| | | $sZ_2$ | 0 | 0 | 3 | 24 | 39 | **28** | 3 | 2 | 0 | 0 | 100 |
| | $zS_3$ | | 0 | 0 | 0 | 9 | 18 | 36 | 20 | 13 | 3 | 1 | 100 |
| | | $sZ_3$ | 0 | 0 | 0 | 1 | 14 | 59 | 22 | 1 | 3 | 0 | 100 |
| | cable | | 0 | 0 | 1 | 4 | 11 | 13 | 15 | 17 | 22 | 18 | 100 |
| | other | | 0 | 0 | 0 | 0 | 0 | 13 | 88 | 0 | 0 | 0 | 100 |
| | total | | 0 | 0 | 3 | 25 | 27 | 23 | 9 | 8 | 5 | 1 | 100 |

**Table 53 (above) and graph 54 (below).**

Grass plied and cabled cordage from Berenike and the occurrence of CIP values, quantified per composition and interval. The data of table 53, section 'quantity' were used to calculate the percentages. Graph 54 is based on these percentages. For key see graph 54.

Graph 54, graph of table 53. Key: Twenty-eight percent (arrow in the graph and **bold** in table 53, section 'percentages') of the $sZ_2$ cordage made of grass, had a CIP value between 50 and 59. Cordage with a different composition (table 53: 'other') were left out.
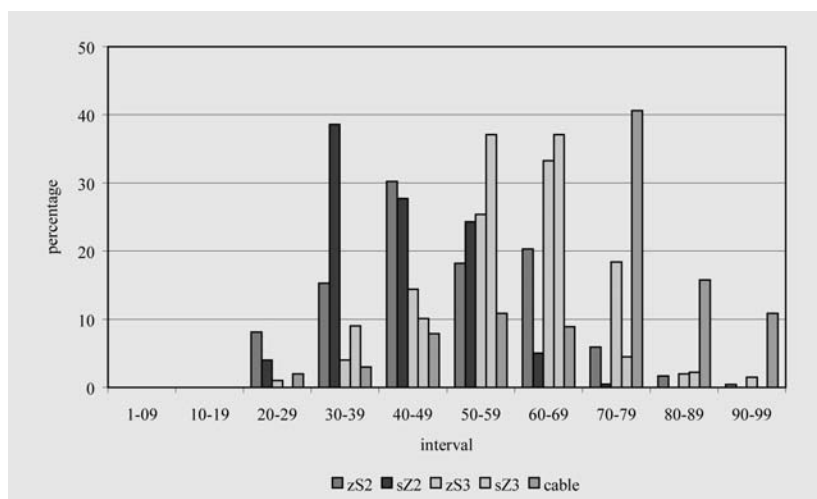
| COMPOSITION | | | | INTERVAL | | | | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1-09 | 10-19 | 20-29 | 30-39 | 40-49 | 50-59 | 60-69 | 70-79 | 80-89 | 90-99 | |
| quantity | $zS_2$ | | 0 | 0 | 44 | 83 | 164 | 99 | 110 | 32 | 9 | 2 | 543 |
| | | $sZ_2$ | 0 | 0 | 8 | 78 | 56 | 49 | 10 | 1 | 0 | 0 | 202 |
| | $zS_3$ | | 0 | 0 | 2 | 8 | 29 | 51 | 67 | 37 | 4 | 3 | 201 |
| | | $sZ_3$ | 0 | 0 | 0 | 8 | 9 | 33 | 33 | 4 | 2 | 0 | 89 |
| | cable | | 0 | 0 | 2 | 3 | 8 | 11 | 9 | 41 | 16 | 11 | 101 |
| | other | | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| | total | | 0 | 0 | 56 | 180 | 266 | 244 | 229 | 115 | 31 | 16 | 1137 |
| percentage | $zS_2$ | | 0 | 0 | 8 | 15 | 30 | 18 | 20 | 6 | 2 | 0 | 100 |
| | | $sZ_2$ | 0 | 0 | 4 | 39 | 28 | 24 | 5 | 1 | 0 | 0 | 100 |
| | $zS_3$ | | 0 | 0 | 1 | 4 | 14 | 25 | 33 | 18 | 2 | 2 | 100 |
| | | $sZ_3$ | 0 | 0 | 0 | 9 | 10 | 37 | 37 | 5 | 2 | 0 | 100 |
| | cable | | 0 | 0 | 2 | 3 | 8 | 11 | 9 | 41 | 16 | 11 | 100 |
| | other | | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 100 |
| | total | | 0 | 0 | 5 | 16 | 23 | 22 | 20 | 10 | 3 | 1 | 100 |

**Table 55 (above) and graph 56 (below).**
Palm plied and cabled cordage and the occurrence of CIP values, quantified per composition and interval. The data of table 55, section 'quantity' were used to calculate the percentages. Graph 56 is based on these percentages. For key see graph 54.
Graph 56, graph of table 55. For key see graph 54. Cordage with a different composition ('other') were left out.

| COMPOSITION | | 1-09 | 10-19 | 20-29 | 30-39 | 40-49 | 50-59 | 60-69 | 70-79 | 80-89 | 90-99 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $zS_2$ | | 0 | 0 | 129 | 728 | 828 | 586 | 296 | 194 | 108 | 6 | 2875 |
| | $sZ_2$ | 0 | 1 | 75 | 186 | 167 | 124 | 27 | 7 | 7 | 1 | 595 |
| $zS_3$ | | 0 | 0 | 2 | 25 | 65 | 119 | 113 | 61 | 10 | 5 | 400 |
| | $sZ_3$ | 0 | 1 | 1 | 11 | 30 | 84 | 54 | 8 | 4 | 2 | 195 |
| cable | | 0 | 2 | 9 | 13 | 40 | 43 | 34 | 73 | 42 | 37 | 293 |
| other | | 0 | 0 | 1 | 4 | 6 | 7 | 12 | 2 | 0 | 1 | 33 |
| total | | 0 | 4 | 217 | 967 | 1136 | 963 | 536 | 345 | 171 | 52 | 4391 |
| $zS_2$ | | 0 | 0 | 5 | 25 | 29 | 20 | 10 | 7 | 4 | 0 | 100 |
| | $sZ_2$ | 0 | 0 | 13 | 31 | 28 | 21 | 5 | 1 | 1 | 0 | 100 |
| $zS_3$ | | 0 | 0 | 1 | 6 | 16 | 30 | 28 | 15 | 3 | 1 | 100 |
| | $sZ_3$ | 0 | 1 | 1 | 6 | 15 | 43 | 28 | 4 | 2 | 1 | 100 |
| cable | | 0 | 1 | 3 | 4 | 14 | 15 | 12 | 25 | 14 | 13 | 100 |
| other | | 0 | 0 | 3 | 12 | 18 | 21 | 36 | 6 | 0 | 3 | 100 |
| total | | 0 | 0 | 5 | 22 | 26 | 22 | 12 | 8 | 4 | 1 | 100 |

The INTERVAL columns (1-09 through 90-99) span the quantity and percentage sections. The left groups are labelled "quantity" (top seven rows) and "percentage" (bottom seven rows).

**Table 57 (above) and graph 58 (below).**

Plied and cabled cordage from Berenike, regardless the material from which it was made, and the occurrence of CIP values, quantified per composition and interval. The data of table 57, section 'quantity' were used to calculate the percentages. Graph 58 is based on these percentages. For key see graph 54.
Graph 58, graph of table 57. For key see graph 54.