Castellum Flevum and its Glassware: A Study on the Roman Glass of Velsen I

Penterman, Merel

Universiteit Leiden

Castellum Flevum and its Glassware

A Study on the Roman Glass from Velsen I

M. Penterman

S1616196

University of Leiden

Faculty of Archaeology

15 December 2021

Universiteit Leiden

Castellum Flevum and its Glassware: A Study on the Roman Glass from Velsen I

Merel Penterman - S1616196

m.penterman@umail.leidenuniv.nl

Archaeology Bachelor Thesis

Supervisor: Dr.ir. M.J. Driessen

Leiden University - Faculty of Archaeology

15-12-2021

Final Version

Acknowledgement

Prior to the beginning of this thesis, I would like to thank a few people crucial for the production of this thesis. First of all, I want to extend my gratitude to my thesis supervisor Dr.ir. M.J. Driessen who assisted me during the process. He helped me obtain the overall subject, necessary documents and information, as well as offering me good advice and guidance. Additionally, I would like to thank all the people that helped me with revising, restructuring, and completing the writing process. Lastly, I would like to thank Sophia M.E. van Lith for doing all the crucial prior research done on the glass assembly of Velsen I.

Table of Contents

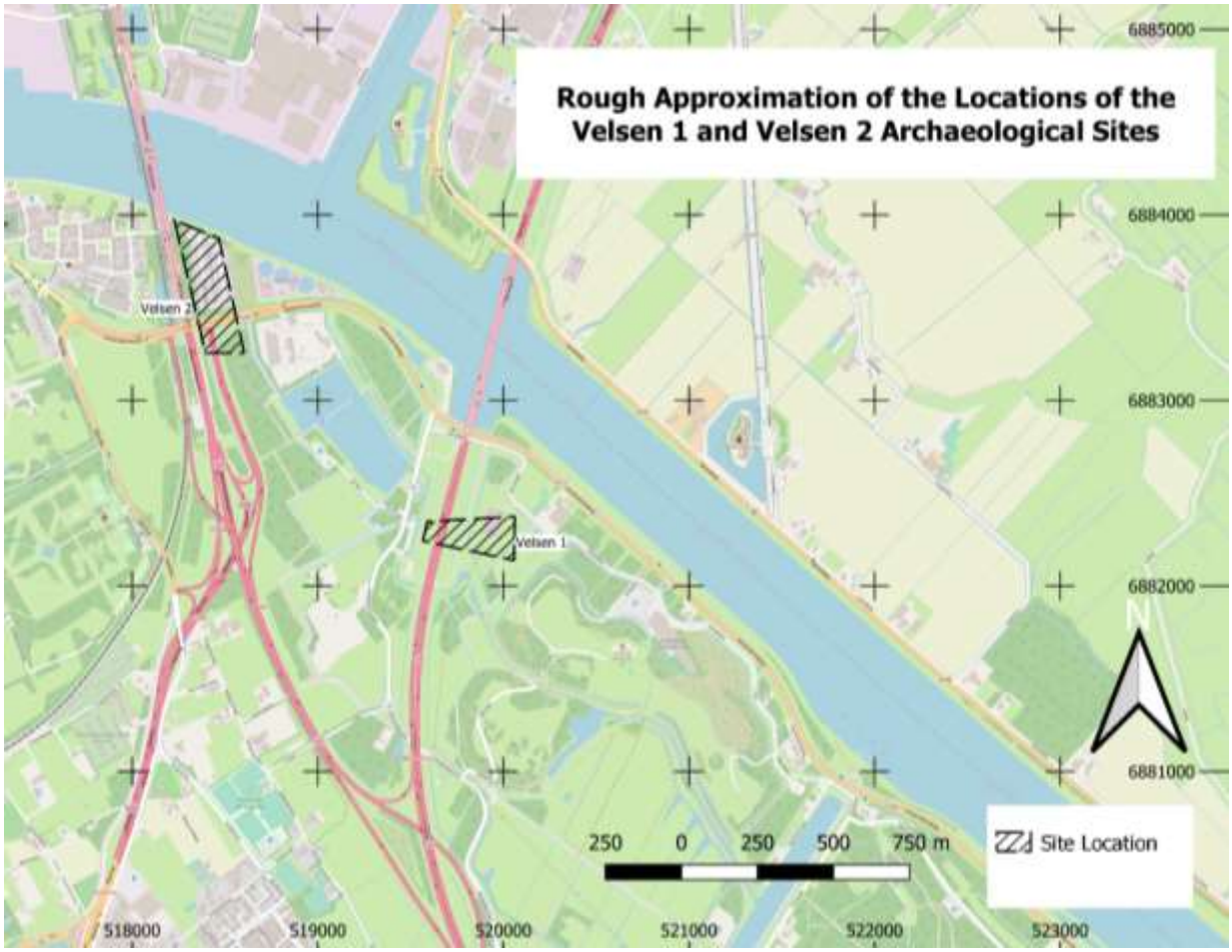


Figure 1: Rough approximation of the location of the archaeological sites of both Velsen 1 and Velsen 2.

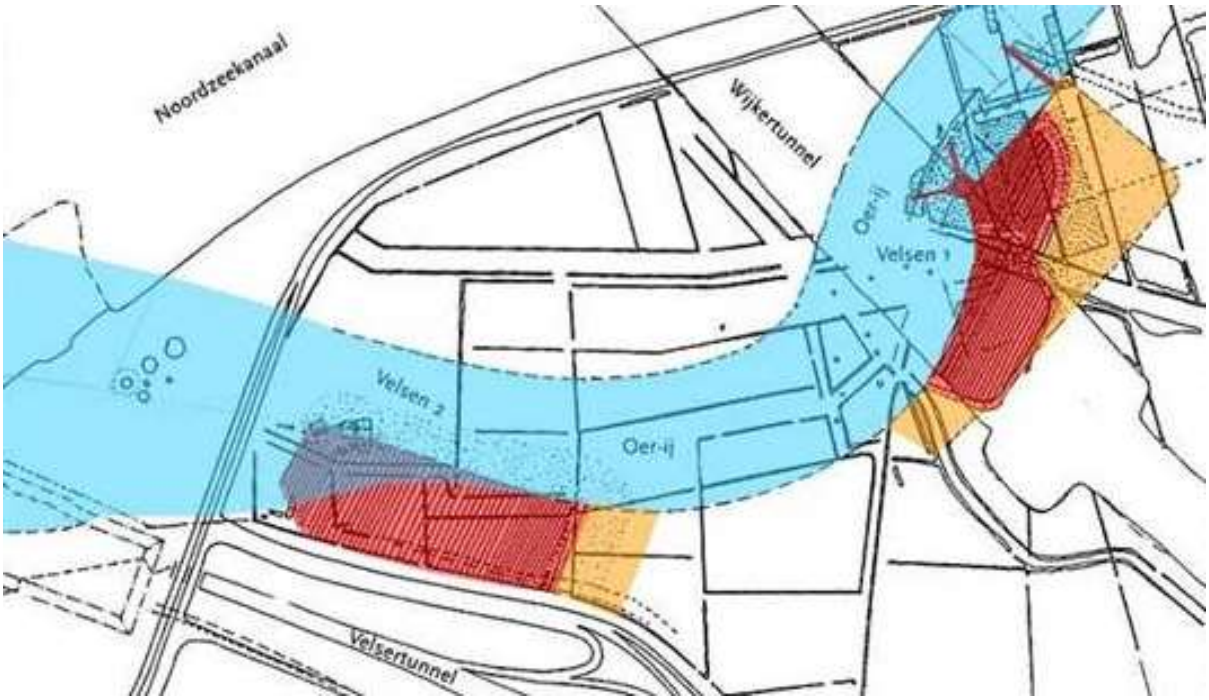


Figure 2: A visualisation of the location of Velsen I and Velsen II including the historical river landscape (Bosman 2016, 16)

1. Introduction

If one would be searching for iconic Roman military sites from the Netherlands, the archaeological site of Velsen I, or the often-called Castellum Flevum, would be somewhere on the top of that list. The site includes an extensive fort with numerous identified stages of construction; together with harbour works, a boathouse, and a diverse artefact assembly. Additionally, the Velsen site consists of a total of two, probably consecutive, sites that can even be assigned rather exact dates. Still, besides it being intensively studied, there are many questions which arise from several aspects of the site: 'Why was the site of Velsen I abandoned?', 'Why did they return to Velsen II?', 'Who attacked the Velsen I site?', and, most importantly 'Why was the Velsen I site built in the first place?'. Unfortunately, this bachelor thesis lacks the time and resources to go into such broad perspectives, however it is possible to look at one particular aspect of the site; the Roman glass assembly.

The glass assembly in Velsen I is relatively abundant as opposed to other contemporaneous sites, and even though most of the fragments have been analysed by van Lith (1977); this was primarily done from a culture historical typological approach in order to categorise and date the fragments. Therefore, more attention could be paid to possible functional, cultural, and socio-economical perspectives that might be relevant for this particular archaeological site. This could provide more insight into the genesis and decline of the Velsen I site, and would simultaneously contextualise and give more post-processual nuance to the relationship between the glass assembly and its archaeological framework. Moreover, not many glass assemblies have been analysed from the context of a Roman militaristic perspective, as oftentimes glass fragments are either analysed individually, in a different archaeological context, or as part of a macro trade network system. There are even fewer glass assemblies investigated in relation to the northern Roman frontier zones, as most military assembly researches are currently connected to the Mediterranean or the Near Eastern areas.[1] Lastly, as the van Lith (1977) analysis was carried out quite some time ago, new contemporary studies might also shed more light onto the glass assembly of Velsen I.

[1] Examples of these are Jackson-Tal 2016, Herrán 2010; Polić-Radovanović *et al* 2012; Bidegaray *et al* 2018; Price 2005; and Sheard 1999.

1.1 The Site of Velsen I and its Discovery

The discovery and onset excavation of the Velsen I archaeological site started in the year 1972, and has been revisited annually up until 1991 (with the exception of 1983-1984). In this starting year, several pieces of Roman artefacts were uncovered during construction works, and hence, both the Dutch association of amateur archaeologists (AWN) as well as the institute of Pre- and Protohistory of the University of Amsterdam (IPP) were alerted (Bosman 2016, 27). This initial research consisted of archaeological supervision and small trial trenches, in order to create a clear overview of the find distribution and size of the archaeological site. Eventually, the plans to develop a large highway tunnel, the *Wijkertunnel*, resulted in a large-scale excavation as the planned construction would compromise the site. This archaeological research, which included well over several hectares, ultimately resulted in the uncovering of a complete Roman military fortress and harbour.

The resulting Velsen I site consists of Roman military fortifications, some extending harbour works, and the remains of a boathouse. The site is located on the southern bank of a former side branch of the so-called Oer-IJ tidal system (appendix 1). Although there is some conflicting geological research which states that the inlet system was silting up prior to the construction of Velsen I (Vos *et al* 2015, 310; Bosman 2016, 20) the Romans must have found enough strategic reasons to create a port (Morel 1988, 303). During the excavation a total of 6 different consecutive constructional phases were identified and dated from 16 to 28 CE (appendix 2). Nonetheless, the basic dualistic structure of the fort-harbour construction remains relatively similar during each of these phases. The aforementioned dates are generally based upon artefacts such as coins, metal, and ceramics, combined with dendrochronological research. Additionally, historically speaking, the start date can coincidentally be coincided with the second Germania campaign of Germanicus, in which the northern sea route is first used (Bosman 2016, 40); whereas the end date is based upon the Frisian revolt at the northern frontier. Therefore, both historical data and archaeological evidence seem to concur with both these two specific dates. Hence is why researchers are relatively confident about the historical context of the site of Velsen I[2].

[2] Many studies deem 'Castellum Flevum' analogous to the Velsen sites. However, even though most researchers widely accept this as admissible, there is still no conclusive evidence that the historical Castellum Flevum is indeed related to the Velsen fort.

1.2 Glass in the Roman Empire

The precise history of glass within the archaeological material record is difficult to pinpoint. It is certain that, at the latest, glass was introduced somewhere in the 2nd millennium BCE in the shape of small beads. However, it is not until the Roman Empire that glass became a widespread material category. During this time, glass products were manufactured with a myriad of different colours, shapes, functions, and techniques. It was a preferred material, because "(…) [c]ombined with the inherent attractiveness of glass—it is nonporous, translucent, and odourless—[the] adaptability encouraged people to change their tastes and habits, so that, for example, glass drinking cups rapidly supplanted pottery equivalents" (Trentinella 2000, 3). Suffice to say, ceramicware did not disappear in the Roman archaeological record due to its new competitor, however, it is certain that this novel commodity was well-liked and highly regarded throughout the empire. Unfortunately, it is rather hard to determine exact statistics related to the amount of use of both material categories, as the durability and preservation differ too greatly to make a sufficient comparison, although, in general, the use of ceramics still remains the most prominent commodity.

However, it is clear that during the early 1st century CE production centres were widespread throughout the western and eastern parts of the Empire, and are therefore indicative of the expansion of glass trade during this period (Grose 1989, 241 – 244; Jackson-Tal 2016, 63). This probably can also be attributed to the introduction of glassblowing somewhere in the 1st century BCE which increased the diversity and appeal even further, whilst simultaneously converting glass from an aristocratic luxury into a relatively frequent commodity (Barag 1985, 91). For example, the site of Velsen I alone consists of 6 different decoration techniques, approximately 20 types of functions, and 22 distinct colours. The actual motive of this technological shift has been substantiated by many arguments, such as lower labour cost and higher production speed; however research also suggests that the shift to blown glass was favoured due to the ability to produce larger, and more varieties of vessels (Larson 2019; Stern 1999).

Nonetheless, even though the availability of glassware became more widespread with the introduction of glassblowing, still "(…) the archaeological finds from this period reveal a firm demand for luxury items" (Jackson-Tal 2016, 63). Thus, although there was a clear group of 'industrialised' common ware, the demand for luxury goods was still high enough to create individualized, high-quality products. More specifically,

luxury glass goods are often classified as such "(…) due to their lengthy and elaborate methods of production, distinctive fine decoration, unique delicate vessel types, typical high-quality (…) fabric and their rarity in similar contexts in the region" (Idem, 66). Possible examples of these products are high-relief glass, facet-cut glass, decolorized glass, various polychrome decorative methods, and other highly decorated pieces.

Lastly, glass was reserved for various different functions within the Roman Empire. Oftentimes, glass vessels expressed themselves rather similar as their ceramic counterparts.[3] Regarding function, glass can, for example, be related to tableware used for eating; such as cups, plates, bowls, dishes, and various other forms. Furthermore, there are also many examples within the archaeological record that show glass was used for the storage of several types of goods - predominantly liquids - in the shape of amphorae. One of the few categories that glass does seem to dominate is that of 'unguentaria', or small bottles commonly used to store either cosmetical products or used for funerary practices. These unguentaria are therefore often found in bathhouse or funerary contexts, as can be seen at bathhouse contexts such as Coriovallum (van den Dries 2007). Lastly, glass was also used in a myriad of other ways, such as windowpanes, game pieces, jewellery, luxury display, and much more.

1.3 Research Problem

The van Lith (1977) analysis of the glass assembly from Velsen I was primarily done from a culture historical typological paradigm. Therefore, information was acquired regarding the shape, overall typology of the vessels, and much detail concerning other external features of the fragments, such as colour, thickness, size, decoration, and the production method. However, less information was attained on the socio-economical, cultural, and other contextual implications of the overall glass assembly. Moreover, even though van Lith deemed the glass 'conventional' and 'expected' for its specific context, no clear observation was made between the unique Roman military northern frontier context and the glass fragments acquired. This subsequently means that some

[3] Examples of these similar shapes can be found in Isings (1955) and typological similarities to the terra sigillata shapes of Dragendorff & Watzinger (1948). Instances mentioned by van Lith (1977) are: Dragendorff shape 27 with Isings type 3 (11-15), and Dragendorff 23 with Isings type 48 (40).

information was disregarded, which could give more insight into the implications of the daily life of the military harbour fort in Velsen I.

1.4 Research Goal

The glass assembly of Velsen I has not been completely analysed with contemporary theoretical frameworks in mind. Therefore, the research goal of this thesis is to analyse this assembly from a post-processual archaeological perspective, in order to further build upon the research of van Lith (1977). This, in turn, would provide useful insights into the socio-economic and cultural implications of the use of glassware by the occupants of the Velsen I Roman harbour fort. Subsequently, this assembly could be more effectively used as a comparative example to other contemporaneous archaeological sites. In short, it is important to realise that the aim of this thesis is not to give a definitive interpretation or to be an all-encompassing research on glass within the Roman fort, instead it aims to create a preliminary analysis which can be used for future research.

In addition to this focus on the implications of the assembly itself, this thesis will produce a thorough and clear dataset of the glass fragments. Although van Lith (1977) already produced an overview, the structure of the data was not equipped to deal with modern data evaluation, and additionally remained incomplete due to later expansions of the assembly. Hence is why, this thesis will digitize the data in order to make it accessible and complete.

1.5 Research Questions

As the glass was predominantly analysed from a typological framework, the research questions that give more insight into the context of the assembly are necessary in order to better understand the role of glass in the military harbour fort of Velsen I. As the cultural and socio-economic role of glass within Velsen I allows for a wide range of different research perspectives, and simultaneously creates a research area that is too extensive for this bachelor thesis; this thesis will solely focus on two smaller questions:

- Is there a clear distinction of either common or luxury ware within the glass assembly, and if so, what can that say about the place of glass within the Roman military society?

- What was the dominant function of glass within the assembly, and what can that say about the use of glass in daily life?

Both these questions try to further look into contextual implications of glass within Roman daily life in Velsen, and try to understand glass not as a fixed empire-wide system, but as a flexible category capable of individualized context. The first sub-question tries to better understand the socio-economic status of the glassware within the Velsen I site. It analyses the availability of glass to this region and its people, and simultaneously gives insight into the implications of the assembly on the socio-economic status of the fort occupants. On the other hand, the second sub-question refers to the cultural use of glass within the Roman military fort. It analyses whether glass has a certain designated role within the artefact categories of the Velsen I area. Lastly, it is important to mention that these research angles do not attempt to provide a conclusive and complete answer to the predicaments of glass use in the Roman Empire, however they can provide some small insights into the glass use of this particular place, at this particular time, with this particular dataset.

2. Theoretical Framework

2.1 Culture Historical Archaeology

During the past few decades, there have been several methods developed for looking at archaeological artefact assemblies. One of the earliest theoretical perspectives is that of 'culture historical archaeology', which emerges somewhere in the late nineteenth century. This perspective is defined by Trigger (2007) as "[a]n approach centred upon defining archaeological cultures and trying to account for their origins in terms of diffusion and migration (…) (187). Additionally, "[t]here was also a trend that was developing among the European intelligentsia that began to oppose the concept of cultural evolutionism, instead taking the viewpoint that human beings were inherently resistant to change" (Idem, 218). Hence, it was deemed possible to create exact (geographical) boundaries of where certain cultural groups ended and where others began. These boundaries were defined by, among other things, analysing the characteristics of artefact assemblies and regarding them analogous to respective peoples and timeframes. This resulted in a paradigm generally emphasizing classification and therefore prioritizing the notion of typologies. Essentially, this type of research tries to create an objective framework of artefact characteristics which can be related to possess certain characteristics, context, and time period.

Within the glass research this framework has been predominantly designed in Isings (1957) *Roman Glass from Dated Finds*, where a typology was created based solely on well-dated finds, and consequently these vessel types were assigned a particular time period. Although this typology is still commonly used within contemporary literature, it is important to nuance the usage of such a framework. In general, these frameworks were designed to create order in the chaos of preliminary analogue datasets. However, this mindset also implies that societies essentially are unchanging and objective entities that can be studied by solely looking at artefact boundaries and typologies. Additionally, associating particular typological artefacts to certain societal groups suggests that identity conforms to materialistic notions and that there is little to no overlap between cultural groups. In other words, culture historical archaeology often implies that 'certain pots belong to certain people', whereas the reality might be highly contextualized.

However, it is also important to nuance that these arguments against the notion

of this framework do not advocate for the disappearance of typologies and rejecting the concept of assigning certain cultures particular timeframes and materialistic identities. This paragraph merely indicates that it is imperative to understand the fluidity of cultural boundaries and restrictions, as well as emphasizing the fact that although typological frameworks are a great initial guideline, eventually, one should look at artefacts as highly contextualized entities.

2.2 Post-Processual Archaeology

An answer to the aforementioned paradigm is the perspective of post-processual or interpretive archaeology. Post-processualism underlines that the archaeological discipline is dealing with context-bound issues and therefore cannot be studied in an objective stationary manner. It "(…) emphasizes that archaeology is subjective rather than objective, and that what truth can be ascertained from the archaeological record is often relative to the viewpoint of the archaeologist responsible for unearthing and presenting the data" (Trigger 2007, 451-452). In short, every discourse within the archaeology includes an undertone of both societal, cultural, and individual viewpoints of its contemporary researchers. Therefore, it is essentially impossible to reach an accurate representation of the past, as no objective reality can be depicted by present-day researchers. Still, by using certain methods one is able to come relatively close to an objective depiction of the past and its peoples.

Besides the researchers' subjectivity affecting archaeological research, post-processualists also consider past peoples and their societies as inherently subjective, and therefore an objective approach might negate important contextualized distinctions. Although the post-processualists agree with the concept of different 'cultures', it is not a well-defined demarcated group of people as culture historical archaeologists suggest, but rather an ambiguous set of ideologies, values, and traditions. Therefore, it is hard, perhaps even impossible, to make objective classified statements about cultural objects, as they are inherently malleable and relate to constant subjectivity. By categorizing glass vessels into their conforming sub-groups one might ignore important contexts relating to that particular artefact. Hence is why post-processualists argue a more holistic approach to research and combine both materialistic, idealistic, and contextualized perspectives to archaeological studies.

3. Methodology

As mentioned within the introduction, this thesis aims to research the role and position of glassware within the 1st century CE Roman military harbour fort of Velsen I. To be more specific, this thesis will look at the cultural and socio-economic implications of glass found within the assembly unearthed by the archaeological investigation and subsequently researched by van Lith (1977). The theoretical framework paragraph established that this research was done from a culture historical perspective, whereas this thesis aims to add contextualized interpretations derived from a post-processual angle. Therefore, this thesis will look at overall function, richness, quality, and abundance of the assembly, instead of predominantly analysing the external characteristics of the fragments.

3.1 Methodology of the Research Questions

As established in the research questions paragraph, the sub-questions that are central to this thesis are the following:

- Is there a clear distinction of either common or luxury ware within the glass assembly, and if so, what can that say about the place of glass within the Roman military society?
- What was the dominant function of glass within the assembly, and what can that say about the use of glass in daily life?

The first question tries to understand whether there is a clear socio-economic connotation present in relation to glass use within the Roman military context. The overall glass assembly will be analysed in order to establish whether there is a clear distinction between either luxury or common ware within the dataset. This will be done by looking at for instance: decoration, production technique, colour, and accessibility to the product and relating these properties to contemporary literature. Although the distinction between luxury and common ware is not as dichotomous as it sounds, there are clear characteristics that influence the socio-economic availability of certain wares, and therefore could give an indication of the means and social status of the Velsen I occupants.

On the other hand, the second question tries to get a grasp of the dominant function that the glass vessels included. Although van Lith (1977) did determine the

overall function of the vessels by linking it to a certain typology, no clear conclusions were drawn in relation to the overall function of glassware in the Velsen context. Therefore, the categories created by van Lith will be further described and interpreted in order to see what function glass had in this particular Roman military context. This will be done by further categorizing the dataset into overarching functional categories such as 'cup' and 'bowl', and creating a clear generalized overview of the dominant role that glass integrated within its society. Furthermore, by relating certain prevalent categories to concurring literature, further implications about their cultural and functional status can be contextualized.

3.2 The Dataset

Besides answering the aforementioned questions, this research will create a digital dataset in order to do a more exact analysis on the fragment assembly found. As this site had numerous stages of excavation, the information regarding the artefacts are dispersed over several pieces of literature (van Lith 1977; van Lith & Isings 1981; Bosman; 1997). Hence, this data first had to be collected within an individual database in order to get a clear overview of the excavated glass fragments. Unfortunately, due to each article including different ways to perform the data analysis; the available data alternates for each fragment. This resulted in a multitude of data gaps which were replaced with a 'not applicable' marker in categorical data, and a '9999' marker in numerical columns. Additionally, these aforementioned works unfortunately do not include many pictures of the fragments in question, instead descriptions of the vessels were given in considerable detail. Still, due to the absence of pictures and a few discrepancies within the text some of the characteristics were difficult to ascertain with great accuracy. However, these discrepancies are clearly stated within the resulting database (appendix 3, 4 and 5), and it will be mentioned if they are used within the research of this thesis.

4. Background Information

4.1 The Site of Velsen I

As mentioned within the introduction, the site of Velsen I consists of a total of six different consecutive constructional phases which were identified during the excavation[4]. These phases were subsequently numbered as 1a, 1b, 1c, 2a, 2b, and finally phase 3. The exact dating of these phases remains relatively unknown, besides its sequentiality and the approximate start and end date of the first and last phase. The first phase of the site is mainly designed as the initial regular marching camp. 'The defence was temporary in nature and probably also served as a construction camp for the next phase. (…) Only the eastern half of the bank zone had a defence. This consisted of a fence, the uprights of which were rammed deep into the ground. A gate had been placed in the centre of the fence[.]" (Morel 1988, 19). The landward side of the camp was defended with a singular V-shaped ditch, with a possible mound behind it (Ibidem). This initial phase is generally dated to 15 CE, based predominantly upon dendrochronological research.

Furthermore, during the transition of phase 1a to 1b the fence received an extra gate which gave access to a short jetty, where ships could moor in order to, for example, unload building materials for the next period. As a result, ships no longer had to be towed towards the bank (Morel 1988, 21). Especially, since phase 1b consisted of a large-scaled construction phase including the actual fort. The fence is replaced by a wall consisting of wood and earth, which included a 3 metre wide space between two fences which was filled with soil. Additionally, several towers were incorporated onto this wall, and possibly also a few extra gates. During this period extensive harbour works were also created, consisting of three jetties and even a relatively large boathouse (Ibidem). The next phase, 1c, is defined by the reparations and adaptations the Romans did to the harbour works, probably due to erosion of the river current. This is mostly related to the extra timbering that was added to the banks, to prevent further damage to the harbour works. Furthermore, the boathouse probably was moved 30 metres to the south for the same reason.

[4] Visual representation of the consecutive phases can be found in appendix 2 (Bosman 2016, 34 – 35). Other slightly older more detailed representations can be found in Morel (1988, plate I-VI), however several of the phases were not identified yet.

Due to the major differences in layout of phase 1 and phase 2 research speculates that the fort might have been abandoned for some time. However, actual tangible evidence has not been found for this particular theory (Morel 1988, 23). This time the fort is oval shaped together with another wooden and earthen wall and a singular defensive ditch. As this shape encompasses most of the harbour works, it is generally assumed that the harbour was still active during this time (Ibidem). Phase 2b on the other hand consisted of the final trapezoidal shape. The defence from phase 2a was kept on the eastern side, however the wall from phase 1a/1b was connected to this shape. Furthermore, several towers and gates were once again realised, and attached to the now three defensive moats. An extra fourth jetty was created on the eastern side outside of this wall. A few later excavations also portrayed a clear image of the latest phase 3 of Velsen I. The phase 2 fort remained maintained; however the western side received an extension; a trapezoidal shape with the longest side along the bank. (Bosman 2016, 39) Around it two ditches connected to the outer canals of phase 2b. Similar to other phases, this phase was surrounded by a wooden and earthen wall with intermediary towers placed within. Thus, the area of the fort increased almost twice in size during this phase.

The final phase is dated in 28 CE, and therefore also combined with the revolt of the Frisians at the northern frontier. Whether this extension is related to a Frisian attack has been speculated but never fully proven. There is some research that suggests the Velsen I fort was destroyed prior to its abandonment. “When the Romans left, not only were the defences of the fortress thoroughly demolished, but the harbour works were also rendered useless. As many poles as possible were pulled out of the ground. Parts of the piers were systematically broken away[.] (…) Furthermore, a burnt layer of fine charcoal grains has been found in the harbour (…)[,] probably a large part, if not the entire wooden fort has burned down.” (Bosman 2016, 53) This could be due to several reasons. First of all, as the final phase is often associated with the Frisian attack, their victory could create the outcome of a destroyed fort. However, researchers like to agree on another reason, as the wood of Velsen I could create a solid basis for the construction of Velsen II. There is even some conjecture that the Velsen I fort was abandoned but reinhabited during the construction of the Velsen II fort 600 metres westwards. However, this particular fort was constructed in 40 CE, hence what happened in the meantime is relatively unclear.

4.3 Roman Glass Production

Roman glass production consists of various distinct and complex techniques which create a different array of products. However, one thing is always clear, glass consists of three main components: silica (SiO_2) as a base material (60 to 70%), sodium carbonate (NA_2CO_3) as a flow agent and lowering of the melting temperature (approximately 15%), and calcium (Ca) as a chemical stabilizer (approximately 15%) (van den Dries 2007, 18 – 21). However, which specific components are used as these materials differs per region and timeframe. Oftentimes, shells were used as a form of calcium, however "[t]his was not necessary for the glass made in Ptolemais (later known as Akko). The sand used from the beach of the river Belus contains a lot of lime due to the large amount of shells, crushed by the action of surf and salt. (…) This region would develop into a major centre of glass production" (Idem, 21). Besides these three main components, several different types of ingredients can be added in order to alter colour, density, transparency, opaqueness, and several other extra decorative effects. In other words, these differences within the raw materials of glass create an advantage for researching the dates and origins of glass products.

The earliest method involved in the production of glass vessels is the process of 'core forming'.[5] "It is a technique in which a core was created from a rod of clay, mud, or possibly some quartz sand, together with an organic binder. In the past, the glassmakers placed heated - and thus flexible – glass around the mould and modelled it to the shape of the core. This was done by rolling the glass mass on a marver, a flat sheet of stone or ceramic, which allowed the mould to be formed while at the same time obtaining a smooth surface" (van der Groen & van Rossum 2011, 13). This technique was both used for glass beads as well as small vessels, however it was relatively time-consuming as well as resulting in thick and uneven walls. Therefore, this technique was no longer in use during the 1st century CE as it was both time-consuming and involved a high production intensity.

This production method was relatively quickly replaced by that of the mould casted or mould pressed glass, which is a relatively simple way of manufacturing open shaped vessels such as bowls and cups. This technique was introduced somewhere

[5] Some step-by-step visual examples of all production methods can be found on the website of 'http://www.theglassmakers.co.uk/' where experimental archaeologists Mark Taylor and David Hill recreate Roman glass making techniques, and therefore illustrate the (dis)advantages of certain production methods.

during the Hellenistic period (323 – 31 BCE) within Alexandria. The glass used for this technique was melted, however not so liquid that it could be poured. Additional requirements for this method was both a one-pieced mould and counter-mould; possibly made from ceramics in the shape of the subsequent glass object. Some molten glass was added to the mould, and then the bowl was pressed into the correct shape with the aid of the counter-mould. Afterwards, when the vessel had cooled, it was further sanded and polished smoothly (van der Groen & van Rossum 2011, 19). Although, this method is clearly faster and creates finer vessels, the amount of variability was still limited as one could only create open vessels. Although there were limitations in the vessel shape, the amount of decoration techniques superseded the former notably. Mosaic vessels were easy to create as a pre-processed decorated glass plate could be created and bent into certain shapes, especially with the variation of the glass slumping technique. By using the outer side of a mould, a plate of molten glass would be placed over the mould, which would slowly sink due to its own weight. It was easier to initially decorate this plate of glass prior to the eventual moulding technique, hence is why one often sees polychrome vessels created by this particular method (Idem, 21).

During the 1st century BCE the method of glassblowing was introduced. This technique probably originated in the Levant, where the oldest glass blown vessel is dated between 40 -37 BCE (Idem, 22). Here, a clear distinction can be made between the so-called free-blown vessels and mould-blown vessels. The initial glass blowing was done by using the free-blown method. This method, depending on the time period, included either a ceramic or metal blowpipe from which molten glass was added to the end. By blowing into this blowpipe, the glass would expand and become somewhat spherical in shape. By manipulating this sphere with several tools, intricate shapes and designs could be produced in a large-scaled and efficient manner. The same goes for the mould-blown technique, were glass was blown in a similar manner only now a two-sided mould covered the initial molten glass. Therefore, when the glassmaker blew into the pipe, the glass expanded no further than the mould itself, resulting in extremely detailed and nicely shaped glass. Although this increased the speed of glass production, the moulds used during the process had to be of a high quality, otherwise the resulting vessels would be less attractive. Therefore, free-blown glass still dominated the market in terms of quantity, as it did not require much extra equipment. Still, these techniques

made glassware widely available all over the empire, and therefore simultaneously decreased the value of glassware to a common household commodity. This meant that other techniques slowly disappear, and thus slumping, casting, and core forming are barely present within the archaeological record at the end of the Flavian period in 96 CE (van der Groen & van Rossum 2011, 23).

4.4 Roman Glass Decoration

Besides all these overarching production techniques, the Romans used a myriad of decorative methods which were incorporated during the production process. As there are numerous decoration techniques, only the ones relevant for this assembly will be discussed during this paragraph. First of all, as one can see within the archaeological record, glass can consist of many colours. These alterations in colour are mainly caused by adding or removing certain components from the initial glass mixture, however recent research also reveal that "(…) thickness [is] a crucial parameter when discussing glass hues, thus leading to a differentiation between the 'intrinsic' or 'perceived colour of glass objects (i.e. the colour of the object with the thickness normalised to 1mm, and that with its original thickness, respectively)" (Bidegaray *et al* 2020, 1). The same research also indicates that "(…) the presence of transition metal ions (e.g. Fe^{2+}/Fe^{3+}, Co^{2+}, Cu^{2+}, Mn^{3}) (…) act as colouring agents or chromophores" (Ibidem). Therefore, researchers are well aware of the complex implication that colour has to the ingredients of glass, however as the original dataset has not undergone detailed chemical analysis, nor does this thesis have the methods available, the overall colour categories will be both simplified and generalized. The most common type of glass within the 1st century CE is that of monochrome glass, or single-coloured glass. When unworked, glass emits the natural aqua or the so-called hues of a blue greenish colour. This colour can be altered or intensified by adding either lead or copper, which changes the scale from light/dark blue to light/dark green. If the same copper/lead mix is strongly reducing within the furnace one would create opaque red to brown glass.[6] The colour 'amber' was created by adding sulphur, the colour 'purple' by adding manganese components, a 'black' colour by adding a low iron group (Fe2O3), 'white' by using the grey metalloid

[6] The deep red colours are only found from the 4th century CE onwards as creating these furnace conditions is relatively difficult. Therefore, it is often considered a late Roman or sometimes even Early Medieval type of coloured glass.

antimony, and 'yellow' by using both antimony and lead. Lastly, Roman glass can also appear 'decolorized' or 'colourless' which was also achieved by adding either manganese or antimony. However, Jackson (2005, 773) states "(…) that antimony was the preferred decolourizer, especially for earlier glasses, and that a specific high-grade sand was chosen for the production of the majority of truly colourless glasses found in the north-west provinces throughout the Roman period. In these glasses, there is no evidence of recycling." Besides that, "[a] smaller subsample of less successfully decolorized glasses shows different compositional characteristics. These 'nearly colourless' glasses are either decolorized with manganese (around 1% and above), or with manganese and antimony together (~ 0.5%), where antimony acts as the stronger decolourizer. Manganese only appears at concentrations above 0.5%; below this level, it was possibly not deliberately added for this purpose. In these cases, the base glass composition, and hence the raw materials used to produce the glass, are similar in composition to those used for coloured glasses" (Ibidem). Therefore, when glass seems 'nearly colourless' the possibility might exist that this was not done deliberately and instead can somewhat be categorised as 'regular' coloured glass. However, it is clear that deliberately decolourized glass was deemed valuable. "During the Flavian period of the Roman Empire (69-86 CE) Romans became obsessed with colourless glass objects, due to the popularity of cut rock crystal vessels. Clear glass resembled the very expensive crystal and therefore provided a cheaper alternative" (Stern 2001, 130-131).

By mixing several of these colours together, Roman glassmakers were able to create decorative patterns in all kinds of shapes and sizes. The overarching category for this is called 'mosaic' glass which, in the vernacular, refers to all kinds of decoration types. An example of this is the millefiori glass pattern, which is "(…) composed of a multitude of similar tiny glass sections or segments, which were cut off from a long composite mosaic cane with a more or less complicated and variously coloured pattern" (Gedzevičiūtė *et al* 2009, 15). Millefiori glass, as it literally means 'thousand flowers', is a mosaic design which expresses itself in the shape of a floral pattern. The colour and precise shape of this pattern differ per vessel; however it is oftentimes one large circle surrounded by several smaller circles in a different colour.

Another decoration type found in Velsen I is that of the so-called 'reticella thread glass'. Although this term commonly refers to later medieval Venetian glass, this simple Roman predecessor was made as follows: "[g]lass rods made of more or less colourless

glass were placed alternately with one or two threads of opaque or coloured glass in a cylindrical shape. These rods and thread were then fused together into a single rod, which was drawn out lengthways and rotated around its axis a few times so that the threads would become entangled. Then the bars were flattened and placed in a mould while they were hot and connected to one another by pressing." (van Lith 1977, 9) In short, this is a relatively easy way of decorating by using the mould casting technique. Another example of decorative mould casting, or sometimes slumping, is that of the marbled glass technique. As many articles already suggest (Tesser *et al* 2019; Cunchillos *et al* 2013; Bradley 2006), the Romans were quite interested in imitating other stone products with the use of glass. This could provide a cheaper alternative, or could just be a matter of preferred styles. However, glass which somewhat imitates the appearance of marble already arrived in the earlier stages of Roman glass working. "Marbled glass was obtained by heating different coloured pieces of glass which then were stirred in a viscous state and brough into a mould." (van Lith 1977, 11)

Lastly, there are some fragments found which incorporate the so-called cameo-glass technique. This method is often regarded as a luxury form of glass art as it "(…) was difficult to produce; the creation of a multi-layered matrix presented considerable technical challenges, and the carving of the finished glass required a great deal of skill. The process was therefore intricate, costly, and time-consuming, and it has proved extremely challenging for modern glass craftsmen to reproduce." (Trentinella 2003) It was produced by creating layers of different coloured glass, quite often opaque white and a dark-coloured background, and carving away the layers to create a certain design.

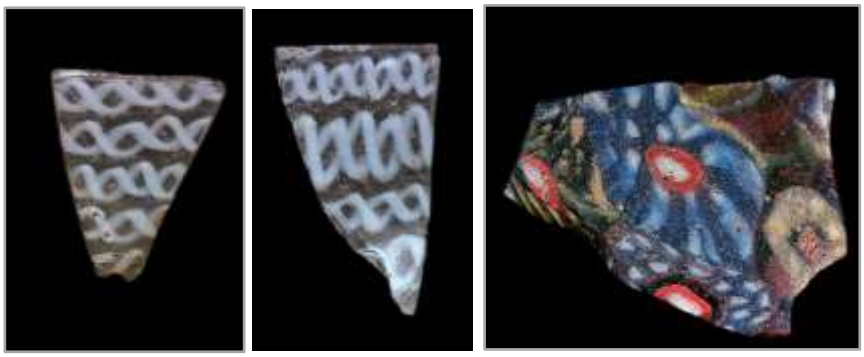


Figure 3: Examples of the reticella and millefiori glass from the assembly at Velsen I (Bosman 2016, 83).

5. Results

5.1 General Information

The Velsen I excavation unearthed a total of approximately 850 glass fragments, from which nearly 400 pieces were extremely small undeterminable wall fragments. Therefore, these fragments were not included in the datasets used for this thesis (van Lith 1977; van Lith & Isings 1981, 97 – 100), and hence no data could be realized on any of these fragments. This means that a total of 454 fragments were included within the new database of this research. This assembly can be divided into 231 fragments which have a determined Isings (1955) typology or other subdivision, as opposed to 65 undetermined fragments where only some basic form of function could be recognised. Furthermore, the database could be divided into 360 monochrome coloured fragments with no decoration, and 94 polychrome coloured fragments which had clear decorative aspects (table 1).

Determined	231
Undetermined	65
Other*	158
Monochrome	360
Polychrome	94
Part of Base	**32
Part of Wall	171
Part of Shoulder	20
Part of Rim	64
Undetermined	34
Not Applicable*	159

Table 1: General overview of the divisions within the glass assembly based on fragment type, determination, colour, and as to whether it has a location.
* Such as game pieces and beads
** The numbers exceed the total of fragments, as some fragments include multiple aspects

The database also allowed for a clear search and categorization based on function type, and typology. If combined with the column 'Possibly from Corresponding Vessel' it was also possible to estimate the minimum amount of vessels associated with these categories (table 2). Naturally, it is of note that this estimation is based upon a limited amount of data and only gives a rough sketch of possible find ratios.

Function type	Isings (1957)	Name	Fragments	Minimum Vessel Estimate
Bowl	Form 1	Deep and shallow bowls	15	11
	Form 2	Carinated bowl	5	5
	Form 3	Ribbed bowl	63	58
	Form 12	Deep bowl	19	18
	Form 17	Zarte rippenschalen	54	44
	Form 18	Shallow bowl	1	1
	UND	Undetermined bowl	1	1
Total			**158**	**138**
Cup	Form 12	Hemispherical cup	53	52
	UND	Undetermined cup	7	7
Total			**60**	**59**
Dish or Plate	Form 48	Cylindrical dish	4	4
	UND	Undetermined dish or plate	15	6
			19	**10**
Lid	Form 66a	Domed lid	2	2
Bottle	Form 51	Cylindrical bottle	2	1
Unguentarium	UND	Undetermined unguentarium	15	15
Handle	UND	Undetermined handle	1	1
Jug	UND	Undetermined jug	1	1
Bead	-	Smooth	17	17
	-	Biconical	5	5
	-	Flat	1	1
	-	Ring	2	2
	-	Segment	1	1
Total			**26**	**26**
Game Piece	-	Black	53	53
	-	White	58	58
	-	Other	21	21
Total			**132**	**132**
Other	Form 12	Deep bowl/hemispherical cup	11	11
	Plate/Bowl	Undetermined plate or bowl	2	2
	Jug/Bowl	Undetermined jug or bowl	2	2
	Kantharos/Chalice	Undetermined kantharos or chalice	2	2
	Kantharos/Goblet	Undetermined kantharos or goblet	1	1
	Plate/Urn	Undetermined plate or urn	1	1
	Bead/Needle point	Undetermined bead or needle point	1	1
	Undetermined	Undetermined fragment	18	16
Total			**454**	**421**

Table 2: Fragments categorized based on function type and Isings (1955) typology. The red colour emphasizes the values that differs between the two columns.

Furthermore, the database also allowed for clear data related to decoration types as shown within table 3. These decoration types were both clearly defined by Isings (1977) as well as interpreted by the detailed descriptions. As can be seen the monochrome glass vessels are most prevalent with a total of 360 different fragments. After that, the fragments with (often opaque white) spotting and threading are rather well represented within the data. Only a handful of cameo, millefiori, and reticella pieces were uncovered. These monochrome vessels are further explicated in table 4; based upon their primary and secondary colour explicitly named within the van Lith (1977) dataset. It is clear that, amongst the monochrome fragments, different shades of blue are occurring the most within the assembly. Especially if one treats the black and white game pieces as a different subcategory.

As can be seen the monochrome glass vessels are most prevalent with a total of 360 different fragments. After that, the fragments with (often opaque white) spotting and threading are rather well represented within the data. Only a handful of cameo, millefiori, and reticella pieces were uncovered. These monochrome vessels are further explicated in table 4; based upon their primary and secondary colour explicitly named within the van Lith (1977) dataset. It is clear that, amongst the monochrome fragments, different shades of blue are the occurring the most within the assembly. Especially if one treats the black and white game pieces as a different subcategory.

Decoration Type	Amount	Comments
Reticella glass	3	
Millefiori glass	4	
Marbled glass	27	3 game pieces
Cameo glass	10	
Spots or threads	50	29 Zarte rippenschalen
Monochrome	360	
Total	454	

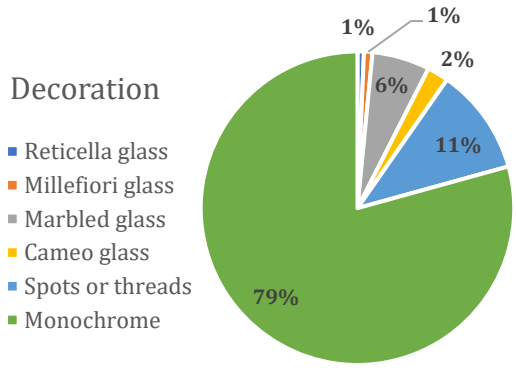


Table 3: An overview of all the different types of decoration present within the Velsen I glass assembly.

Prefix	1st Colour	2nd Colour	Amount	Comments
	Amber		12	
	Black	Green	16	
	Black	Blue	1	1 game piece
	Black		54	52 game pieces
Light	Blue	Green	56	
	Blue	Green	25	
Light	Blue		15	
Dark	Blue		9	
Peacock	Blue		1	
	Blue		41	5 game pieces; 8 beads
	Brown		7	1 bead
	Decolorized		17	
Emerald	Green		4	
Light	Green		6	
Dark	Green		1	
	Green		9	
Light	Purple		5	
Dark	Purple		1	
	Purple		12	4 game pieces
	White		61	58 game pieces (all are opaque)
	Yellow		2	1 bead; 1 game piece
	UND		5	Missing data in van Lith (1977)
Total			360	

Table 4: The amount of colours present within the monochrome glass assembly.

5.2 Decoration and Colour

As the dataset suggests in table 3 and 4, there are a myriad of decorations and colours included in the glass assembly of Velsen I. The assembly predominantly consists of monochrome coloured fragments (n = 360) as opposed to the polychrome decorated vessels (n = 94). These polychrome vessels could further be categorized as reticella thread glass (n = 3), millefiori glass (n = 4), marbled glass (n = 27), cameo glass (n = 10), and either spotting or threading (n = 50).

The three reticella thread glass fragments probably were a total of two Isings type 2 (1957, 17) bowls of almost colourless light blue green glass with opaque white threading. “Mainly hemispherical, smooth bowls without a stand ring were made from reticella thread glass” (van Lith 1977, 10). In general, the occurrence of this type of glass is relatively rare. “The only known parallel from the Netherlands is the fragment of an

Isings 1 type bowl from Vechten" (Ibidem). There is not much information regarding this decoration type, besides the notion that it only has a short existence up until the 1st century (Harden & Price 1971, 320). This is emphasized by similar findings in contemporaneous sites (e.g. Haltern, Vindonissa, Bibracte, Xanten, Cologne, Polhov Gradec, and Camulodunum) and the absence of reticella thread glass in later examples (e.g. Fishbourne, Valkenburg Z.H., and Hofheim) (van Lith 1977, 10). The precise meaning of this short existence remains unknown; however it is clear that the production technique was relatively straightforward. Furthermore, colourless glass is often related to more luxurious ware, however, as mentioned in the background information, the concept of 'nearly colourless' might be done accidentally and instead can be categorised as 'regular' coloured glass. In short, the context of the reticella thread glass still remains somewhat of a question, as it is relatively rare and understudied.

The millefiori glass on the other hand has a total of three vessels; two Isings type 2 bowls (1957, 17), whereas one undetermined fragment. Millefiori glass, currently more commonly known as 'mosaic glass', is widely considered high quality slumped glass. This high quality is correlated to the intensive production process, and uniqueness of the resulting vessels. Additionally, the glassmaker would need a large quantity of differently coloured glass; where studies indicate that "(…) Roman glassmakers often used a standard glass recipe, which was modified by the addition of various colourants, opacifying agents and further elements to produce certain special effects" (Gedzevičiūtė *et al* 2009, 26). The millefiori fragments alone include the colours amber, white, green, brown, yellow, dark blue, blue, red, yellow-green, and regular green. In the past, "(…) the technological level and practical conditions required to control *glassmaking* were significantly more complex than those needed for *glass working*" (Stern and Schlick-Nolte,1994; Stern 1999; Cagno *et al* 2013). Additionally, "[t]he large slabs of glass made in the primary centres were broken into chunks and shipped along various trade routes to the secondary workshops where glassworkers only needed to re-melt small amounts of the prefabricated raw glass to manufacture finished products" (Cagno *et al* 2013, 128). Therefore, not every workshop would have been able to produce these millefiori vessels, due to high level of expertise needed and possible limited accessibility to all these colouring agents. Furthermore, the intensive trade network necessary to obtain all these different colours would also increase the value of the glass product.

The class of 'marbled glass' is also relatively present in the glass assembly of Velsen I. As mentioned in the background information, this type of glass was created to imitate the outlook of marble stone products. A total of 3 game pieces, 12 ribbed bowls of Isings (1957) type 3 (17), 5 bowls of Isings type 1 (15), and 1 shallow bowl of Isings type 18 (36) (total of n = 21 objects). Several types of colours were used to produce these objects, however all of them were integrated with an opaque white mix. Although it is not as difficult to produce as other decoration types, marbled glass still requires special techniques and extra attention as opposed to common ware.

Another category is the so-called 'cameo glass' which has a total of 10 fragments of Isings type 12 (1957, 27) bowls or drinking vessels which van Lith (1977) was unable to link as corresponding vessels. These were found with an opaque white decoration and either a purple, amber, or blue background. "The tiny fragments from Velsen do not allow any conclusions to be drawn about the original shape of the overlay glasses - some of them are undoubtedly Isings 12 bowls, but undetermined engraved lines could only be found on one fragment" (van Lith 1977, 29). The concept of cameo-glass is widely accepted as a high-quality luxury product as the technique requires incredible craftmanship. Oftentimes, these pieces included complex iconography which could, for instance, display certain mythological scenes. "Cameo glass, the most difficult and costly of all Roman glass, was inspired by layered semi-precious stones. There are, for example, many Roman gems in cameo glass that were made as less expensive alternatives to real cameos in banded agate or sardonyx" (Lightfoot 2009, 7). Suffice to say, these ten fragments can be considered as luxury ware, and are extremely rare artefacts in the archaeological record.

The last decoration type present within the assembly is threading and spotting. This is a somewhat arbitrary category as it presents itself in various different ways, and predominantly consists of a simple and fast decoration technique. This threading is almost exclusively of an opaque white colour (n = 45); however a few examples include light purple (n = 2), yellow (n = 1), brown (n = 1) or light blue (n = 1). As this type of decoration simply included applying an extra layer of glass onto the monochrome vessel after cooling, it is a simple and relatively low-effort technique which could be applied on all sorts of vessels. Additionally, as the production technique does not matter for this technique, it can also be combined with blowing; which makes the vessel in general a type of common ware.

As can be seen in table 3, 79% of the assembly consists of monochrome glass fragments in a wide range of different colours.[7] Table 4 clearly shows that the colour blue is most prevalent, more specifically the colour 'light blue green' and the colour 'blue green' (n = 81). This is the colour of common unworked Roman glass. Therefore, it is safe to assume that these vessels are mostly linked to undecorated ordinary ware. Besides the 'natural' shades, "(…) blues, ambers, purples and emerald greens are the most common bright colours used during this time. Less common are opaque colours such as whites, reds, yellows, pale blues and glasses so dark as to appear black" (Jackson & Cottam 2015, 139). Table 4 shows that this observation somewhat concurs with the assembly of the monochrome vessels in Velsen, although there is significant addition in white and black pieces. However, when subtracting the game pieces and beads from this equation, the eventual result is somewhat similar to what the former quote suggests (table 5). Interestingly, the amount of decolorized and black fragments appear to be quite dominant as opposed to the purples, emerald green, and amber coloured pieces.

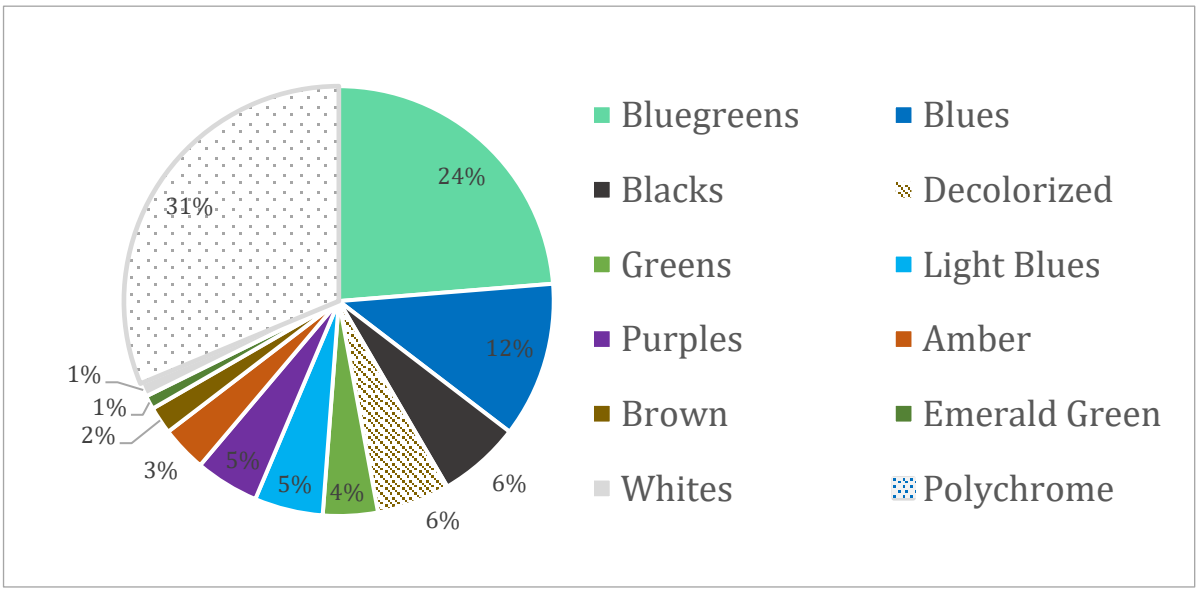


Table 5: Distribution of the colour patterns within the assembly. The graph shows all the monochrome vessel fragments, and therefore negates the game pieces, beads, and UND fragments.

[7] It is important to realise that nearly 400 undeterminable monochrome wall fragments were negated in the van Lith (1977) dataset, and therefore, especially colour-related, this percentage is possible highly skewed.

This small difference can probably be explained by the types of vessels found within the assembly. Several researches indicate that certain colour types are commonly found in certain types of vessels (Grose 1991; Jackson & Cottam 2015; Bidegray *et al* 2020). For instance, the 'emerald green' is often associated with blown ribbed bowls (Isings type 17), and almost never associated with the mould-pressed variant of the ribbed bowl (Isings type 3). As there are more moulded ribbed bowls present within the assembly, and fewer blown ribbed bowls[8] (who only sometimes include this colour); the skewed data would be a logical result.

In short, almost a quarter of the dataset includes blue-green monochrome natural glass fragments (24%). Additionally, roughly 22% of the dataset consists of relatively common colours (blues, greens, purples, and emerald greens). Therefore, one might say that, in terms of colour, approximately 46% of the dataset are part of modest and easily accessible common glassware. Furthermore, a total of 31% of the dataset consists of decorated polychrome vessels, which are valued higher. However, approximately 14% of this percentage (n= 41) is related to the 'threading and spotting' category, which, in general, can also be attributed to a relatively common decoration type. Therefore, a total of 17% of all the vessel fragments can be considered high-end luxury ware, as opposed to 60% as a common type of colour design. The remaining 23% include uncommon monochrome colour types which could be considered somewhat more valuable.

5.5 Glass Function

The function of the glass vessels found within the Velsen I site was derived from the typological classifications made by van Lith (1977). Although this initial classification was done in great detail, no further conclusions were drawn about the nature of the dataset in its entirety. As can be seen in table 2, a myriad of different typologies were included within the overall dataset. Subsequently, this thesis has created several overarching categories in order to showcase the distributions of the dataset. These overarching categories were created by looking at the predominant function of the Isings (1957) typology. As can be seen in table 6 the most dominant typological vessel is that of a bowl.

[8] Also often referred to as 'zarte rippenschalen'.

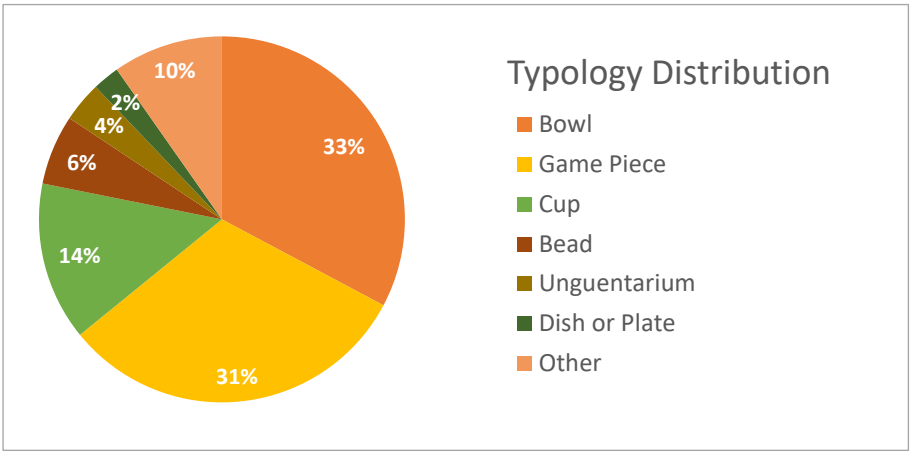


Table 6: Generalized distribution of the overall typological functions within the dataset. The data was derived from the categorizations made in table 2.

Approximately a third of the dataset consists of shapes that can be defined as a bowl, and they predominantly consist of the Isings (1957) mould-pressed ribbed bowl, form 3, and its blown counterpart of type 17. The Isings type 3 bowl is a quite common vessel type found in the 1st century CE. "(…) [R]ibbed bowls of the Isings 3 type are very common and are found in very similar quantities in Augst, Vindonissa, Oberwinterthur, Avenches and Lausanne" (Fünfschilling 2005, 75). However, the Velsen I archaeological site is often considered the most important site relating to form 17 (van Lith 1977, 29-38; van der Groen & van Rossum 2011, 39) as it has the most uncovered *zarte rippenschalen* in this region. These particular vessels are characterised as 'bowls' by van Lith (1977) and Isings (1957), however contemporary research also indicates that these vessels might have interchangebly been used as cups (van der Groen & van Rossum 2011, 39; Price & Cottam 1998, 67-68).

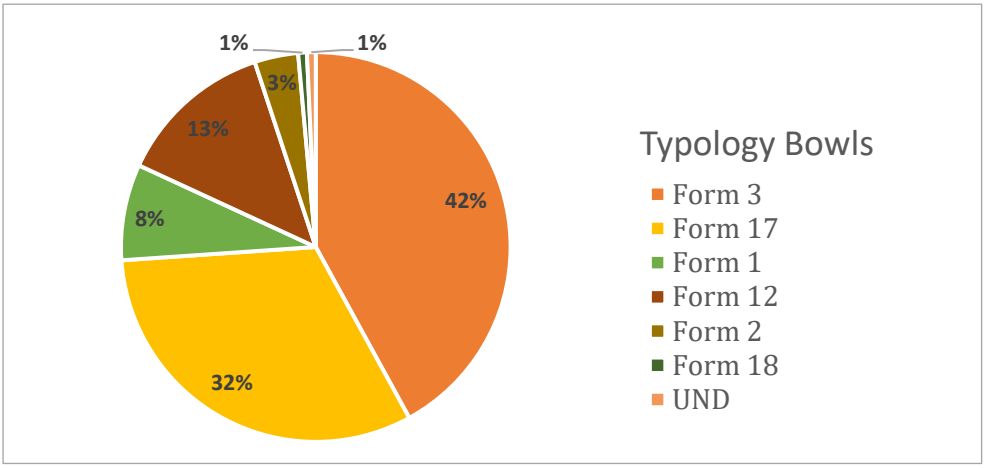


Table 7: Distribution of the forms within the overarching category of 'bowls'. As can be seen, the overall majority of this distribution consists of form 3 and form 17.

The category of 'cups' solely consists of the Isings typology 12: the free blown drinking vessel. This particular typology is compelling, as it is often interchangeably related to either a deep bowl or a hemispherical cup depending on the width and size of the vessel. This type of cup is often characterised as the most primitive form of drinking vessel, and frequently, this shape might also have been used as a bowl. Furthermore, there were three other fragments that might be placed within the drinking vessel category; one vessel displaying either a kantharos or a goblet, and the other two displaying either a kantharos or a chalice. The exact typology unfortunately remains undetermined for these particular fragments. However, both these vessel types are generally used for drinking, and are deemed much more luxurious than the common type 17 drinking vessel. These three particular shapes are often portrayed within ancient Greek pottery, and are quite rare in an early Roman context (Isings 1957, 50-54). In a Greek context, these types of vessels were eagerly decorated and often portrayed detailed mythological scenes, however the glass fragments found within the Velsen assembly are monochrome blue or purple fragments. Therefore, not much can be said about the value of these shapes, besides the fact that they are quite rare finds, and therefore would be deemed more valuable than the common Isings type 17 drinking vessels.

Furthermore, a total of 132 game pieces were uncovered in the excavation. The average height of the slightly convex playing discs is approximately 0.6 cm; with the exception of two specimens which are slightly larger. Interestingly, the amount of black and white specimens are roughly identical, with only a few more white than black pieces (van Lith 1977, 53-54). One can of course only guess which type of game was played with these particular pieces; however some have reconstructed it as a form of the contemporary tic-tac-toe (Calkoen 1960; van Lith 1977) This game was played with three of similar gaming pieces of a certain colour per person. "The frequent occurrence of discs from Velsen in groups of three pieces each and the ratio between white and black discs of 1:1 could support this reconstruction (…)" (van Lith 1977, 54). However, other games were also possible as can be seen with a possibly complete gaming set found in Colchester (Hall & Forsyth 2011, 1327; Crummy 2007, 352 – 359; Schädler 2007, 359 – 375) which included black and white game pieces for one game. However, after extensive research it was "(…) concluded that, on balance, the board game represented is perhaps best not seen as a known Roman game but as an unknown Celtic one" (Hall & Forsyth 2011, 1328). Unfortunately, as this excavation only resulted in the

unearthing of the pieces, and not the board they were used on, not much more can be said about the particular game played. Additionally, as similar pieces could exist from non-preserved materials, it is quite possible that these glass game pieces were in the minority, and therefore reserved for high-ranking officers. However, as this evidence is simply lacking, it is rather impossible to say anything conclusive on that part.

Another outlier within these categories is the high amount of beads found within the assembly. As can be seen in table 2, a total of 26 different beads were found which displayed a total of 5 different typological shapes (table 8):

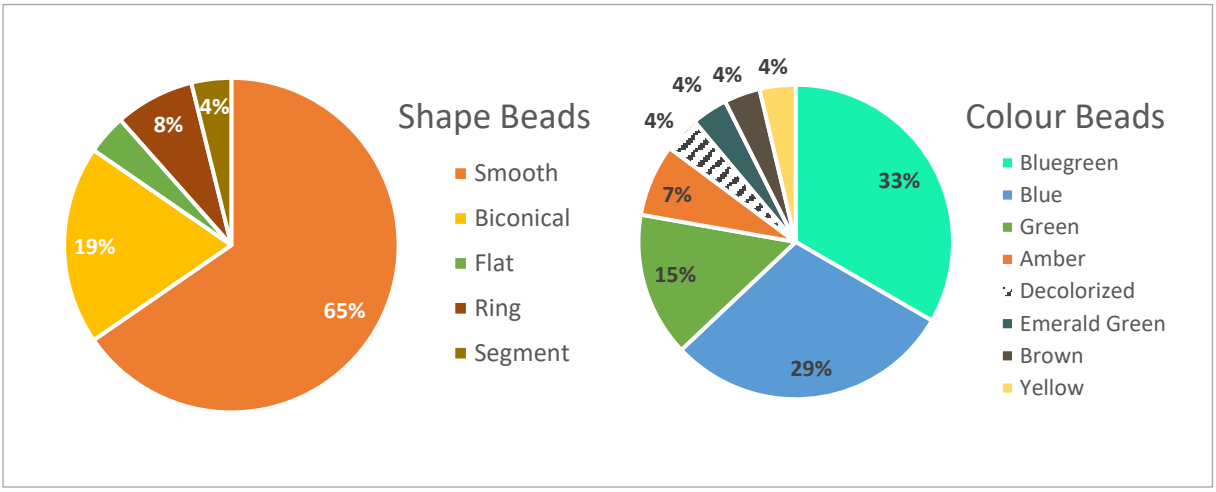


Table 8: To the left the distribution of the shapes within the overarching category of 'beads'. As can be seen, the overall majority of this distribution consists of smooth and biconical beads. The right chart shows the colour distribution of the beads.

All the beads are monochrome with the general majority presiding in the natural blue-green category. The subsequent categories are also relatively common colours as they include the blues, greens, and emerald greens. However, some of the beads include rarer colours when looking at the amber, yellow, and brown. According to Guido (1978, 12) these colours are considered "(…) as inlay in indigenous type armlets" in the context of the British Isles. The same source also indicates that "(…) blue glass was much used in the early Roman period" (Idem, 14). However, as this context is different, and no other such claims could be found in contemporary literature, these arguments might be outdated or irrelevant for this particular context. When looking at the shapes of the beads, most are shaped either smooth or biconical. The biconical are in general 'pressed', which means that "(…) [w]hile still half molten the incipient bead is pressed

into shape" (Guido 1978, 41). Whereas the rest of the beads were probably either drawn or hand-perforated. Not much more can be said about the nature of these specific beads, as the van Lith (1977, 48 – 50) data was rather limited. All in all, the beads are relatively simple and common. However, van Lith (Ibidem) does note the intriguing absence of the so called melon-shaped beads which are often found in Roman military contexts. (Böhme 1970; Schönberger 1978; Allison 2006)

Furthermore, a total of 10 fragments were attributed to the 'dish or plate' category. This category was defined by including flat and open vessels which are commonly used to contain food products. The dataset of van Lith (1977) identified 4 monochrome blue cylindrical dishes as the form 48 Isings (1957, 62 – 63). This particular vessel corresponds with the well-known Dragendorff 23 terra sigillata counterpart. The other 6 monochrome black-green vessels (or 15 fragments) unfortunately remained of an undetermined specific typology (table 2). Furthermore, 2 specific fragments were determined to be either a plate or a bowl as only the base was found and therefore no clear depth of the vessel could be established. The same goes for an undetermined monochrome amber fragment which was either a plate or an urn. As the context of a singular fragment of an urn within this military glass assembly would be highly irregular and remarkable, the fragment being part of a plate is far more likely.

The category that is defined as 'other' consists of the following fragments: 2 lids type 66a (Isings 1957, 85), 1 bottle of type 51 (Idem, 67- 69), 15 undetermined unguentaria fragments, 1 undetermined handle fragment, 1 undetermined jug, and, lastly, 1 undetermined fragment from either a jug or a bowl (table 2). The 2 lids are part of the so-called 'domed lids' which is the most common type of lids of this period (Isings 1957, 85). Although they are the same monochrome amber colour, include the same "shallow groove on the inside of the edge", and correspond in glass thickness, van Lith does not officially combine these two fragments as one. Due to the absence of other data, this claim cannot be established with complete certainty. The high bottle fragment of type 51b are also the most common type of bottle found in early Roman sites (Ibidem). Furthermore, these bottles were the natural light blue-green shade, and are therefore categorised with the regular glassware of this period. The 15 unguentaria fragments of this assembly unfortunately remain undetermined in terms of typology. It is most likely that these vessels were created by glassblowing; as many include compatible air bubbles and some include traces of the possible pontil scar at the

bottom. If that is in fact the case, it is expected that the Isings typology 6 to 9 are present within these fragments even though this is no longer possible to prove. The dataset of van Lith (1977) does mention that some of the fragments might correspond with form 8, which is the tubular unguentarium with constriction. This unguentarium was the most common perfume bottle of the 1st century (Isings 1957, 24). The last functional typology mentioned within this 'other' category is that of the 'jug'. There is little to no information presented about these two fragments besides their names and monochrome purple and amber colour. Therefore, not much can be said about these two particular fragments, besides that, jugs often contained liquids used for tableware.

Thus, there are numerous different kinds of typologies and functional categories present within the glass assembly of Velsen I. When looking solely at the vessels (e.g. excluding the beads and game pieces) more than half of the vessels can be attributed to the 'bowl' category, whereas 22% can be associated to 'cups'. As mentioned a few sentences above, both these categories incorporate a certain fluidity as Isings type 17 and 12 can be ascribed to both these attributes. Additionally, when looking at table 2 one can see that there are 11 fragments considered undetermined even though they were given the Isings 12 typology. This is due to van Lith's rigid distinction between the concept of 'cup' or 'bowl', when in reality, this distinction would have been more flexible. Therefore, a total of 4% from the 'UND Isings 12' category could also be included in either the 'cup' or 'bowl' category (table 9):

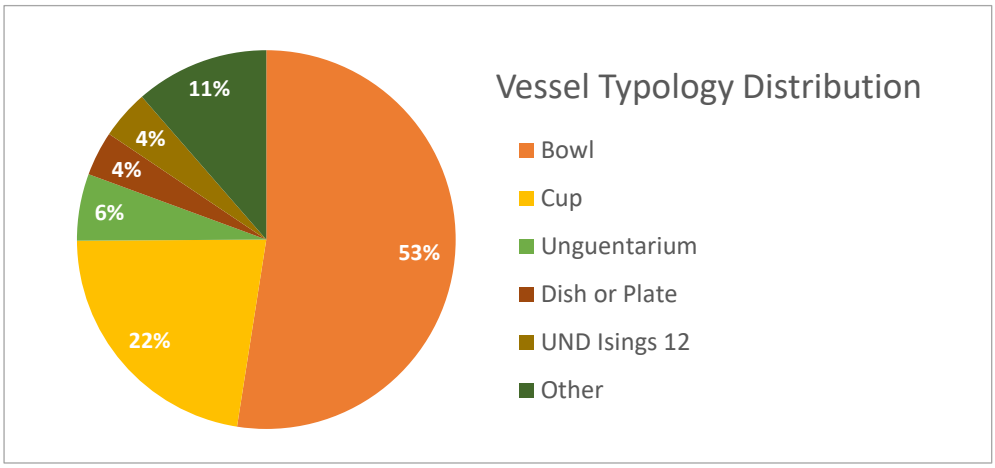


Table 9: Distribution of the vessel typologies present within the glass assembly of Velsen.

In the end, there is a clear homogeneity within the functional categories of the glass assembly of Velsen I. In general, the glass vessels are associated with subsistence and tableware, predominantly ribbed bowls and primitive blown cups. The only category that not directly associates to tableware is that of the unguentaria, which are linked to cosmetical products and are therefore often found in a bathhouse context. This homogeneity towards bowls and cups within the vessel glass is quite striking, as other contemporaneous sites often display a higher variety of different functional types, such as at the castra of Augusta Raurica where there is a clear preference for ribbed bowls, several types of jugs, square bottles, cylindrical cups, and multiple other pieces (Fünfschilling 2015, 229). Furthermore, even though such a homogeneity is somewhat expected in the first century, as "(…) the lack of definite type variations must be due, primarily, to different sources of supply and different customer spending power and preferences" (Fünfschilling 2005, 76), still, the variety in vessel types is comparatively low as opposed to most other sites, especially due to the meagre amount of jugs, bottles, and types of cups present.

However, when looking at the non-vessel fragments found within the assembly, it is clear that a large part of the dataset also consists of game pieces (31%) and beads (6%) (table 6). Especially the category of game pieces can be considered rather high, although it might be the case that these fragments have a higher chance of survival as they are more compact and less fragile than vessel fragments. Still, glass clearly played a large part in the pursuing entertainment within the Roman military fort of Velsen I.

6. Conclusion

The glass assembly of the 1st century CE Roman military harbour of Velsen I consists of a wide variety of different vessels. This thesis revolved around the following two research questions: '*What was the dominant function of glass within the assembly, and what can that say about the use of glass in daily life?*', and '*Is there a clear distinction of either common or luxury ware within the glass assembly, and if so, what can that say about the place of glass within the Roman military society?*' By translating the aforementioned results into conclusions related to these human aspects, several arguments can be established.

First of all, this research makes it clear that the people within the 1st century CE Roman harbour fort of Velsen I predominantly reserved glass for either food consumption, ornamentation, or entertainment. The distribution of the vessels within the dataset especially demonstrates an affinity to food consumption practices, as the overall majority of the fragments relate to either bowls or cups. Furthermore, this particular distinction becomes even more explicit if one accepts a more fluid definition of these overarching categories as opposed to the rigid distinction often adopted by typological frameworks. Although the glass dataset does include limitations in the number of fragments, inconsistency in the data provided, and a lack of imagery; the clear absence of glass in categories such as architecture (e.g. windowpanes or tesserae), tools, transport, jewellery, or larger display pieces still prioritizes this argument. The only vessel category which could slightly be linked to another functional category is that of the unguentaria, however these only take up a small portion of the entire dataset. The inhabitants of the fort especially expressed a predilection towards (ribbed) bowls and primitive blown cups, whereas some other contemporaneous sites often indicate a higher variety of different functional types. Especially the absence of jugs or cylindrical bottles is striking, as these are usually quite prevalent during this particular time period.

On the other hand, the non-vessel fragments solely consist of either beads or game pieces. The glass beads are all undecorated and monochrome, and can in general be characterised as being relatively modest specimens. Furthermore, the amount of beads uncovered in the Velsen I excavation is rather limited, as well as the absence of the so-called 'melon beads' is compelling, as these are often found within a Roman military context. Moreover, the amount of game pieces present within the assembly is

noticeably high, as a total of 132 pieces were uncovered at the excavation. Unfortunately, no conclusions can be drawn about the exact nature of the game, as neither the game board nor other evidence was found in relation to the applications of these pieces. It is certain however, that glass was incorporated extensively into the category of entertainment. This fondness for glass in this particular context might be explained due to the clear difference in colour, high durability as opposed to other organic counterparts, and a relatively easy and accessible method of production.

The analysis of the decoration and colour of the assembly indicates that, in general, more than half of the glass can be considered relatively modest and easily accessible common glassware. Approximately a quarter can be considered uncommon high-end luxury ware, and the remaining colours are uncommon types which could not necessarily be determined either luxurious or typical. Objects are often assumed to express social status and power in several ways, as artefacts can function as instruments used to represent someone's identity. Therefore, these vessels' socio-economic implications can function as a proxy for social status and power of their respective owners. In this particular case, there is a clear bifurcation of both economically accessible as well as costly types of decoration present. Hence, it might be safe to assume that glass had a certain dualistic status within the context of this archaeological site. This is not unexpected, as the social stratification within the military fort between senior officers and common soldiers was typical during this time period. Therefore, it is not surprising that this social stratification is translated into the glass assembly uncovered within the military harbour fort.

In short, the use of glass within the daily life of the Roman military fort of Velsen predominantly relates to that of food consumption as approximately half of the entire dataset can be assigned to that particular category. Glass bowls and cups were probably preferred as they are smooth, see-through, and odourless as opposed to their ceramic counterparts. These attractive qualities as well as the increasing accessibility to the 'industrialised' blown glass industry, made the product more and more appealing. Furthermore, there is a clear distinction visible within the richness of the dataset, which suggests that glass was both popular among the prosperous as well as the common public.

There are still countless of other research perspectives possible and necessary in relation to glass research of Germania Inferior. Currently, research regarding Roman

glass and its position in Roman society is rather limited as opposed to other material categories. Fortunately, many strides are taken in the chemical analysis of glass objects, which will certainly give an important insight into the provenance and production places of Roman glass. However, increasing the emphasis on glass research as an agent for social status, socio-economic implications, and empire-wide trade network systems might advance our understanding of the Roman empire. Therefore, this thesis has aspired to provide such a small insight into role of glass within the 1 century CE Roman military harbour fort of Velsen I.

Works Cited

Allison, P.M., 2006. Mapping for Gender. Interpreting Artefact Distribution inside 1st and 2nd-Century A.D. Forts in Roman Germany. *Archaeological Dialogues*, 13(*1*), 1 – 20.

Barag, D., 1985. *Catalogue of Western Asiatic Glass in the British Museum I*. London: British Museum.

Bidegray, A., K. Nys, A. Silvestri, P. Cosyns, W. Meulebroeck, H. Terryn, S. Godet & A. Ceglia, 2020.. 50 Shades of Colour: How Thickness, Iron Redox and Manganese/Antimony Contents Influence Perceived and Intrinsic Colour in Roman Glass*. Archaeological and Anthropological Sciences*, 12(109), 1 – 17.

Böhme, A., 1972. Der Fibeln der Kastelle Saalburg und Zugmantel. *Saalburg*, 29(*1*), 5 – 112.

Bosman, A.V.A.J., 1997. *Het Culturele Vondstmateriaal van de Vroeg-Romeinse Versterking Velsen 1*. Proefschrift Universiteit van Amsterdam: Amsterdam.

Bosman, A.V.A.J., 2016. *Rome aan de Noordzee: Burgers en Barbaren te Velsen*. Sidestone Press: Leiden, ISBN 978-90-8890-363-2.

Bradley, M., 2006. Colour and Marble in Early Imperial Rome. *The Cambridge Classical Journal*, 52(1), 1 – 22.

Cagno, S., P. Cosyns, A. Izmer, F. Vanhaecke, K. Nys & K. Janssens, 2014. Deeply Colored and Black-Appearing Roman Glass: A Continued Research. *Journal of Archaeological Science*, 42(1), 128 – 139.

Calkoen, H.J. 1953. Een Romeins Spel met Speelschijfjes. *Westerheem,* 2(*1*), 122 – 123.

Calkoen, H.J. 1960. Over Speelschijfjes en Antieke Spelen. *Westerheem,* 9(*1*), 23 – 43.

Crummy, P. 2007. The Gaming Board in CF47: the Remains as Found, Possible Reconstructions and Post-Depositional Movements, in P. Crummy, S. Benfield, N. Crummy, V. Rigby & D. Schimmin (eds.) *Stanway: an Elite Burial Site at Camulodunum*. London: Society for the Promotion of Roman Studies.

Cunchillos, M.C., E.O.P. Peralta & J.A.P. Peralta, 2013. Not Everything is as it Seems: Imitation Marbles and Semi-Precious Stones in Roman Glass. *Madrider Mitteilungen*, 54(1), 275 – 299.

Dragendorff, H. & C. Watzinger, 1948. *Arretinische Reliefkeramik : mit Beschreibung der Sammlung in Tübingen*. Reutlingen: Gryphius-Verlag.

Dries, F.M.A., van den, 2007. *Breekbaar Verleden: Romeins Glas in de Lage Landen*.

Stichting Matrijs: Utrecht, ISBN 978-90-5354-326-1.

Driessen, M.J., 2014. The Roman Harbours of Velsen and Voorburg-Arentsburg (NL), in H. Kennecke (eds.), *Der Rhein als Europäische Verkeehrsachse – Die Römerzeit*, Bonn: Bonner Beträge zur Vor- und Frühgesschichtlichen Archäologie 16, 209 – 228.

Fünfschilling. S., 2005. Augusta Raurica: Regionality and Internationality – Questions and Answers given by the Glass, in P. Coysins, (eds.) *Roman Glass in Germania Inferior: Interregional Comparisons and Recent Results*. Provinciaal Gallo-Romeins Museum: Tongeren.

Fünfschilling, S., 2015. *Die Römischen Gläser aus Augst und Kaiseraugst: Kommentierter Formenkatalog und Ausgewählte Neufunde 1981-2010 aus Augusta Raurica.* Muttenz: Augusta Raurica. ISBN: 978-3-7151-0051-7.

Gedzevičiūtė, V., N. Welter, U. Schlüssler & C. Weiss, 2009. Chemical Composition and Colouring Agents of Roman Mosaic and Millefiori Glass, Studied by Electron Microprobe Analysis and Raman Microspectroscopy. *Archaeological and Anthropological Sciences*, 1(1), 15 – 29.

Groen, J., van den & H. van Rossum, 2011. *Romeins Glas uit Particulier Bezit*. Matrijs: Utrecht, ISBN 978-90-5345-430-5.

Hall, M.A. & K. Forsyth, 2011. Roman Rules? The Introduction of Board Games to Britain and Ireland. *Antiquity*, 85(*1*), 1325 – 1338.

Harding, B.C. & A.J. Price, 1971. The Glass, in B. Cunliffe, *Excavations at Fishbourne*. Leeds: W. S. Maney and Son Ltd, 317 – 367.

Isings, C., 1957. *Roman Glass from Dated Finds*. J.B. Wolters Groningen: Groningen.

Jackson, C.M., 2005. Making Colourless Glass in the Roman Period. *Archaeometry*, 47(4), 763 – 780.

Jackson, C.M. & S. Cottam, 2015. 'A Green Thought in a Green Shade'; Compositional and Typological Observations Concerning the Production of Emerald Green Glass Vessels in the 1st Century A.D.. *Journal of Archaeological Science*, 61(1), 139 – 148.

Jackson-Tal, R.E., 2016. The Glass from the 1995 Excavations in Camp F at Masada: The Use of Luxury and Common Early Roman Glass in Military Context. *The Journal of the Council for British Research in the Levant*, 48(1), 63 – 78.

Lange, S., de, 2021. *The Wooden Artefacts form the Early Roman Fort Velsen I*. Cultural Heritage Agency of the Netherlands: Amersfoort.

Lightfoot, C., 2009. "Luxury Arts of Rome" In Heilbrunn Timeline of Art History. New York: The Metropolitan Museum of Art: Department of Greek and Roman Art. https://www.metmuseum.org/toah/hd/luxu/hd_luxu.htm

Lith, S.M.E., van, 1977. *Römische Glas aus Velsen*. Oudheidkundige Mededelingen uit het Rijksmuseum van Oudheden te Leiden, LVIII, 1 – 62.

Lith, S.M.E., van & C. Isings, 1981. Recent Finds of Roman Glass from the Netherlands: Roman Glass from Velsen, Annales du 8e Congrès de l'Association Internationale pour l'Histoire du Verre 1981, 97 – 102.

Lith, S.M.E., van, 2009. *Römische Glas aus Nijmegen*. Rijksdienst voor het Cultureel Erfgoed: Amersfoort.

Morel, J.M.A.W., 1988. *De Vroeg-Romeinse Versterking te Velsen 1: Fort en Haven*. Proefschrift Universiteit van Amsterdam: Amsterdam.

Price, J. & S. Cottam, 1998. *Romano-British Glass Vessels: A Handbook*. York: Council for British Archaeology.

Schädler, U. 2007. The Doctor's Grave: New Light on the History of Ancient Board Games, in P. Crumm, S. Benfield, N. Crummy, V. Rigby & D. Shimmin (eds.) *Stanway: an Elite Burial Site at Camulodunum*. London: Society for the Promotion of Roman Studies.

Schönberger, H., 1978. *Kastell Oberstimm, die Grabungen von 1968 bis 1971*. Berlin: Römisch-Germanische Kommision.

Stern, E.M., 1999. Roman Glassblowing in a Cultural Context. *American Journal of Archaeology*, 103(3), 441 – 484.

Stern, E.M., 2001. *Roman, Byzantine, and Early Medieval Glass: 10 BCE-700 CE Ernesto Wolf collection*. New York: Hatje Cantz Publishers. ISBN: 978-37-7579-042-0.

Tesser, E., M. Verità, L. Lazzarini, R. Falcone, L. Saguì & F. Antonelli, 2019. Glass Imitation of Exotic Marbles: An Analytical Investigation of 2nd Century AD Roman Sectilia from the Gorga Collection. *Journal of Cultural Heritage*, 42(1), 202 – 212.

Trentinella, R., 2000. "Roman Glass" In Heilbrunn Timeline of Art History. New York: The Metropolitan Museum of Art: Department of Greek and Roman Art. http://www.metmuseum.org/toah/hd/rgls/hd_rgls.htm

Trentinella, R., 2003. “Cameo Glass” In Heilbrunn Timeline of Art History. New York: The Metropolitan Museum of Art: Department of Greek and Roman Art. https://www.metmuseum.org/toah/hd/rcam/hd_rcam.htm’

Trigger, B., 2007. *A History of Archaeological Thought*. West Nyack: Cambridge University Press. ISBN: 978-05-2160-049-1.

Uzonyi, I., K. Csontos, A. Verebes, C. Cserháti, L. Csedreki, M. Kis-Varga & Á.Z. Kiss, 2011. Characterization of a Millefiori Glass Find from Aquincum by SEM-EDX and Micro-PIXE methods*. Elsevier: Nuclear Instruments and Methods in Physics Research B*, 296(1), 2389 – 2392.

Vos, P., J. de Koning & R. van Eerden, 2015. Landscape History of the Oer-IJ Tidal System, Noord Holland (the Netherlands). *Netherlands Journal of Geosciences – Geologie en Mijnbouw*, 94(4), 295 – 332.

Tables and Figures

Appendices

Appendix 1: The north-western part of the Netherlands, with the location of the former IJ-lake and the silted-up tidal area of the Oer-IJ inlet system (Vos et al 2015, 296)

Appendix 2: Sketches of the consecutive phases found within the Velsen I excavation (Driessen & van Driel-Murray forthcoming; Driessen 2014, 211; Lange 2021, 23 – 26)

Appendix 3: Database for fragments with an Isings (1955) typology

Appendix 4: Database of Undetermined Glass Fragments, Beads, and Game Pieces

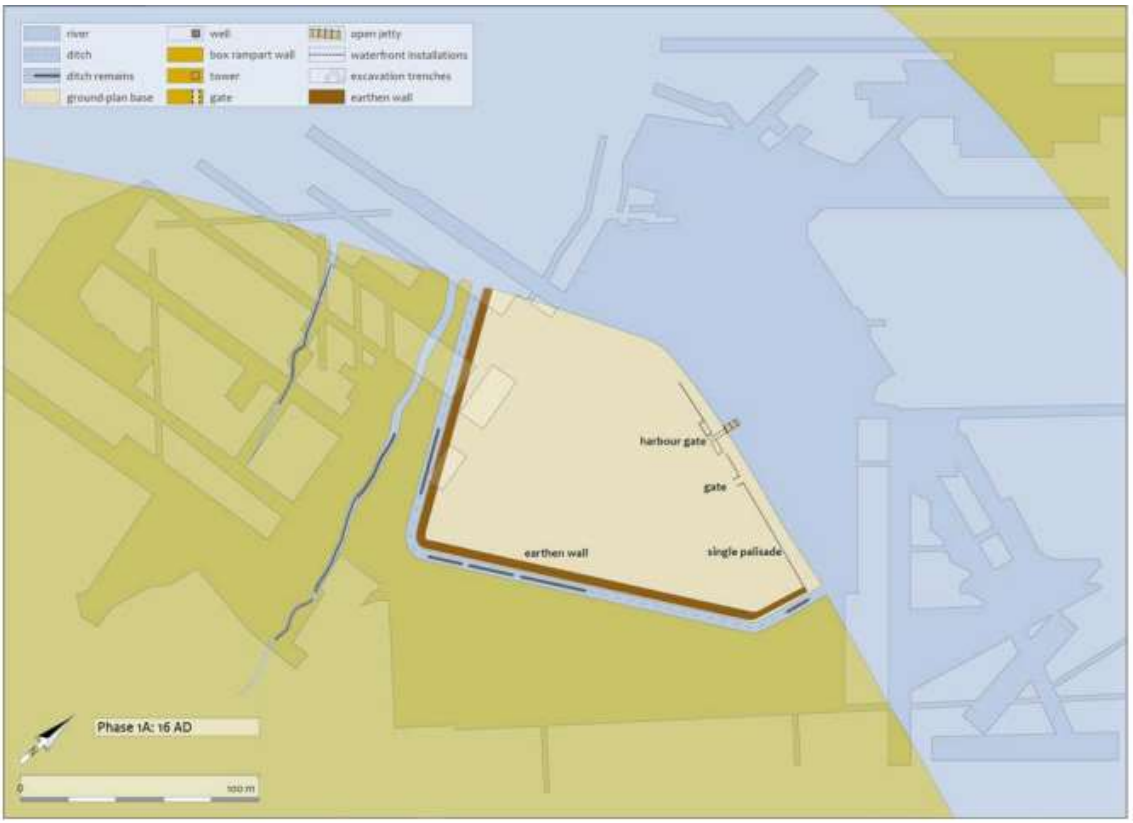
Appendix 5: Database from van Lith (1981)

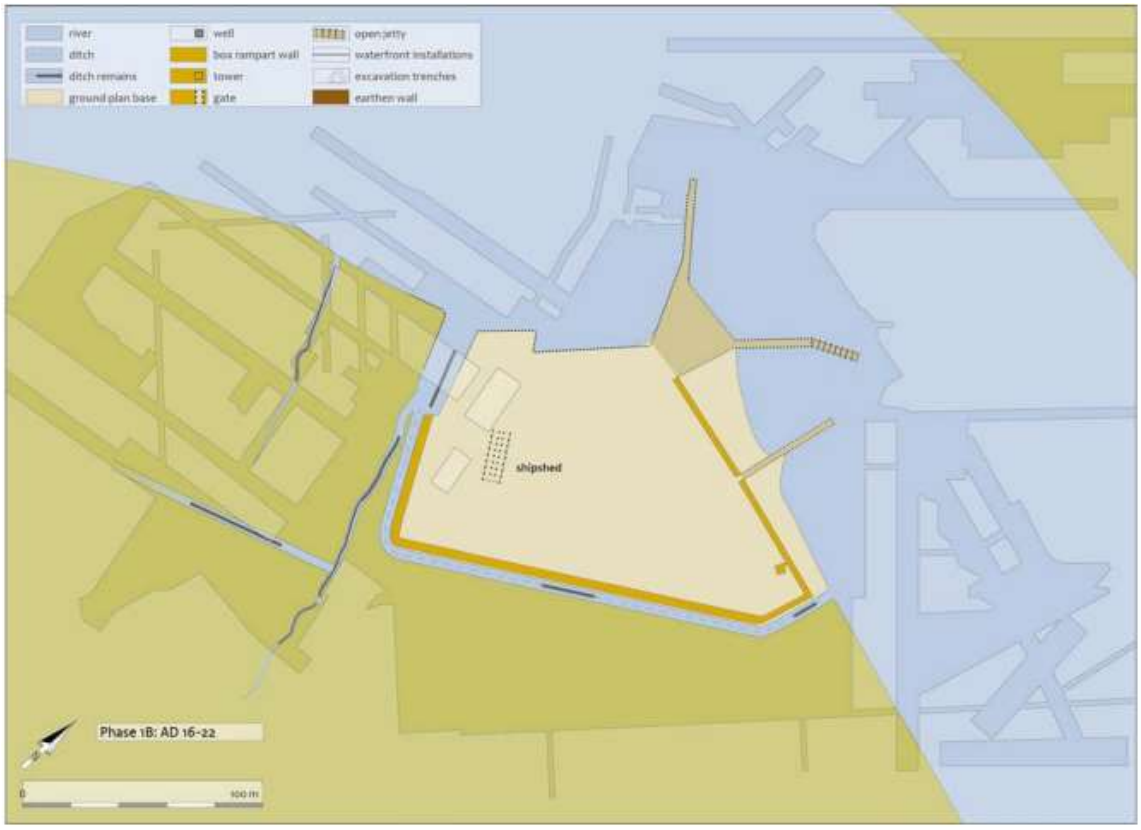
Appendix 1: Oer-IJ Tidal Inlet System

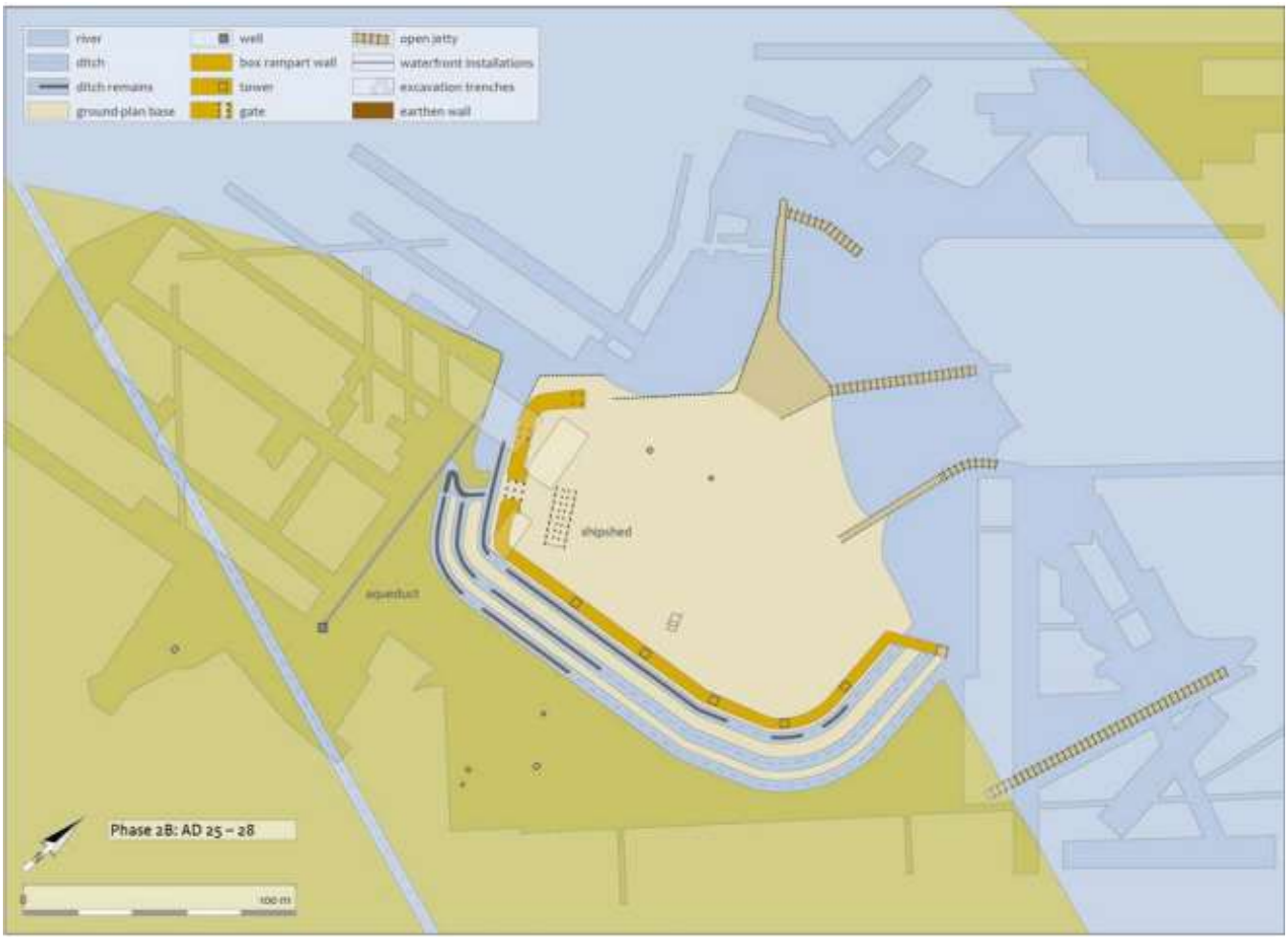
The north-western part of the Netherlands, with the location of the former IJ-lake and the silted-up tidal area of the Oer-IJ inlet system (Vos *et al* 2015, 296)

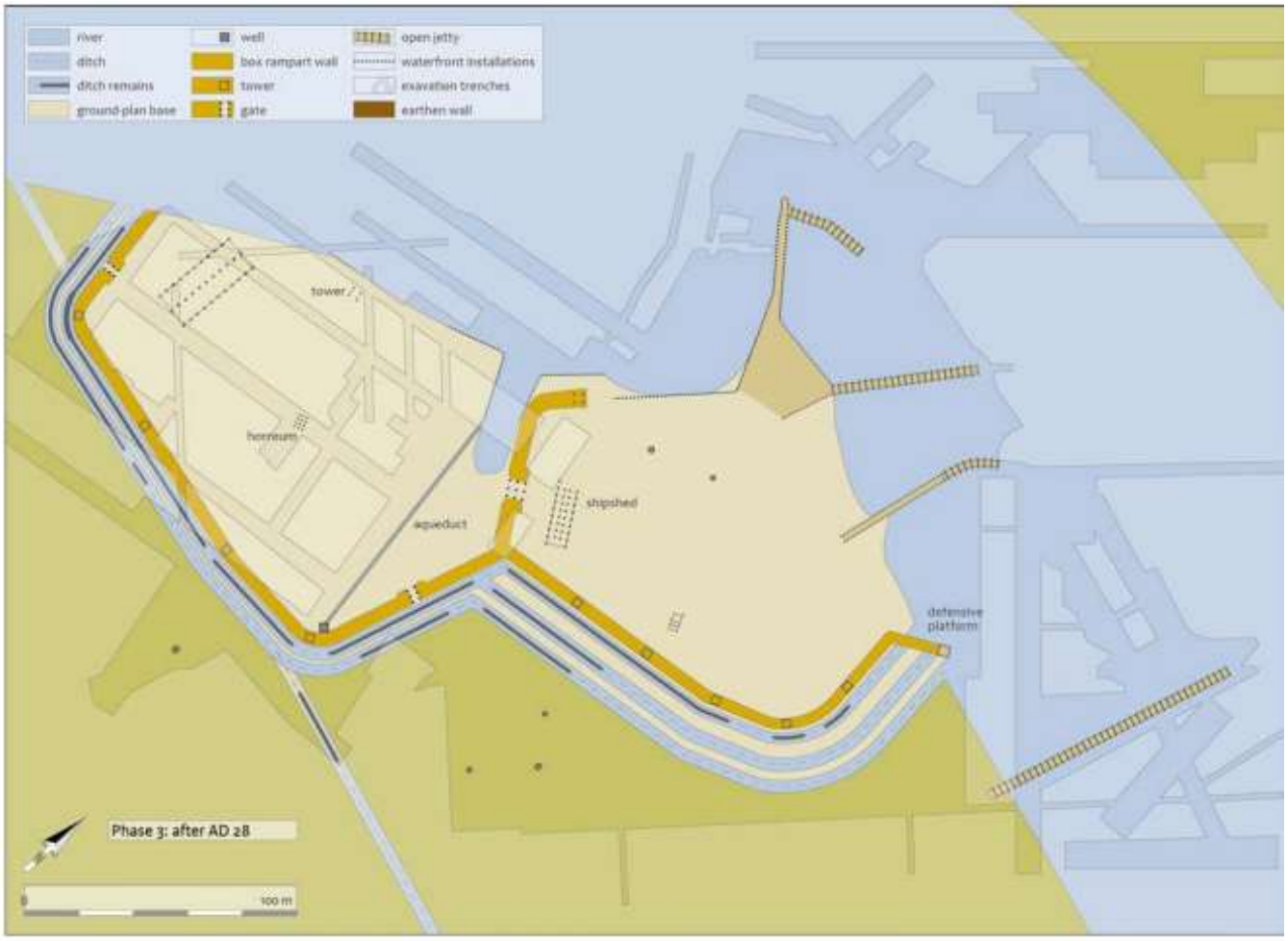
Appendix 2: Construction Phases Velsen I

Sketches of the consecutive phases found within the Velsen I excavation (Driessen & van Driel-Murray forthcoming; Driessen 2014, 211; Lange 2021, 23 – 26).






river
ditch
ditch remains
ground-plan base
well
box rampart wall
tower
gate
open jetty
waterfront installations
excavation trenches
earthen wall
shipshed
aqueduct
Phase 2B: AD 25 – 28
100 m


river
ditch
ditch remains
ground-plan base
well
box rampart wall
tower
gate
open jetty
waterfront installations
excavation trenches
earthen wall
tower
horreum
aqueduct
shipshed
defensive platform
Phase 3: after AD 28
100 m

Appendix 3: Database for Fragments with an Isings (1957) Typology

ID	Find Yea	Object Name	Find Nr	Fragment	Function	Glass Production	Isings	Colour	Light/Dark	Primary Colour	Secondary Colour	Glass Thickness
1	1975	Bowl from Reticella Thread Glass	K100	Base and Wall	Bowl	Reticella Thread Glass	1	Polychrome	Light	Blue	Green	0.2
2	9999	Bowl from Reticella Thread Glass	9999	Base and Wall	Bowl	Reticella Thread Glass	1	Polychrome	Light	Blue	Green	0.2
3	1976	Bowl from Reticella Thread Glass	*	Wall	Bowl	Reticella Thread Glass	1	Polychrome	Light	Blue	Green	0.15 - 0.2
4	1975	Smooth Bowl from Marbled Glass	L103	Base and Wall	Bowl	Marbled Glass	1	Polychrome	na	Purple	na	0.3
5	9999	Smooth Bowl from Marbled Glass	*(L103)	Wall	Bowl	Marbled Glass	1	Polychrome	na	Purple	na	0.3
6	1974	Smooth Bowl from Marbled Glass	Q70	Rim and Wall	Bowl	Marbled Glass	1	Polychrome	na	Purple	na	0.3
7	9999	Smooth Bowl from Marbled Glass	9999	Rim and Wall	Bowl	Marbled Glass	1	Polychrome	na	Purple	na	0.25
8	1975	Smooth Bowl from Marbled Glass	N95	Arched Wall	Bowl	Marbled Glass	1	Polychrome	na	Purple	na	0.2
9	1975	Bowl from Millefioriglass	M100	Rim and Wall	Bowl	Millefioriglass	2	Polychrome	na	Green	Brown	0.2 - 0.4
10	1974	Sapgreen Bowl	X76	Rim and Wall	Bowl	Mould Pressed Glass	2	Monochrome	na	Green	na	0.2 - 0.25
11	1975	Black and Green Bowl	K104	Rim	Bowl	Mould Pressed Glass	2	Monochrome	na	Black	Green	0.2
12	1975	Marbled Ribbed Bowl	L99	Shoulder	Bowl	Marbled Glass	3	Polychrome	na	Purple	na	na
13	1974	Marbled Ribbed Bowl	AK70	Wall	Bowl	Marbled Glass	3	Polychrome	na	Amber	na	na
14	1974	Marbled Ribbed Bowl	N78	Wall	Bowl	Marbled Glass	3	Polychrome	na	Blue	na	na
15	1974	Marbled Ribbed Bowl	M76	Wall	Bowl	Marbled Glass	3	Polychrome	na	Blue	na	na
16	1974	Marbled Ribbed Bowl	O89	Wall	Bowl	Marbled Glass	3	Polychrome	na	Blue	na	na
17	1974	Marbled Ribbed Bowl	P75	Wall	Bowl	Marbled Glass	3	Polychrome	na	Blue	na	na
18	1974	Marbled Ribbed Bowl	9999*	Wall	Bowl	Marbled Glass	3	Polychrome	na	Blue	na	na
19	1974	Marbled Ribbed Bowl	AJ76	Wall	Bowl	Marbled Glass	3	Polychrome	na	Blue	na	na
20	1974	Marbled Ribbed Bowl	M76	Wall	Bowl	Marbled Glass	3	Polychrome	Dark	Blue	na	na
21	1976	Marbled Ribbed Bowl	AQ78*	na	Bowl	Marbled Glass	3	Polychrome	na	Green	White	na
22	1974	Ribbed Bowl	T75	Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	White	na	0.3 - 0.35
23	1975	Ribbed Bowl	M98	Lower Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Black	na	0.5
24	9999	Ribbed Bowl	9999	Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Black	na	na
25	1974	Ribbed Bowl	Y78	Rim, Wall and Base	Bowl	Mould Pressed Glass	3	Monochrome	na	Amber	na	0.3
26	1976	Ribbed Bowl	I94	Rim	Bowl	Mould Pressed Glass	3	Monochrome	na	Amber	na	0.3
27	9999	Ribbed Bowl	9999	Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Amber	na	na
28	1975	Ribbed Bowl	9999*	Rim	Bowl	Mould Pressed Glass	3	Monochrome	na	Amber	na	0.3
29	1975	Ribbed Bowl	L76	Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Brown	na	na
30	1973	Ribbed Bowl	K74	Shoulder	Bowl	Mould Pressed Glass	3	Monochrome	Dark	Blue	na	na
31	1974	Ribbed Bowl	AM82	Lower Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Blue	na	na
32	1974	Ribbed Bowl	K75	Lower Wall	Bowl	Mould Pressed Glass	3	Monochrome	Dark	Blue	na	na
33	1975	Ribbed Bowl	L102	Wall	Bowl	Mould Pressed Glass	3	Monochrome	Dark	Blue	na	na
34	1974	Ribbed Bowl	AI74	Lower Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Blue	na	na
35	1974	Ribbed Bowl	O87	Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Blue	na	na
36	1974	Ribbed Bowl	9999	Base	Bowl	Mould Pressed Glass	3	Monochrome	na	Blue	na	na
37	1975	Ribbed Bowl	K75	Rim	Bowl	Mould Pressed Glass	3	Monochrome	Dark	Blue	na	0.3
38	1974	Ribbed Bowl	K90	Wall	Bowl	Mould Pressed Glass	3	Monochrome	Dark	Blue	na	0.15
39	1974	Ribbed Bowl	M75	Base	Bowl	Mould Pressed Glass	3	Monochrome	Dark	Blue	na	0.2
40	1974	Ribbed Bowl	P88	IDEM*	Bowl	Mould Pressed Glass	3	Monochrome	IDEM*	IDEM*	na	0.2
41	1974	Ribbed Bowl	Q74	Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Blue	na	na
42	1974	Ribbed Bowl	Q75	Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Blue	na	na
43	1974	Ribbed Bowl	L89	Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Blue	na	na
44	1974	Ribbed Bowl	K90	Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Blue	na	na

ID	Decoration	Decoration Colour	Thickness Decora	Comments on Decoration	Amount of Ribs	Opaque	Iridescent	Translucent	Possibly from corresponding vessel
1	Reticella Threading	White	0.25 - 0.5	The threads are opaque	na	☐	☐	☑	ID 2, FN 9999
2	Reticella Threading	White	0.25 - 0.5	The threads are opaque	na	☐	☐	☑	K100
3	Reticella Threading	White	0.2 - 0.25	The threads are opaque	na	☐	☐	☑	na
4	Irregular Rods	White	na	na	na	☐	☐	☐	ID 5, FN 9999*
5	Irregular Rods	White	na	na	na	☐	☐	☐	L103
6	Irregular Rods	White	na	na	na	☐	☑	☐	na
7	Irregular Rods	White	na	na	na	☐	☑	☐	N95
8	Irregular Rods	White	na	na	na	☐	☐	☐	ID 7, FN 9999
9	Floral Pattern	White/Yellow/Blue/Red/Green	na	na	na	☐	☐	☐	na
10	na	na	na	na	na	☑	☐	☐	na
11	na	na	na	na	na	☐	☑	☐	na
12	Spirals	White	na	na	1	☐	☑	☐	na
13	Rods and Spirals	White	na	na	1	☐	☐	☐	na
14	Spirals and Spots	White and Yellow	na	The spirals are white the spots are yellow	1	☐	☐	☐	M76; possibly also with O89 and P75
15	Spirals and Spots	White and Yellow	na	The spirals are white the spots are yellow	1	☐	☐	☐	N78; possibly also with O89 and P75
16	Spirals and Spots	White and Yellow	na	The spirals are white the spots are yellow	1	☐	☐	☐	Possibly with N78, M76 and P75
17	Spirals and Spots	White and Yellow	na	The spirals are white the spots are yellow	1	☐	☐	☐	Possibly with N78, M76 and O89
18	Spirals and Spots	White	na	Spirals on the outside and spots on the inside	1	☐	☐	☐	AJ76
19	Spirals	White	na	na	1	☐	☐	☐	ID 18, FN 9999*
20	Spirals	White	na	na	1	☐	☐	☐	na
21	na	na	na	na	na	☐	☐	☐	na
22	na	na	na	na	2	☑	☐	☐	na
23	na	na	na	na	1	☐	☐	☐	na
24	na	na	na	na	1	☐	☐	☐	na
25	na	na	na	na	10	☐	☐	☐	na
26	na	na	na	na	1	☐	☐	☐	na
27	na	na	na	na	1	☐	☐	☐	na
28	na	na	na	na	1	☐	☐	☐	na
29	na	na	na	na	1	☐	☐	☐	na
30	na	na	na	na	na	☐	☐	☐	na
31	na	na	na	na	2	☐	☐	☐	na
32	na	na	na	na	2	☐	☐	☐	na
33	na	na	na	na	1	☐	☐	☐	na
34	na	na	na	na	1	☐	☐	☐	na
35	na	na	na	na	1	☐	☑	☐	na
36	na	na	na	na	6	☐	☐	☐	na
37	na	na	na	na	na	☐	☐	☐	na
38	na	na	na	na	1	☐	☐	☐	na
39	na	na	na	na	2	☐	☐	☐	na
40	na	na	na	na	IDEM*	☐	☐	☐	IDEM* to ID 39?
41	na	na	na	na	1	☐	☐	☐	na
42	na	na	na	na	1	☐	☐	☐	na
43	na	na	na	na	1	☐	☐	☐	na
44	na	na	na	na	1	☐	☐	☐	na

ID	Comment on Ribs	Diametre	Thickness Rim	Height Rim	Vessel Height	Damage	Extra Comments
1	na	na	na	na	na	na	Glass is almost colourless
2	na	na	na	na	na	na	Glass is almost colourless
3	na	na	na	na	na	na	Glass is almost colourless
4	na	12	na	na	na	na	na
5	na	na	na	na	na	na	na
6	na	na	na	na	na	na	na
7	na	na	na	na	na	na	na
8	na	na	na	na	na	Heavily weathered	Very small fragment
9	na	10	0.4 - 0.5	na	na	The rim is molten on the outside	Corresponds with form Dragendorff 27.
10	na	7	na	na	na	Brown spotted weathering	Corresponds withform of Dragendorff 27
11	na	na	0.5	na	na	na	na
12	Broad and flat	na	na	na	na	na	na
13	na	na	na	na	na	na	na
14	na	na	na	na	na	na	na
15	na	na	na	na	na	na	na
16	na	na	na	na	na	na	na
17	na	na	na	na	na	na	na
18	na	na	na	na	na	na	na
19	na	na	na	na	na	na	na
20	na	na	na	na	na	na	na
21	na	na	na	na	na	na	na
22	Thickness is 0.9, distance between ribs is 1.05-1.15, they are narrow, strongly profiled.	na	na	na	na	na	na
23	The rib is located relatively high	na	na	na	na	Lightly weathered	na
24	na	na	na	na	na	na	na
25	The ribs are tapered towards the bottom and run at an angle.	15.5	na	1.5	5	na	On the inside, at the top of the edge, a narrow groove is visi
26	na	na	na	na	na	na	Narrow, shallow groove on the inside
27	na	na	na	na	na	na	na
28	na	na	na	na	na	na	On the inside a narrow, shallow groove. Certainly not relate
29	na	na	na	na	na	na	na
30	na	na	na	na	na	na	na
31	na	na	na	na	na	na	Two engraved grooves on the inside
32	na	na	na	na	na	Strongly weathered	na
33	na	na	na	na	na	na	na
34	na	na	na	na	na	na	On the inside are two engraved grooves
35	na	na	na	na	na	na	na
36	Only the ends are visible; ribs are also closely spaced.	na	na	na	na	na	na
37	na	na	na	na	na	na	On the inside, a 0.15 wide, shallow groove. Rounded at the
38	na	na	na	na	na	na	Inside is sanded to matt finish
39	Ribs are shallow and located close to eachother. The ribs dont continue to the bottom.	na	na	na	na	na	The inside is sanded to a matt finish
40	IDEM*	na	na	na	na	na	IDEM*
41	na	na	na	na	na	na	na
42	na	na	na	na	na	na	na
43	na	na	na	na	na	na	na
44	na	na	na	na	na	na	na

ID	Find Yea	Object Name	Find Nr	Fragment	Function	Glass Production	Isings	Colour	Light/Dark	Primary Colour	Secondary Colour	Glass Thickness
45	1974	Ribbed Bowl	O89	Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Blue	na	na
46	1974	Ribbed Bowl	9999	Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Blue	na	na
47	1974	Ribbed Bowl	9999	Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Blue	na	na
48	1974	Ribbed Bowl	9999	Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Blue	na	na
49	1974	Ribbed Bowl	9999	Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Blue	na	na
50	1974	Ribbed Bowl	9999	Rim and Wall	Bowl	Mould Pressed Glass	3	Monochrome	Light	Blue	Green	na
51	1973	Ribbed Bowl	H79	Wall and Rim	Bowl	Mould Pressed Glass	3	Monochrome	Light	Blue	Green	na
52	9999	Ribbed Bowl	9999	Lower Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Blue	Green	na
53	1975	Ribbed Bowl	K93	Upper Wall and Rim	Bowl	Mould Pressed Glass	3	Monochrome	Light	Blue	Green	0.2
54	9999	Ribbed Bowl	9999	Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Blue	Green	na
55	1974	Ribbed Bowl	K86	Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Blue	Green	na
56	1975	Ribbed Bowl	J85	Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Blue	Green	na
57	1975	Ribbed Bowl	9999*	Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Blue	Green	na
58	9999	Ribbed Bowl	9999	Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Blue	Green	na
59	9999	Ribbed Bowl	9999	Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Blue	Green	na
60	9999	Ribbed Bowl	9999	Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Blue	Green	na
61	9999	Ribbed Bowl	9999	Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Blue	Green	na
62	1974	Ribbed Bowl with Close-Spaced Ribs	W76	Rim and Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Ultramarine Blu	na	0.3 - 0.5
63	1974	Ribbed Bowl with Close-Spaced Ribs	P71	Shoulder	Bowl	Mould Pressed Glass	3	Monochrome	na	Ultramarine Blu	na	0.3 - 0.4
64	1974	Ribbed Bowl with Close-Spaced Ribs	9999	Rim and Wall	Bowl	Mould Pressed Glass	3	Monochrome	na	Ultramarine Blu	na	0.3 - 0.35
65	1975	Ribbed Bowl with Close-Spaced Ribs	M105	Shoulder	Bowl	Mould Pressed Glass	3	Monochrome	na	Ultramarine Blu	na	0.4 - 0.5
66	1975	Ribbed Bowl with Close-Spaced Ribs	K100	Base or Lower Wall	Bowl	Mould Pressed Glass	3	Monochrome	Light	Ultramarine Blu	na	0.2 - 0.4
67	1975	Free Blown Bowl	N103	Rim	Bowl	Free Blown Glass	12	Monochrome	na	Purple	na	0.175 - 0.25
68	1975	Free Blown Bowl	O100	Wall	Bowl	Free Blown Glass	12	Monochrome	na	Purple	na	0.15
69	1975	Free Blown Bowl	P105	Base and Wall	Bowl	Free Blown Glass	12	Monochrome	na	Purple	na	0.25 - 0.3
70	1975	Free Blown Bowl	K102	Wall	Bowl	Free Blown Glass	12	Monochrome	na	Peacock blue	na	0.275
71	1974	Free Blown Bowl	U75	Rim	Bowl	Free Blown Glass	12	Monochrome	na	Blue	na	0.25
72	1974	Free Blown Bowl	M76	Rim	Bowl	Free Blown Glass	12	Monochrome	Dark	Blue	na	0.2
73	1975	Free Blown Bowl	K101	Rim	Bowl	Free Blown Glass	12	Monochrome	na	Blue	na	0.15
74	1974	Free Blown Bowl	AK79	Base and Wall	Bowl	Free Blown Glass	12	Monochrome	na	Brown	na	0.15 - 0.2
75	1975	Free Blown Drinking Vessel	M101	Rim	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Emerald green	na	0.2
76	1973	Free Blown Drinking Vessel	O68-1*	Lower Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Decolorized	na	0.1
77	1973	Free Blown Drinking Vessel	O68-2*	Lower Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Decolorized	na	0.1
78	1975	Free Blown Drinking Vessel	L98	Base	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Decolorized	na	0.1
79	1973	Free Blown Drinking Vessel	I71	Base	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Decolorized	na	0.1
80	1974	Free Blown Bowl or Plate	L88	Base and Wall	Bowl or Plate	Free Blown Glass	12	Monochrome	na	Decolorized	na	0.1 - 0.15
81	1974	Free Blown Bowl	K81	Base	Bowl	Free Blown Glass	12	Monochrome	na	Decolorized	na	0.1
82	1974	Free Blown Bowl	M91	Base	Bowl	Free Blown Glass	12	Monochrome	na	Decolorized	na	0.15
83	1974	Free Blown Drinking Vessel	9999	Rim	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Decolorized	na	0.2
84	1973	Free Blown Bowl	N67	Rim	Bowl	Free Blown Glass	12	Monochrome	na	Green	na	0.2
85	9999	Free Blown Bowl	9999	Rim	Bowl	Free Blown Glass	12	Monochrome	Light	Green	na	0.2
86	1975	Free Blown Bowl	M99	Rim	Bowl	Free Blown Glass	12	Monochrome	Light	Green	na	0.2
87	1975	Free Blown Drinking Vessel	N105	Rim	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Green	na	0.15
88	1974	Free Blown Bowl	N90	Rim	Bowl	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.15

ID	Decoration	Decoration Colour	Thickness Decora	Comments on Decoration	Amount of Ribs	Comment on Ribs
45	na	na	na	na	1	na
46	na	na	na	na	1	na
47	na	na	na	na	1	na
48	na	na	na	na	1	na
49	na	na	na	na	1	na
50	na	na	na	na	1	na
51	na	na	na	na	1	na
52	na	na	na	na	2	na
53	na	na	na	na	2	Strongly profiled, sloping ribs
54	na	na	na	na	3	na
55	na	na	na	na	1	na
56	na	na	na	na	1	na
57	na	na	na	na	1	na
58	na	na	na	na	1	na
59	na	na	na	na	1	na
60	na	na	na	na	1	na
61	na	na	na	na	1	na
62	na	na	na	na	3	Close-spaced, narrow, flat ribs.
63	na	na	na	na	2	na
64	na	na	na	na	3	Ribs are narrow and sloping. On the shoulder the ribs are sanded.
65	na	na	na	na	2	na
66	na	na	na	na	2	na
67	na	na	na	na	na	na
68	na	na	na	na	na	na
69	na	na	na	na	na	na
70	na	na	na	na	na	na
71	na	na	na	na	na	na
72	na	na	na	na	na	na
73	na	na	na	na	na	na
74	na	na	na	na	na	na
75	na	na	na	na	na	na
76	na	na	na	na	na	na
77	na	na	na	na	na	na
78	na	na	na	na	na	na
79	na	na	na	na	na	na
80	na	na	na	na	na	na
81	na	na	na	na	na	na
82	na	na	na	na	na	na
83	na	na	na	na	na	na
84	na	na	na	na	na	na
85	na	na	na	na	na	na
86	na	na	na	na	na	na
87	na	na	na	na	na	na
88	na	na	na	na	na	na

ID	Diametre	Thickness Rim	Height Rim	Vessel Height	Damage	Extra Comments	Opaque	Iridescent	Translucent	Possibly from corresponding vessel
45	na	na	na	na	na	na	☐	☐	☐	na
46	na	na	na	na	na	na	☐	☐	☐	na
47	na	na	na	na	na	na	☐	☐	☐	na
48	na	na	na	na	na	na	☐	☐	☐	na
49	na	na	na	na	na	na	☐	☐	☐	na
50	na	na	na	na	na	na	☐	☐	☐	na
51	na	na	na	na	na	na	☐	☐	☐	na
52	na	na	na	na	na	On the inside two engraved grooves.	☐	☑	☐	na
53	na	na	na	na	na	na	☐	☐	☑	na
54	na	na	na	na	na	na	☐	☐	☐	na
55	na	na	na	na	na	na	☐	☐	☐	na
56	na	na	na	na	na	na	☐	☐	☐	na
57	na	na	na	na	na	na	☐	☐	☐	na
58	na	na	na	na	na	na	☐	☐	☐	na
59	na	na	na	na	na	na	☐	☐	☐	na
60	na	na	na	na	na	na	☐	☐	☐	na
61	na	na	na	na	na	na	☐	☐	☐	na
62	na	na	1.4	na	na	The entire inside and the outside of the rim (including the u	☐	☑	☐	P71
63	na	na	na	na	na	na	☐	☐	☐	W76
64	na	na	1.4	na	na	na	☐	☐	☐	na
65	na	na	na	na	Weathered	na	☐	☐	☐	na
66	na	na	na	na	na	na	☐	☐	☐	na
67	na	na	na	na	na	An engraved groove 0.1 cm wide under the edge.	☐	☐	☐	na
68	na	na	na	na	na	Two engraved grooves approximately 0.1- 0.3 wide.	☐	☐	☐	na
69	na	na	na	na	na	At the bottom of the belly there is a flat groove about 0.1 w	☐	☐	☐	na
70	na	na	na	na	na	Object has a 0.1 cm wide groove.	☐	☐	☐	na
71	na	na	na	na	na	Immediately below the edge a 0.3 wide groove; 0.7 cm belo	☐	☐	☐	na
72	na	na	1.5	na	na	About 0.2 cm below the edge there is a 0.3 cm wide, shallo	☐	☐	☐	na
73	na	na	1.1	na	Weathered	na	☐	☐	☐	na
74	na	na	na	na	na	106 / 5000	☐	☐	☐	na
75	na	na	na	na	na	Immediately below the rim a 0.1 cm wide groove.	☐	☐	☐	na
76	na	na	na	na	na	Hemispherical. On the belly there is a groove about 0.1 cm	☐	☐	☑	O68-2, and a simila vessel found in Valkenburg (Inv. Nr. 586)
77	na	na	na	na	na	Hemispherical. On the belly there is a groove about 0.1 cm	☐	☐	☑	O68-1, and a similar vessel found in Valkenburg (Inv. Nr. 586).
78	na	na	na	na	Slightly Weathered	Two fine, 0.1 cm wide, concentric grooves are engraved on	☐	☐	☑	na
79	na	na	na	na	na	At the bottom on the flat base a 0.1 cm wide groove and yo	☐	☐	☑	na
80	na	na	na	na	na	A narrow groove at the bottom of the base.	☐	☐	☑	na
81	na	na	na	na	na	There are two narrow, concentric grooves on the underside	☐	☐	☑	na
82	na	na	na	na	na	With a narrow groove.	☐	☐	☑	na
83	na	na	2.7	na	na	69 / 5000	☐	☐	☑	na
84	9	na	na	na	na	Immediately below the edge a 0.5 cm wide, ground groove	☐	☐	☑	na
85	na	na	na	na	na	Almost colourless, with numerous small air bubbles. Immed	☐	☐	☑	Almost identical to M99, ID 86
86	na	na	na	na	na	Almost colourless, with numerous small air bubbles. Immed	☐	☐	☐	Almost identical to ID 85, FN 9999
87	na	na	na	na	na	Below the rim there is a 0.1 wide groove.	☐	☐	☐	na
88	na	na	1.4	na	na	About 0.2 cm below the edge, a 0.4 cm wide, shallow groov	☐	☐	☐	na

ID	Find Yea	Object Name	Find Nr	Fragment	Function	Glass Production	Isings	Colour	Light/Dark	Primary Colour	Secondary Colour	Glass Thickness
89	1974	Free Blown Bowl	P88	Rim	Bowl	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.2
90	1975	Free Blown Bowl	O91	Rim	Bowl	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.1
91	1975	Free Blown Bowl	O91	Rim	Bowl	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.15 - 0.2
92	1974	Free Blown Drinking Vessel	W77	Base	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.1
93	1975	Free Blown Bowl	N94	Rim	Bowl	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.25
94	1976	Free Blown Bowl	9999*	Rim	Bowl	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.125
95	1975	Free Blown Drinking Vessel	M92	Rim	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.2 - 0.25
96	9999	Free Blown Drinking Vessel	9999	Rim	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Green	na	0.2 - 0.25
97	1975	Possible Free Blown Drinking Vessel	O92	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Purple	na	0.05 - 0.3
98	1974	Possible Free Blown Drinking Vessel	O90	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Emerald Green	na	0.05 - 0.3
99	1974	Possible Free Blown Drinking Vessel	P87	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Emerald Green	na	0.05 - 0.3
100	1974	Possible Free Blown Drinking Vessel	K87	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Dark	Green	na	0.05 - 0.3
101	1974	Possible Free Blown Drinking Vessel	L90	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Brown	na	0.05 - 0.3
102	1974	Possible Free Blown Drinking Vessel	L98	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Brown	na	0.05 - 0.3
103	1974	Possible Free Blown Drinking Vessel	P72	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Decolorized	na	0.05 - 0.3
104	1974	Possible Free Blown Drinking Vessel	L87	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Decolorized	na	0.05 - 0.3
105	1974	Possible Free Blown Drinking Vessel	O88	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Decolorized	na	0.05 - 0.3
106	1975	Possible Free Blown Drinking Vessel	9999*	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Decolorized	na	0.05 - 0.3
107	9999	Possible Free Blown Drinking Vessel	9999	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Decolorized	na	0.05 - 0.3
108	1974	Possible Free Blown Drinking Vessel	R77	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Blue	Green	0.05 - 0.3
109	1974	Possbile Free Blown Drinking Vessel	L75	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Blue	Green	0.05 - 0.3
110	1974	Possbile Free Blown Drinking Vessel	V75	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Blue	Green	0.05 - 0.3
111	1975	Possbile Free Blown Drinking Vessel	L99	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Blue	Green	0.05 - 0.3
112	1975	Possbile Free Blown Drinking Vessel	K100	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Blue	Green	0.05 - 0.3
113	9999	Possbile Free Blown Drinking Vessel	9999	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	na	Blue	Green	0.05 - 0.3
114	1973	Possbile Free Blown Drinking Vessel	M69	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
115	1974	Possbile Free Blown Drinking Vessel	N71	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
116	1974	Possbile Free Blown Drinking Vessel	N74	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
117	1974	Possbile Free Blown Drinking Vessel	V79	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
118	1974	Possbile Free Blown Drinking Vessel	AG78	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
119	1974	Possbile Free Blown Drinking Vessel	I79	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
120	1974	Possbile Free Blown Drinking Vessel	O78	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
121	1974	Possbile Free Blown Drinking Vessel	S77	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
122	1974	Possbile Free Blown Drinking Vessel	V77	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
123	1974	Possbile Free Blown Drinking Vessel	R76	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
124	1974	Possbile Free Blown Drinking Vessel	O72	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
125	1974	Possbile Free Blown Drinking Vessel	R75	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
126	1974	Possbile Free Blown Drinking Vessel	Q73	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
127	1974	Possbile Free Blown Drinking Vessel	N78	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
128	1974	Possbile Free Blown Drinking Vessel	O88	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
129	1974	Possbile Free Blown Drinking Vessel	O90	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
130	1975	Possbile Free Blown Drinking Vessel	N91-1*	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
131	1975	Possbile Free Blown Drinking Vessel	N91-2*	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
132	1975	Possbile Free Blown Drinking Vessel	O94	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3

ID	Decoration	Decoration Colour	Thickness Decora	Comments on Decoration	Amount of Ribs	Opaque	Iridescent	Translucent	Possibly from corresponding vessel
89	na	na	na	na	na	☐	☐	☐	na
90	na	na	na	na	na	☐	☐	☑	na
91	na	na	na	na	na	☐	☐	☑	na
92	na	na	na	na	na	☐	☐	☑	A cup of the Is. 12 from Valkenburg also shows a circle on the bo
93	na	na	na	na	na	☐	☑	☑	na
94	na	na	na	na	na	☐	☐	☐	na
95	na	na	na	na	na	☐	☐	☐	na
96	na	na	na	na	na	☐	☐	☑	na
97	na	na	na	na	na	☐	☐	☐	na
98	na	na	na	na	na	☐	☐	☐	na
99	na	na	na	na	na	☐	☐	☐	na
100	na	na	na	na	na	☐	☐	☐	na
101	na	na	na	na	na	☐	☐	☐	na
102	na	na	na	na	na	☐	☐	☐	na
103	na	na	na	na	na	☐	☐	☑	na
104	na	na	na	na	na	☐	☐	☑	na
105	na	na	na	na	na	☐	☐	☑	na
106	na	na	na	na	na	☐	☐	☑	na
107	na	na	na	na	na	☐	☐	☑	na
108	na	na	na	na	na	☐	☐	☐	na
109	na	na	na	na	na	☐	☐	☐	na
110	na	na	na	na	na	☐	☐	☐	na
111	na	na	na	na	na	☐	☐	☐	na
112	na	na	na	na	na	☐	☐	☐	na
113	na	na	na	na	na	☐	☐	☐	na
114	na	na	na	na	na	☐	☐	☐	na
115	na	na	na	na	na	☐	☐	☐	na
116	na	na	na	na	na	☐	☐	☐	na
117	na	na	na	na	na	☐	☐	☐	na
118	na	na	na	na	na	☐	☐	☐	na
119	na	na	na	na	na	☐	☐	☐	na
120	na	na	na	na	na	☐	☐	☐	na
121	na	na	na	na	na	☐	☐	☐	na
122	na	na	na	na	na	☐	☐	☐	na
123	na	na	na	na	na	☐	☐	☐	na
124	na	na	na	na	na	☐	☐	☐	na
125	na	na	na	na	na	☐	☐	☐	na
126	na	na	na	na	na	☐	☐	☐	na
127	na	na	na	na	na	☐	☐	☐	na
128	na	na	na	na	na	☐	☐	☐	na
129	na	na	na	na	na	☐	☐	☐	na
130	na	na	na	na	na	☐	☐	☐	na
131	na	na	na	na	na	☐	☐	☐	na
132	na	na	na	na	na	☐	☐	☐	na

ID	Comment on Ribs	Diametre	Thickness Rim	Height Rim	Vessel Height	Damage	Extra Comments
89	na	na	na	1.1	na	na	Approximately 0.2 cm below the rim there is a very small, s
90	na	na	na	1.1	na	na	Approximately 0.15 below the rim there is a very small, shal
91	na	na	na	1.0	na	na	Approximately 0.2 below the rim there is a 0.3 wide, shallo
92	na	na	na	na	na	na	a flat ground circle (outer diameter 1.0 cm) in the middle of
93	na	8.5	na	3	na	na	Approximately 0.35 cm below the rim there is a 0.3 cm wide
94	na	10	na	0.9	na	Weathered	There is approximately 0.25 cm below the rim a narrow gro
95	na	na	na	2.8	na	na	About 0.2 cm below the rim there is a 0.5 cm wide, shallow
96	na	8	na	na	na	na	Directly below the rim there is a 0.5 wide, shallow groove; a
97	na	na	na	na	na	na	With engraved lines and grooves.
98	na	na	na	na	na	na	With engraved lines and grooves.
99	na	na	na	na	na	na	With engraved lines and grooves.
100	na	na	na	na	na	na	With engraved lines and grooves.
101	na	na	na	na	na	na	With engraved lines and grooves.
102	na	na	na	na	na	na	With engraved lines and grooves.
103	na	na	na	na	na	na	With engraved lines and grooves.
104	na	na	na	na	na	na	With engraved lines and grooves.
105	na	na	na	na	na	na	With engraved lines and grooves.
106	na	na	na	na	na	na	With engraved lines and grooves.
107	na	na	na	na	na	na	With engraved lines and grooves.
108	na	na	na	na	na	na	With engraved lines and grooves.
109	na	na	na	na	na	na	With engraved lines and grooves.
110	na	na	na	na	na	na	With engraved lines and grooves.
111	na	na	na	na	na	na	With engraved lines and grooves.
112	na	na	na	na	na	na	With engraved lines and grooves.
113	na	na	na	na	na	na	With engraved lines and grooves.
114	na	na	na	na	na	na	With engraved lines and grooves.
115	na	na	na	na	na	na	With engraved lines and grooves.
116	na	na	na	na	na	na	With engraved lines and grooves.
117	na	na	na	na	na	na	With engraved lines and grooves.
118	na	na	na	na	na	na	With engraved lines and grooves.
119	na	na	na	na	na	na	With engraved lines and grooves.
120	na	na	na	na	na	na	With engraved lines and grooves.
121	na	na	na	na	na	na	With engraved lines and grooves.
122	na	na	na	na	na	na	With engraved lines and grooves.
123	na	na	na	na	na	na	With engraved lines and grooves.
124	na	na	na	na	na	na	With engraved lines and grooves.
125	na	na	na	na	na	na	With engraved lines and grooves.
126	na	na	na	na	na	na	With engraved lines and grooves.
127	na	na	na	na	na	na	With engraved lines and grooves.
128	na	na	na	na	na	na	With engraved lines and grooves.
129	na	na	na	na	na	na	With engraved lines and grooves.
130	na	na	na	na	na	na	With engraved lines and grooves.
131	na	na	na	na	na	na	With engraved lines and grooves.
132	na	na	na	na	na	na	With engraved lines and grooves.

ID	Find Yea	Object Name	Find Nr	Fragment	Function	Glass Production	Isings	Colour	Light/Dark	Primary Colour	Secondary Colour	Glass Thickness
133	1975	Possbile Free Blown Drinking Vessel	M93	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
134	1974	Possbile Free Blown Drinking Vessel	M95	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
135	1975	Possbile Free Blown Drinking Vessel	M102	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
136	1975	Possbile Free Blown Drinking Vessel	N105	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
137	9999	Possbile Free Blown Drinking Vessel	9999	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
138	9999	Possbile Free Blown Drinking Vessel	9999	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
139	9999	Possbile Free Blown Drinking Vessel	9999	Wall	Drinking Vessel	Free Blown Glass	12	Monochrome	Light	Blue	Green	0.05 - 0.3
140	1974	Cameo Glass Bowl or Drinking Vessel	S76	Lower Wall	Bowl or Drinking Vessel	Cameo Glass	12	Polychrome	na	Blue	na	0.2
141	1973	Cameo Glass Bowl or Drinking Vessel	N74	Wall	Bowl or Drinking Vessel	Cameo Glass	12	Polychrome	na	Blue	na	0.25 - 0.3
142	1974	Cameo Glass Bowl or Drinking Vessel	S77	Wall	Bowl or Drinking Vessel	Cameo Glass	12	Polychrome	na	Blue	na	0.2
143	1974	Cameo Glass Bowl or Drinking Vessel	V75	Wall	Bowl or Drinking Vessel	Cameo Glass	12	Polychrome	na	Blue	na	0.2
144	1975	Cameo Glass Bowl or Drinking Vessel	L98	Wall	Bowl or Drinking Vessel	Cameo Glass	12	Polychrome	Light	Blue	na	0.15 - 0.2
145	9999	Cameo Glass Bowl or Drinking Vessel	9999*	na	Bowl or Drinking Vessel	Cameo Glass	12	Polychrome	Light	Blue	na	0.2
146	1974	Cameo Glass Bowl or Drinking Vessel	Q77	Wall	Bowl or Drinking Vessel	Cameo Glass	12	Polychrome	na	Amber	na	0.15 - 0.2
147	1975	Cameo Glass Bowl or Drinking Vessel	O95	Wall	Bowl or Drinking Vessel	Cameo Glass	12	Polychrome	na	Amber	na	0.25 - 0.3
148	1974	Cameo Glass Bowl or Drinking Vessel	O90	na	Bowl or Drinking Vessel	Cameo Glass	12	Polychrome	na	Amber	na	0.2
149	1975	Cameo Glass Bowl or Drinking Vessel	N94	Wall	Bowl or Drinking Vessel	Cameo Glass	12	Polychrome	Dark	Purple	na	0.3 - 0.4
150	1973	Ribbed Bowl with Marvered Threads	M69	Shoulder and Wall	Bowl	Free Blown Glass	17	Polychrome	na	Purple	na	0.1 - 0.35
151	1974	Ribbed Bowl with Marvered Threads	S74	Shoulder	Bowl	Free Blown Glass	17	Polychrome	na	Ultramarine Blu	na	0.2 - 0.4
152	1974	Ribbed Bowl with Marvered Threads	P64	Rim	Bowl	Free Blown Glass	17	Polychrome	na	Blue	na	na
153	1975	Ribbed Bowl with Marvered Threads	M103	Wall	Bowl	Free Blown Glass	17	Polychrome	na	Blue	na	na
154	1974	Ribbed Bowl with Marvered Threads	AL79	Wall	Bowl	Free Blown Glass	17	Polychrome	na	Blue	na	0.1 - 0.3
155	1974	Ribbed Bowl with Marvered Threads	N69	Wall	Bowl	Free Blown Glass	17	Monochrome	na	Blue	na	0.15
156	1973	Ribbed Bowl with Marvered Threads	N67	Shoulder and Rim	Bowl	Free Blown Glass	17	Polychrome	na	Gray	Blue	0.15 - 0.4
157	1974	Ribbed Bowl with Marvered Threads	U76	Wall	Bowl	Free Blown Glass	17	Polychrome	na	Gray	Blue	0.1 - 0.15
158	1975	Ribbed Bowl with Marvered Threads	M91	Wall	Bowl	Free Blown Glass	17	Polychrome	na	Gray	Blue	0.1 - 0.15
159	1975	Ribbed Bowl with Marvered Threads	N99	Wall	Bowl	Free Blown Glass	17	Polychrome	na	Gray	Blue	0.1 - 0.15
160	9999	Ribbed Bowl with Marvered Threads	9999*	Wall	Bowl	Free Blown Glass	17	Polychrome	na	Gray	Blue	0.1 - 0.15
161	1975	Ribbed Bowl with Marvered Threads	M96	Base and Wall	Bowl	Free Blown Glass	17	Polychrome	na	Gray	Blue	0.15 - 0.4
162	1975	Ribbed Bowl with Marvered Threads	9999	Base	Bowl	Free Blown Glass	17	Polychrome	na	Gray	Blue	0.15 - 0.3
163	1974	Ribbed Bowl with Marvered Threads	O90	Lower Wall	Bowl	Free Blown Glass	17	Polychrome	na	Amber	na	0.15 - 0.2
164	1974	Ribbed Bowl with Marvered Threads	M76	Rim and Shoulder	Bowl	Free Blown Glass	17	Polychrome	na	Yellow	Brown	0.125 - 0.25
165	1974	Ribbed Bowl with Marvered Threads	O88	Shoulder	Bowl	Free Blown Glass	17	Polychrome	na	Amber	na	0.25 - 0.3
166	1975	Ribbed Bowl with Marvered Threads	L91	Shoulder	Bowl	Free Blown Glass	17	Polychrome	na	Amber	na	0.2
167	9999	Ribbed Bowl with Marvered Threads	9999	na	Bowl	Free Blown Glass	17	Polychrome	na	Amber	na	0.1
168	1974	Ribbed Bowl with Marvered Threads	W75	na	Bowl	Free Blown Glass	17	Polychrome	na	Amber	na	0.3
169	1974	Ribbed Bowl with Marvered Threads	V75	Wall	Bowl	Free Blown Glass	17	Monochrome	na	Brown	na	0.3
170	9999	Ribbed Bowl with Marvered Threads	9999	Wall	Bowl	Free Blown Glass	17	Monochrome	na	Brown	na	0.3
171	1974	Ribbed Bowl with Marvered Threads	N73	Wall	Bowl	Free Blown Glass	17	Polychrome	na	Decolorized	na	0.2
172	1974	Ribbed Bowl with Marvered Threads	O78	Rim and Shoulder	Bowl	Free Blown Glass	17	Polychrome	na	Decolorized	na	0.1 - 0.25
173	1975	Ribbed Bowl with Marvered Threads	K101	Rim and Shoulder	Bowl	Free Blown Glass	17	Polychrome	Light	Purple	na	0.1 - 0.15
174	1975	Ribbed Bowl with Marvered Threads	O98	Shoulder	Bowl	Free Blown Glass	17	Polychrome	Light	Purple	na	na
175	1975	Ribbed Bowl with Marvered Threads	O99	Wall	Bowl	Free Blown Glass	17	Polychrome	Light	Purple	na	na
176	1974	Ribbed Bowl with Marvered Threads	K72	Wall	Bowl	Free Blown Glass	17	Polychrome	Light	Purple	na	na

ID	Decoration	Decoration Colour	Thickness Decora	Comments on Decoration	Amount of Ribs	Opaque	Iridescent	Translucent	Possibly from corresponding vessel
133	na	na	na	na	na	☐	☐	☐	na
134	na	na	na	na	na	☐	☐	☐	na
135	na	na	na	na	na	☐	☐	☐	na
136	na	na	na	na	na	☐	☐	☐	na
137	na	na	na	na	na	☐	☐	☐	na
138	na	na	na	na	na	☐	☐	☐	na
139	na	na	na	na	na	☐	☐	☐	na
140	Cameo glass rib	White	na	na	1	☑	☐	☐	na
141	Opaque cameo glass inside	White	na	na	na	☑	☐	☐	na
142	Opaque cameo glass inside	White	na	na	na	☑	☐	☐	na
143	Opaque cameo glass inside	White	na	na	na	☑	☐	☐	na
144	Opaque cameo glass inside	White	na	The cameo glass layer is relatively thin	na	☑	☐	☐	na
145	Opaque cameo glass inside	White	na	Cameo layer is very thin	na	☐	☐	☑	na
146	Opaque cameo glass inside	White	na	na	na	☑	☐	☐	na
147	Opaque cameo glass inside	White	na	na	na	☑	☐	☐	na
148	Opaque cameo glass inside	White	na	Cameo glass layer is relatively thin	na	☑	☐	☐	na
149	Opaque cameo glass inside	White	na	na	na	☑	☐	☐	na
150	Opaque parallel strings of thread	White	Various widths	A broad, white patch sloping over the rib.	1	☑	☐	☐	na
151	Threading	White	na	One wide and two narrow threadings	1	☐	☐	☐	na
152	Threading	White	na	na	na	☐	☐	☐	na
153	Threading	White	na	Broad white strings of thread close together over the rib	1	☐	☐	☐	na
154	Threading	White	na	White strings of thread over the rib	2	☐	☐	☐	na
155	na	na	na	na	1	☐	☐	☐	na
156	Threading	White	na	On the shoulder, three fused, almost parallel white strings of thread.	na	☑	☑	☐	U76, M91, N99, 9999-ID 160, M96, 9999-ID 162.
157	Threading	White	0.25	One or two, white, transverse, patches of threading above the rib.	1	☑	☑	☐	N67, M91, N99, 9999-ID 160, M96, 9999-ID 162.
158	Threading	White	0.25	One or two, white, transverse, patches of threading above the rib.	1	☑	☑	☐	N67, U76, N99, 9999-ID 160, M96, 9999-ID 162.
159	Threading	White	0.25	One or two, white, transverse, patches of threading above the rib.	1	☑	☑	☐	N67, U76, M91, 9999-ID 160, M96, 9999-ID 162.
160	Threading	White	0.25	One or two, white, transverse, patches of threading above the rib.	1	☑	☑	☐	N67, U76, M91, N99, M96, 9999-ID 162.
161	Threading	White	na	Loops of opaque white glass on the bottom; at the lower wall a wide, undulating ribbon of thread.	4	☑	☑	☐	N67, U76, M91, N99, 9999-ID 160, 9999-ID 162.
162	Threading	White	na	Loops of opaque glass present.	na	☑	☑	☐	N67, U76, M91, N99, 9999-ID 160, M96.
163	Threading	White	na	Wavy white strings of thread.	2	☐	☐	☐	na
164	Threading	White	na	Threading located on the shoulder.	na	☐	☐	☐	na
165	Threading	White	na	Tow thin, partially melted threads approximately 0.7 cm apart.	na	☐	☐	☐	L91
166	Threading	White	na	Tow thin, partially melted threads approximately 0.2 cm apart.	na	☐	☐	☐	O88
167	Threading	White	na	Three white threads approximately 0.3 apart from each other.	na	☐	☐	☐	na
168	Threading	Opaque light blue	na	na	na	☑	☐	☐	na
169	na	na	na	na	na	☐	☐	☐	na
170	na	na	na	na	na	☐	☑	☐	na
171	Threading	White	na	One thin white flowing thread.	1	☐	☐	☐	na
172	Stripes	Light purple	na	na	na	☐	☐	☐	na
173	Threading	White	na	On the shoulder one white thread.	na	☐	☐	☐	O98 and O99
174	Threading	White	na	3 white threads.	1	☐	☐	☐	K101, O99
175	Threading	White	na	Zigzag lines of white threading above the rib	1	☐	☐	☐	K101, O98
176	Threading	White	na	Over the ribs wavy white strings of thread.	2	☐	☐	☐	na

ID	Comment on Ribs	Diametre	Thickness Rim	Height Rim	Vessel Height	Damage	Extra Comments
133	na	na	na	na	na	na	With engraved lines and grooves.
134	na	na	na	na	na	na	With engraved lines and grooves.
135	na	na	na	na	na	na	With engraved lines and grooves.
136	na	na	na	na	na	na	With engraved lines and grooves.
137	na	na	na	na	na	na	With engraved lines and grooves.
138	na	na	na	na	na	na	With engraved lines and grooves.
139	na	na	na	na	na	na	With engraved lines and grooves.
140	One narrow, thin rib of about 0.1 cm. The whole rib is made of opaque white glass.	na	na	na	na	na	Due to the thinness of the rib, it is not very likely that this b
141	na	na	na	na	na	na	na
142	na	na	na	na	na	na	na
143	na	na	na	na	na	na	na
144	na	na	na	na	na	Weathered	na
145	na	na	na	na	na	Fragment is slightly melted	na
146	na	na	na	na	na	na	na
147	na	na	na	na	na	na	It also has a very shallow, 0.2 cm wide groove.
148	na	na	na	na	na	Strongly Weathered	na
149	na	na	na	na	na	Strongly Weathered	na
150	Very fine and sharp rib.	na	na	na	na	na	na
151	Some traces of one rib	na	na	na	na	na	na
152	na	na	na	na	na	na	na
153	Rather thick rib	na	na	na	na	na	na
154	Only the lower part of two fine ribs.	na	na	na	na	na	na
155	Quite thick rib.	na	na	na	na	na	The glass is very thin.
156	na	na	na	na	na	na	It turns blue when light shines through.
157	Fine and sharp rib	na	na	na	na	na	It turns blue when light shines through.
158	Fine and sharp rib	na	na	na	na	na	It turns blue when light shines through.
159	Fine and sharp rib	na	na	na	na	na	It turns blue when light shines through.
160	Fine and sharp rib	na	na	na	na	na	It turns blue when light shines through.
161	Relatively Narrow	na	na	na	na	na	It turns blue when light shines through.
162	na	na	na	na	na	na	Two fitting fragments; they turn blue when light shines thr
163	na	na	na	na	na	na	na
164	na	na	na	na	na	Weathered	van Lith categorizes this in the 'amber' coloured group.
165	na	na	na	na	na	na	na
166	na	na	na	na	na	na	na
167	na	na	na	na	na	na	na
168	na	na	na	na	na	na	na
169	na	na	na	na	na	na	na
170	na	na	na	na	na	na	na
171	Relatively thin rib.	na	na	na	na	na	na
172	na	7.5	na	na	na	na	na
173	na	7.5	na	na	na	na	na
174	Start of one rib.	na	na	na	na	na	na
175	Relatively high	na	na	na	na	na	na
176	na	na	na	na	na	na	The glass is almost completely decolorized.

ID	Find Yea	Object Name	Find Nr	Fragment	Function	Glass Production	Isings	Colour	Light/Dark	Primary Colour	Secondary Colour	Glass Thickness
177	9999	Ribbed Bowl with Marvered Glass	9999	Wall	Bowl	Free Blown Glass	17	Polychrome	Light	Purple	na	na
178	1974	Ribbed Bowl with Marvered Glass	L76	Rim	Bowl	Free Blown Glass	17	Monochrome	na	Decolorized	na	na
179	1974	Ribbed Bowl with Marvered Glass	L79	Rim	Bowl	Free Blown Glass	17	Monochrome	na	Decolorized	na	na
180	9999	Ribbed Bowl with Marvered Threads	9999	Wall	Bowl	Free Blown Glass	17	Polychrome	Light	Blue	Green	na
181	1974	Ribbed Bowl with Marvered Threads	N67	Shoulder	Bowl	Free Blown Glass	17	Polychrome	Light	Purple	na	na
182	1974	Ribbed Bowl with Marvered Threads	O69	Shoulder	Bowl	Free Blown Glass	17	Polychrome	Light	Purple	na	na
183	1975	Ribbed Bowl with Marvered Threads	N96	Wall	Bowl	Free Blown Glass	17	Monochrome	Light	Purple	na	na
184	1975	Ribbed Bowl with Marvered Threads	M104	Wall	Bowl	Free Blown Glass	17	Monochrome	Light	Purple	na	0.15
185	1974	Ribbed Bowl with Marvered Threads	O69	Wall	Bowl	Free Blown Glass	17	Polychrome	Light	Blue	Green	na
186	1974	Ribbed Bowl with Marvered Threads	L88	Wall	Bowl	Free Blown Glass	17	Monochrome	Light	Blue	Green	na
187	1975	Ribbed Bowl with Marvered Threads	I92	Shoulder	Bowl	Free Blown Glass	17	Monochrome	Light	Blue	na	na
188	1974	Ribbed Bowl with Marvered Threads	V78	Wall	Bowl	Free Blown Glass	17	Monochrome	Light	Blue	na	na
189	1974	Ribbed Bowl with Marvered Threads	M80	Wall	Bowl	Free Blown Glass	17	Monochrome	Light	Blue	na	na
190	1974	Ribbed Bowl with Marvered Threads	M81-1	Wall	Bowl	Free Blown Glass	17	Monochrome	Light	Blue	na	na
191	1974	Ribbed Bowl with Marvered Threads	M81-2	Wall	Bowl	Free Blown Glass	17	Monochrome	Light	Blue	na	na
192	1974	Ribbed Bowl with Marvered Threads	M89	Wall	Bowl	Free Blown Glass	17	Monochrome	Light	Blue	na	na
193	1974	Ribbed Bowl with Marvered Threads	O90	Wall	Bowl	Free Blown Glass	17	Monochrome	Light	Blue	na	na
194	1975	Ribbed Bowl with Marvered Threads	O94	Wall	Bowl	Free Blown Glass	17	Monochrome	Light	Blue	na	na
195	1975	Ribbed Bowl with Marvered Threads	M105	Wall	Bowl	Free Blown Glass	17	Monochrome	Light	Blue	na	na
196	9999	Ribbed Bowl with Marvered Threads	9999*	Wall	Bowl	Free Blown Glass	17	Monochrome	Light	Blue	na	na
197	9999	Ribbed Bowl with Marvered Threads	9999	Wall	Bowl	Free Blown Glass	17	Monochrome	Light	Blue	na	na
198	9999	Ribbed Bowl with Marvered Threads	9999	Wall	Bowl	Free Blown Glass	17	Monochrome	Light	Blue	na	na
199	9999	Ribbed Bowl with Marvered Threads	9999	Shoulder	Bowl	Free Blown Glass	17	Monochrome	Light	Blue	na	na
200	1974	Ribbed Bowl with Marvered Threads	L89	Rim	Bowl	Free Blown Glass	17	Monochrome	Light	Blue	na	na
201	1974	Ribbed Bowl with Marvered Threads	L84	Wall	Bowl	Free Blown Glass	17	Monochrome	Light	Purple	na	na
202	1974	Ribbed Bowl with Marvered Threads	L89	Wall	Bowl	Free Blown Glass	17	Monochrome	Light	Purple	na	na
203	1974	Ribbed Bowl with Marvered Threads	O89	Wall	Bowl	Free Blown Glass	17	Monochrome	Light	Purple	na	na
204	1976	Shallow Bowl	9999*	Rim	Bowl	Mould Pressed Glass	18	Monochrome	Dark	Blue	na	0.2 - 0.3
205	9999	Plate with a Flat Lip	9999	Rim and Wall	Dish	Free Blown Glass	48	Monochrome	na	Blue	na	0.15 - 0.2
206	1975	Plate with a Flat Lip	M96	Rim	Dish	Free Blown Glass	48	Monochrome	na	Blue	na	0.15 - 0.2
207	1975	Plate with a Flat Lip	M99	Rim	Dish	Free Blown Glass	48	Monochrome	na	Blue	na	na
208	9999	Plate with a Flat Lip	9999	Rim	Dish	Free Blown Glass	48	Monochrome	na	Blue	na	na
209	1976	Cylindrical Bottle	9999*	Base	Bottle	na	51	Monochrome	Light	Blue	Green	0.3 - 0.4
210	1976	Cylindrical Bottle	9999*	Shoulder	Bottle	na	51	Monochrome	Light	Blue	Green	0.6
211	1974	Domed Lid	073	na	Lid	Mould Pressed Glass	66	Monochrome	na	Amber	na	0.2
212	1975	Domed Lid	N99	Rim	Lid	Mould Pressed Glass	66	Monochrome	na	Amber	na	0.2 - 0.5

ID	Decoration	Decoration Colour	Thickness Decora	Comments on Decoration	Amount of Ribs	Opaque	Iridescent	Translucent	
177	Threading	White	na	Wavy strings of thread.	na	☐	☐	☐	na
178	na	na	na	na	na	☐	☐	☐	na
179	na	na	na	na	na	☐	☐	☐	na
180	Threading	White	na	Wavy white strings of thread.	2	☐	☐	☐	na
181	Threading	White	na	Five, parallel, white threads.	na	☐	☐	☐	O69
182	Threading	White	na	Five, parallel, white threads.	na	☐	☐	☐	O69
183	na	na	na	na	2	☐	☐	☐	na
184	na	na	na	na	1	☐	☐	☐	na
185	Threading	White	na	Hard to distinguish the threading, waving pattern.	na	☐	☐	☐	na
186	na	na	na	na	1	☐	☐	☐	na
187	na	na	na	na	na	☐	☐	☐	na
188	na	na	na	na	na	☐	☐	☐	na
189	na	na	na	na	na	☐	☐	☐	na
190	na	na	na	na	na	☐	☐	☐	na
191	na	na	na	na	na	☐	☐	☐	na
192	na	na	na	na	na	☐	☐	☐	na
193	na	na	na	na	na	☐	☐	☐	na
194	na	na	na	na	na	☐	☐	☐	na
195	na	na	na	na	na	☐	☐	☐	na
196	na	na	na	na	na	☐	☐	☐	na
197	na	na	na	na	na	☐	☐	☐	na
198	na	na	na	na	na	☐	☐	☐	na
199	na	na	na	na	na	☐	☐	☐	na
200	na	na	na	na	na	☐	☐	☐	na
201	na	na	na	na	na	☐	☐	☐	na
202	na	na	na	na	na	☐	☐	☐	na
203	na	na	na	na	na	☐	☐	☐	na
204	na	na	na	na	na	☐	☐	☑	na
205	A hollow, pinched loop.	na	na	Located at the bottom of the fragment.	na	☐	☐	☑	na
206	na	na	na	na	na	☐	☐	☑	na
207	na	na	na	na	na	☐	☐	☑	na
208	na	na	na	na	na	☐	☐	☑	na
209	na	na	na	na	na	☐	☐	☑	ID 210
210	na	na	na	na	na	☐	☐	☑	ID 209
211	na	na	na	na	na	☐	☐	☑	na
212	na	na	na	na	na	☐	☐	☑	na

ID	Comment on Ribs	Diametre	Thickness Rim	Height Rim	Vessel Height	Damage	Extra Comments
177	na	na	na	na	na	na	The glass is almost completely decolorized.
178	na	na	na	na	na	na	na
179	na	na	na	na	na	na	na
180	na	na	na	na	na	na	The fragment is almost completely discolorized.
181	na	na	na	na	na	na	na
182	na	na	na	na	na	na	na
183	na	na	na	na	na	na	na
184	na	na	na	na	na	na	na
185	na	na	na	na	na	na	The fragment is decolorized.
186	na	na	na	na	na	na	na
187	na	na	na	na	na	na	na
188	na	na	na	na	na	na	na
189	na	na	na	na	na	na	na
190	na	na	na	na	na	na	na
191	na	na	na	na	na	na	na
192	na	na	na	na	na	na	na
193	na	na	na	na	na	na	na
194	na	na	na	na	na	na	na
195	na	na	na	na	na	na	na
196	na	na	na	na	na	na	na
197	na	na	na	na	na	na	na
198	na	na	na	na	na	na	na
199	na	na	na	na	na	Somewhat melted.	na
200	na	na	na	na	na	na	na
201	na	na	na	na	na	na	na
202	na	na	na	na	na	na	na
203	na	na	na	na	na	na	na
204	na	20	na	1.9	na	na	Sanded over the entire inside and outside.
205	na	9	0.35	na	1.85	na	Corresponds with Terra Sigillata-Form Dragendorff 23. Ves
206	na	11.5	0.3	na	na	na	Dragendorff 23
207	na	na	na	na	na	na	Very small fragment.
208	na	na	na	na	na	na	na
209	na	6	na	na	na	Use-wear traces on the base.	51b.
210	na	na	na	na	na	na	51b.
211	na	10	0.8	na		na	66a. Rim is folded upwards and inwards, and is triangular in
212	na	na	na	na		na	66a. The edge, which is turned upwards and then inwards, i

Appendix 4: Database and UND Glass Fragments, Beads, and Game Pieces

ID	Find Year	Object Name	Find Nr	Fragment	Function	Production Cate	Colour	Light/Dark	Primary Colour	Secondary	Glass Thickne	Decoration
1	1975	UND Millefiori Fragment	J90	na	na	Millefiori Glass	Polychrome	na	Amber	na	0.3	Rosettes
2	1974	UND Fragment with a Coloured Surface	X77	Wall	na	na	Polychrome	na	Purple	na	0.2	Spots.
3	1975	UND Fragment with a Coloured Surface	K109	Wall	na	na	Polychrome	na	Purple	na	0.2	Spots.
4	1975	UND Fragment with a Coloured Surface	L109	Wall	na	na	Polychrome	na	Purple	na	0.2	Spots.
5	1974	UND Fragment with a Coloured Surface	K90	Wall	na	na	Polychrome	na	Purple	na	0.2	Spots.
6	1974	UND Fragment with a Coloured Surface	N89	Wall	na	na	Polychrome	na	Purple	na	0.2	Spots.
7	1974	UND Fragment with a Coloured Surface	9999*	Wall	na	na	Polychrome	na	Purple	na	0.2	Spots.
8	1976	UND Fragment with a Coloured Surface	9999*	Wall	na	na	Polychrome	na	Purple	na	0.25	Spots.
9	1974	UND Fragment with a Coloured Surface	P74	Wall	na	na	Polychrome	na	Amber	na	0.2	Zigzag lines
10	1974	UND Fragment with a Coloured Surface	O90	Wall	na	na	Polychrome	na	Honey	na	0.1 - 0.2	Ribbons
11	1975	UND Fragment with a Coloured Surface	M103	Wall	na	na	Polychrome	na	Blue	na	0.1 - 0.2	Spots
12	1974	UND Fragment with a Coloured Surface	T75	Wall	na	na	Polychrome	na	Blue	na	0.15	Spots
13	1974	UND Fragment with a Coloured Surface	L81	Wall	na	na	Polychrome	Light	Blue	na	0.05	Bands and opaque grains
14	1974	UND Fragment with a Coloured Surface	W76	Wall	na	na	Polychrome	na	Decolorized	na	0.2	Spots and Welts
15	1974	UND Fragment with a Coloured Surface	M81	Wall	na	na	Polychrome	na	Decolorized	na	0.15 - 0.2	Stripes
16	1975	UND Fragment with a Coloured Surface	M105	na	na	na	Polychrome	Light	Blue	na	0.25 - 0.3	Spots
17	1975	UND Bowl	N97	Base and Wall	Bowl	na	Monochrome	Dark	Blue	na	0.2	na
18	1975	UND Kantharos or Goblet	L96	Rim	Kantharos or Goblet	na	Monochrome	na	Purple	na	0.15 - 0.3	na
19	1975	UND Kantharos or Chalice	O92	Rim	Kantharos or Chalice	na	Monochrome	na	Purple	na	0.15 - 0.3	na
20	1975	UND Kantharos or Chalice	L96	Rim	Chalice or Kantharos	na	Monochrome	na	Blue	na	0.2 - 0.3	na
21	1975	UND Cup	L98	Rim	Cup	na	Monochrome	na	Blue	Green	0.2	na
22	1975	UND Cup	M99	Rim	Cup	na	Monochrome	na	Decolorized	Green	0.15	na
23	1974	UND Cup	N89	Rim	Cup	na	Monochrome	Light	Blue	Green	0.15	na
24	1974	UND Cup	P88	Rim	Cup	na	Moncohrome	Light	Blue	Green	0.15	na
25	1974	UND Cup	AL82	Rim	Cup	na	Monochrome	Light	Blue	Green	0.2	na
26	1974	UND Cup	M83	Rim	Cup	na	Monochrome	Light	Blue	Green	0.15	na
27	1975	UND Cup	N97	Rim	Cup	na	Monochrome	Light	Blue	Green	0.2	na
30	1975	UND Plate	O103	Base	Plate	na	Monochrome	na	Black	Green	0.3 - 0.4	Standring
31	1974	UND Plate	O88	Base	Plate	na	Monochrome	na	Black	Green	0.3	Standring
32	1975	UND Plate	K99	na	Plate	na	Monochrome	na	Black	Green	na	na
33	1975	UND Plate	K99	na	Plate	na	Monochrome	na	Black	Green	na	na
34	1975	UND Plate	L99	na	Plate	na	Monochrome	na	Black	Green	na	na
35	9999	UND Plate	9999	na	Plate	na	Monochrome	na	Black	Green	na	na
36	9999	UND Plate	9999	na	Plate	na	Monochrome	na	Black	Green	na	na
37	9999	UND Plate	9999	na	Plate	na	Monochrome	na	Black	Green	na	na
38	9999	UND Plate	9999	na	Plate	na	Monochrome	na	Black	Green	na	na
39	9999	UND Plate	9999	na	Plate	na	Monochrome	na	Black	Green	na	na
40	1976	UND Plate or Bowl	9999	Base and Wall	Plate or Bowl	na	Monochrome	na	Blue	na	0.1	Standring
41	1975	UND Plate	N103	Base	Plate	na	Monochrome	na	Black	Green	0.2 - 0.3	Standring
42	1975	UND Plate	M95	Base	Plate	na	Monochrome	na	Black	Green	0.2 - 0.3	Standring
43	1975	UND Plate	O95	Base	Plate	na	Monochrome	na	Black	Green	0.2 - 0.3	Standring
44	1974	UND Plate	O87	Base	Plate	na	Monochrome	na	Black	Green	0.2	Standring
45	1974	UND Plate or Urn	9999	Rim	Plate or Urn	na	Monochrome	na	Amber	na	0.2	na
46	1975	UND Plate	N102	Rim	Plate	na	Monochrome	Light	Green	na	0.2	na

ID	Decoration Colour	Comments on Decoration	Diametre	Height (Rim)	Possibly from corresponding vessel
1	White and Amber	The rosettes consist of white framed amber-colored rods, each with a white dot in the middle. Distance between the rosettes about 0.2 cm.	na	na	na
2	White	The spots are opaque, wafer-thin and superimposed.	na	na	na
3	White	The spots are opaque, wafer-thin and superimposed.	na	na	K109
4	White	The spots are opaque, wafer-thin and superimposed.	na	na	L109
5	White	The spots are opaque, wafer-thin and superimposed.	na	na	N89, 9999; ID 9
6	White	The spots are opaque, wafer-thin and superimposed.	na	na	K90, 9999; ID 9
7	White	The spots are opaque, wafer-thin and superimposed.	na	na	K90, N89
8	White	The spots are opaque, wafer-thin and superimposed.	na	na	na
9	Opaque white	na	na	na	na
10	White	Ribbons are branching.	na	na	na
11	White	na	na	na	na
12	White	na	na	na	na
13	White	Three very thin, white fused bands, and several small, opaque white grains.	na	na	na
14	White	Irregular, opaque spots and welts.	na	na	na
15	White	White opaque stripes	na	na	na
16	White and Purple	Irregular applied spots on the outside. The spots are either made of purple glass or are composed of layers of alternating white and purple glass.	na	na	Vindonissa Nr 72.
17	na	na	a	na	na
18	na	na	na	1.5	na
19	na	na	na	2.8	na
20	na	na	na	1.1	na
21	na	na	8	na	na
22	na	na	7.5	na	na
23	na	na	na	na	a
24	na	na	na	na	na
25	na	na	na	na	na
26	na	na	na	na	na
27	na	na	na	na	na
30	na	Very flat stand ring with an outside diameter of about 5 cm.	na	na	O88, K99-ID32, K99-ID33, L99, ID35, ID36, ID37, ID38, and ID39.
31	na	Flat standring.	na	na	O103, K99-ID32, K99-ID33, L99, ID35, ID36, ID37, ID38, and ID39.
32	na	na	na	na	O103, O88, K99-ID33, L99, ID35, ID36, ID37, ID38, and ID39.
33	na	na	na	na	O103, O88, K99-ID32, L99, ID35, ID36, ID37, ID38, and ID39.
34	na	na	na	na	O103, O88, K99-ID32, K99-ID33, ID35, ID36, ID37, ID38, and ID39.
35	na	na	na	na	O103, O88, K99-ID32, K99-ID33, L99, ID36, ID37, ID38, and ID39.
36	na	na	na	na	O103, O88, K99-ID32, K99-ID33, L99, ID35, ID37, ID38, and ID39.
37	na	na	na	na	O103, O88, K99-ID32, K99-ID33, L99, ID35, ID36, ID38, and ID39.
38	na	na	na	na	O103, O88, K99-ID32, K99-ID33, L99, ID35, ID36, ID37, and ID39.
39	na	na	na	na	O103, O88, K99-ID32, K99-ID33, L99, ID35, ID36, ID37, and ID38.
40	na	Triangular stand ring. Dm. of the stand ring about 8 cm. Thickness of the glass at the stand ring 0.4 cm.	na	na	na
41	na	Rounded standring with a diameter of 8 cm.	na	na	na
42	na	Rounded standring with a diameter standring is 8 cm.	na	na	na
43	na	Rounded standring with a diameter standring is 8 cm.	na	na	na
44	na	na	na	na	na
45	na	na	17	na	na
46	na	na	17	na	na

ID	Extra Comments	Damage	Opaque	Iridescent	Translucent
1	na	na	☐	☐	☑
2	Fragment is more or less curved	na	☐	☐	☐
3	Fragment is more or less curved	na	☐	☐	☐
4	Fragment is more or less curved	na	☐	☐	☐
5	Fragment is more or less curved	na	☐	☐	☐
6	Fragment is more or less curved	na	☐	☐	☐
7	Fragment is more or less curved	na	☐	☐	☐
8	Fragment is more or less curved	na	☐	☑	☐
9	Fragment is curved.	Strongly Weathered	☐	☐	☐
10	Fragment is curved.	na	☐	☐	☐
11	na	na	☐	☐	☐
12	na	na	☐	☐	☐
13	Fragment is curved.	na	☐	☐	☐
14	Fragment is curved.	na	☐	☐	☐
15	Fragment is curved.	na	☐	☐	☐
16	Fragment is slightly curved.	na	☐	☐	☑
17	Base with stand ring with a diametre of approximately 5 cm. Thickness of the glass on the folded base ring is about 0.4 cm.	Sings of wear on the base ring	☐	☐	☑
18	The funnel-shaped edge is rounded off	na	☐	☑	☐
19	The thickened edge is rounded at the top.	na	☐	☑	☐
20	The thickened edge is rounded at the top.	na	☐	☐	☐
21	Slightly outward curving edge.	na	☐	☐	☑
22	With a slightly outward curving edge.	na	☐	☐	☐
23	The edge is rather strongly curved outwards and flattened at the top. Some fine, engraved lines on the outside below the edge.	na	☐	☐	☐
24	The rather narrow (0.45 cm) rim is slightly curved outwards, flattened at the top and bordered on the outside by a few fine lines.	na	☐	☐	☐
25	The rim is slightly curved outwards and flattened at the top; a few fine lines on the outside below the edge.	na	☐	☐	☐
26	The rim is very slightly curved outwards and flattened at the top. A fine engraved line 0.5 cm below the rim.	na	☐	☐	☐
27	The rim is slightly curved outwards and flattened at the top.	Weathered	☐	☐	☐
30	Three mathcing bottom pieces, therefore incorporated into one find number.	Badly weathered and very fragile.	☐	☐	☐
31	na	na	☐	☐	☐
32	More or less curved.	na	☐	☐	☐
33	More or less curved.	na	☐	☐	☐
34	More or less curved.	na	☐	☐	☐
35	More or less curved.	na	☐	☐	☐
36	More or less curved.	na	☐	☐	☐
37	More or less curved.	na	☐	☐	☐
38	More or less curved.	na	☐	☐	☐
39	More or less curved.	na	☐	☐	☐
40	na	na	☐	☑	☐
41	na	na	☐	☑	☐
42	na	Weathered silver-like.	☐	☐	☐
43	na	Weathered silver-like.	☐	☐	☐
44	na	na	☐	☑	☐
45	Thickened rim and inwardly curved wall.	na	☐	☑	☐
46	Thickened rim and inwardly curved wall.	na	☐	☐	☑

ID	Find Year	Object Name	Find Nr	Fragment	Function	Production Cate	Colour	Light/Dark	Primary Colour	Secondary	Glass Thickne	Decoration
47	1975	UND Plate or Bowl	L96	Base	Plate or Bowl	na	Monochrome	Light	Green	na	0.1	na
48	1974	UND Unguentarium	N68	Wall	Unguentarium	na	Polychrome	na	Purple	na	0.2 - 0.25	Stripes
49	1974	UND Unguentarium	S74	Base	Unguentarium	na	Monochrome	Dark	Purple	na	0.3	na
50	9999	UND Unguentarium	9999	Neck	Unguentarium	na	Monochrome	na	Purple	na	0.1	na
51	1975	UND Unguentarium	M105	Base	Unguentarium	na	Monochrome	na	Amber	na	0.3	na
52	9999	UND Unguentarium	9999	Lower Wall	Unguentarium	na	Monochrome	na	Amber	na	0.1 - 0.2	na
53	9999	UND Unguentarium	9999	Rim	Unguentarium	na	Monochrome	na	Blue	na	0.1	na
54	1974	UND Unguentarium	AJ78	Base and Wall	Unguentarium	na	Monochrome	na	Blue	Green	0.15 - 0.25	na
55	1974	UND Unguentarium	Q72	Base and Wall	Unguentarium	na	Monochrome	Light	Green	na	0.1 - 0.15	na
56	1974	UND Unguentarium	K77	Shoulder and Neck	Unguentarium	na	Monochrome	Light	Blue	na	0.05	na
57	1974	UND Unguentarium	AK83	Shoulder and Neck	Unguentarium	na	Monochrome	Light	Blue	Green	0.1	na
58	9999	UND Unguentarium	9999	Rim	Unguentarium	na	Monochrome	Light	Blue	Green	0.1	na
59	9999	UND Unguentarium	9999	Neck	Unguentarium	na	Monochrome	Light	Blue	Green	0.1	na
60	1974	UND Handle	K84	na	Handle	na	Polychrome	na	Amber	na	0.35	Threading
61	1975	UND Jug or Amphora	M100	Neck	Jug or Bowl	na	Monochrome	na	Green	na	na	na
62	1975	UND Jug or Bowl	O102	Base and Wall	Jug or Bowl	na	Monochrome	na	Purple	na	0.35	na
63	1975	UND Jug	N99	Rim	Jug	na	Monochrome	na	Amber	na	na	na
64	1974	Smooth bead	9999	na	Bead	Smooth bead	Monochrome	na	Amber	na	na	na
65	1974	Smooth bead	AL81	na	Bead	Smooth bead	Monochrome	na	Amber	na	na	na
66	1974	Smooth bead	9999	na	Bead	Smooth bead	Monochrome	na	Blue	na	na	na
67	1975	Smooth bead	L96	na	Bead	Smooth bead	Monochrome	na	Blue	na	na	na
68	1975	Smooth bead	N91	na	Bead	Smooth bead	Monochrome	na	Blue	Green	na	na
69	1976	Smooth bead	9999*	na	Bead	Smooth bead	Monochrome	na	Blue	Green	na	na
70	1975	Smooth bead	M104	na	Bead	Smooth bead	Monochrome	na	Blue	Green	na	na
71	1975	Smooth bead	M98	na	Bead	Smooth bead	Monochrome	na	Blue	Green	na	na
72	1974	Smooth bead	R77	na	Bead	Smooth bead	Monochrome	na	Blue	Green	na	na
73	1974	Smooth bead	T79	na	Bead	Smooth bead	Monochrome	na	Blue	Green	na	na
74	9999	Smooth bead	9999	na	Bead	Smooth bead	Monochrome	na	Blue	Green	na	na
75	9999	Smooth bead	9999	na	Bead	Smooth bead	Monochrome	na	Blue	Green	na	na
76	1975	Smooth bead	M107	na	Bead	Smooth bead	Monochrome	na	Green	na	na	na
77	1974	Smooth bead	D77	na	Bead	Smooth bead	Monochrome	na	Green	na	na	na
78	1975	Smooth bead	O97	na	Bead	Smooth bead	Monochrome	na	Green	na	na	na
79	1975	Smooth bead	K99	na	Bead	Smooth bead	Monochrome	na	Green	na	na	na
80	1975	Smooth bead	M97	na	Bead	Smooth bead	Monochrome	na	Emerald Green	na	na	na
81	1975	Biconical Bead	M100	na	Bead	Biconical bead	Monochrome	na	Blue	na	na	na
82	1975	Biconical Bead	K104	na	Bead	Biconical bead	Monochrome	na	Blue	na	na	na
83	1974	Biconical Bead	M88	na	Bead	Biconical bead	Monochrome	na	Blue	na	na	na
84	9999	Biconical Bead	9999	na	Bead	Biconical bead	Monochrome	na	Blue	na	na	na
85	1975	Biconical Bead	I80	na	Bead	Biconical bead	Monochrome	na	Brown	na	na	na
86	1974	Segment Bead	N76	na	Bead	Segment bead	Monochrome	na	Blue	na	na	na
87	1974	Flat Bead	D78	na	Bead	Flat bead	Monochrome	na	Decolorized	na	na	na
88	9999	Ring Bead	9999	na	Bead	Ring bead	Monochrome	na	Yellow	na	na	na
89	1974	Ring Bead	P89	na	Bead	Ring bead	Monochrome	na	Blue	na	na	na
91	9999	Button of a Needle or Bead	9999	na	Bead or Button of a Nee	na	Monochrome	na	White, gray, black, and green.	na	na	na

ID	Decoration Colour	Comments on Decoration	Diametre	Height (Rim)
47	na	na	na	na
48	Light purple	na	1.45	na
49	na	na	1.75	na
50	na	na	na	na
51	na	na	na	na
52	na	na	2.2	na
53	na	na	1.8	na
54	na	na	na	na
55	na	na	na	na
56	na	na	na	na
57	na	na	na	na
58	na	na	na	na
59	na	na	na	na
60	White, Brown	On the outside in the middle a 0.1 cm wide glass thread, alternating between white and brown. Between this thread and the edge on one side a m	na	na
61	na	na	7.5	na
62	na	na	6	na
63	na	na	na	na
64	na	na	1.6	0.85
65	na	na	1.6	0.9
66	na	na	1.65	1.1
67	na	na	1.65	0.6
68	na	na	2 - 2.1	1.4 - 1.5
69	na	na	1.8	1 - 1.1
70	na	na	1.75	1.1
71	na	na	1.75	0.9
72	na	na	1.45	0.8
73	na	na	1.75	1.7
74	na	na	1.6	0.7
75	na	na	1.3	0.7
76	na	na	na	1.5
77	na	na	1.8	1
78	na	na	na	0.95
79	na	na	na	0.85
80	na	na	1.5	0.6 - 0.75
81	na	na	na	na
82	na	na	na	na
83	na	na	na	na
84	na	na	na	na
85	na	na	na	na
86	na	na	na	na
87	na	na	1.5	0.2 - 0.3
88	na	na	1.3	0.3
89	na	na	1.2	0.4
91	na	na	1.8	0.8 - 1

ID	Extra Comments	Damage	Opaque	Iridescent	Translucent
47	Almost colourless, with two concentric circles engraved on the underside of the floor.	na	☐	☐	☐
48	2.5 cm height of fragment.	na	☐	☑	☐
49	Traces of the stapling iron on the bottom.	Weathered.	☐	☑	☐
50	na	na	☐	☐	☑
51	na	Weathered; Signs of wear on the base.	☐	☐	☐
52	na	na	☐	☐	☑
53	na	na	☐	☐	☑
54	The base is flat.	na	☐	☐	☑
55	na	Milky weathering	☐	☐	☐
56	na	na	☐	☐	☐
57	na	na	☐	☐	☐
58	With air bubbles; the irregular rim is rounded. Possibly Isings Form 8.	na	☐	☐	☐
59	Fragment is almost colourless.	Weathered.	☐	☐	☑
60	Air bubbles; smooth on the inside.	Heavily weathered.	☐	☐	☑
61	The neck is funnel-shaped.	na	☐	☐	☑
62	Vessel is bulbous in shape.	Signs of wear on the base.	☐	☐	☐
63	na	na	☐	☐	☐
64	na	na	☐	☐	☐
65	na	Weathered	☐	☐	☐
66	na	na	☐	☐	☐
67	Only a quarter left.	na	☐	☐	☐
68	na	na	☐	☐	☐
69	na	na	☐	☐	☐
70	na	na	☐	☐	☑
71	na	na	☐	☐	☐
72	na	na	☐	☐	☐
73	Only half left.	na	☐	☐	☐
74	Only half left.	na	☐	☐	☐
75	Only half left.	na	☐	☐	☐
76	Only a fragment left.	na	☐	☐	☑
77	Only half left.	na	☐	☐	☑
78	Only a quarter left.	na	☐	☐	☑
79	Only a fragment left.	na	☐	☐	☑
80	Only half left.	Heavily Weathered.	☐	☐	☑
81	Length: 1.5; Width: 0.5	na	☐	☐	☐
82	Length: 1.25; Width: 0.4	na	☐	☐	☐
83	Length: 1.5; Width: 0.5	na	☐	☐	☐
84	Length: 1.85; Width: 0.4	na	☐	☐	☐
85	Length: 1.5; Width: 0.5	Slightly weathered.	☐	☐	☐
86	8-shaped in longitudinal section. Length 0.9 cm. Outer diameter of the larger segment 0.6 cm, the small segment 0.4 cm.	na	☐	☐	☐
87	na	na	☐	☐	☐
88	Irregular with many air bubbles. The ring is made from a thin glass rod. One end is cut off vertically and lies in a spiral on the ring.	Weatherd whitely, especially on the insid	☐	☐	☑
89	A little more than half is left.	Strongly weathered.	☐	☐	☑
91	From a conical bead or from the button of a needle.	Strongly weathered.	☐	☐	☐

ID	Find Year	Object Name	Find Nr	Fragment	Function	Production Cate	Colour	Light/Dark	Primary Colour	Secondary	Diametre	Height (Rim)
92	1974	Game Piece	K87	na	Game Piece	na	Monochrome	na	White	na	1.25 - 1.35	na
93	1975	Game Piece	I90	na	Game Piece	na	Monochrome	na	White	na	1.5	na
94	1974	Game Piece	O90	na	Game Piece	na	Monochrome	na	White	na	1.45 - 1.55	na
95	1975	Game Piece	M91	na	Game Piece	na	Monochrome	na	White	na	1.55	na
96	1975	Game Piece	I92	na	Game Piece	na	Monochrome	na	White	na	0.95 - 1	na
97	1975	Game Piece	J92	na	Game Piece	na	Monochrome	na	White	na	1.55 - 1.8	na
98	1975	Game Piece	I93	na	Game Piece	na	Monochrome	na	White	na	1.8	na
99	1975	Game Piece	L95	na	Game Piece	na	Monochrome	na	White	na	1.55 - 1.75	na
100	1975	Game Piece	I95	na	Game Piece	na	Monochrome	na	White	na	1.8	na
101	1975	Game Piece	I95	na	Game Piece	na	Monochrome	na	White	na	1.8	na
102	1975	Game Piece	K98	na	Game Piece	na	Monochrome	na	White	na	1.3	na
103	1975	Game Piece	O98	na	Game Piece	na	Monochrome	na	White	na	1.6 - 1.75	na
104	1975	Game Piece	L99	na	Game Piece	na	Monochrome	na	White	na	1.65 - 1.75	na
105	1975	Game Piece	M100	na	Game Piece	na	Monochrome	na	White	na	1.55	na
106	1975	Game Piece	N100	na	Game Piece	na	Monochrome	na	White	na	1.55 - 1.6	na
107	1975	Game Piece	K101	na	Game Piece	na	Monochrome	na	White	na	1.1 - 1.15	na
108	1975	Game Piece	M101	na	Game Piece	na	Monochrome	na	White	na	1.75 - 1.9	na
109	1975	Game Piece	N103	na	Game Piece	na	Monochrome	na	White	na	1.15 - 1.2	na
110	1975	Game Piece	N104	na	Game Piece	na	Monochrome	na	White	na	1.5 - 1.6	na
111	1975	Game Piece	O105	na	Game Piece	na	Monochrome	na	White	na	1 - 1.1	na
112	1975	Game Piece	M106	na	Game Piece	na	Monochrome	na	White	na	1.5	na
113	9999	Game Piece	9999*	na	Game Piece	na	Monochrome	na	White	na	1.05	na
114	9999	Game Piece	9999*	na	Game Piece	na	Monochrome	na	White	na	1.7 - 1.8	na
115	1973	Game Piece	J73	na	Game Piece	na	Monochrome	na	White	na	1.5	na
116	1974	Game Piece	N73	na	Game Piece	na	Monochrome	na	White	na	1.05 - 1.4	na
117	1973	Game Piece	H76	na	Game Piece	na	Monochrome	na	White	na	1.6 - 1.75	na
118	1973	Game Piece	H76	na	Game Piece	na	Monochrome	na	White	na	1.5	na
119	1974	Game Piece	N77	na	Game Piece	na	Monochrome	na	White	na	1.2 - 1.4	na
120	1974	Game Piece	M78	na	Game Piece	na	Monochrome	na	White	na	na	na
121	1974	Game Piece	J83	na	Game Piece	na	Monochrome	na	White	na	1.2	na
122	1974	Game Piece	P63	na	Game Piece	na	Monochrome	na	White	na	2.1	na
123	1974	Game Piece	O63	na	Game Piece	na	Monochrome	na	White	na	1.6 - 1.8	na
124	1974	Game Piece	R71	na	Game Piece	na	Monochrome	na	White	na	1.5 - 1.7	na
125	1974	Game Piece	Q71	na	Game Piece	na	Monochrome	na	White	na	1.1	na
126	1974	Game Piece	Q71	na	Game Piece	na	Monochrome	na	White	na	1.8	na
127	1974	Game Piece	Q71	na	Game Piece	na	Monochrome	na	White	na	1.2	na
128	1974	Game Piece	O71	na	Game Piece	na	Monochrome	na	White	na	1.35 - 1.4	na
129	1975	Game Piece	O72	na	Game Piece	na	Monochrome	na	White	na	1.55	na
130	1974	Game Piece	T74	na	Game Piece	na	Monochrome	na	White	na	1.65	na
131	1974	Game Piece	S74	na	Game Piece	na	Monochrome	na	White	na	2.05	0.7
132	1974	Game Piece	P74	na	Game Piece	na	Monochrome	na	White	na	1.9	na
133	1974	Game Piece	Z76	na	Game Piece	na	Monochrome	na	White	na	1.6 - 1.7	na
134	1974	Game Piece	Y75*	na	Game Piece	na	Monochrome	na	White	na	na	na
135	1974	Game Piece	W75	na	Game Piece	na	Monochrome	na	White	na	1.65	na

ID	Extra Comments	Damage	Opaque	Iridescent	Translucent
92	na	na	☑	☐	☐
93	Only 2/3 of the piece is left.	na	☑	☐	☐
94	na	na	☑	☐	☐
95	Only 3/4 of the piece is left.	na	☑	☐	☐
96	na	na	☑	☐	☐
97	Oval	na	☑	☐	☐
98	Only 3/4 of the piece is left.	na	☑	☐	☐
99	na	na	☑	☐	☐
100	Only 3/4 of the piece is left.	na	☑	☐	☐
101	Only half of the piece is left.	na	☑	☐	☐
102	Only half of the piece is left.	na	☑	☐	☐
103	na	na	☑	☐	☐
104	Irregular	na	☑	☐	☐
105	na	na	☑	☐	☐
106	na	na	☑	☐	☐
107	na	na	☑	☐	☐
108	Irregular	na	☑	☐	☐
109	na	na	☑	☐	☐
110	na	Slightly damaged.	☑	☐	☐
111	Irregular; bottom is not completely flat.	na	☑	☐	☐
112	Only 3/4 of the piece is left; irregular.	na	☑	☐	☐
113	na	na	☑	☐	☐
114	na	na	☑	☐	☐
115	A little more than half is left.	na	☑	☐	☐
116	Oval; irregular.	na	☑	☐	☐
117	na	na	☑	☐	☐
118	Only 3/4 of the piece is left.	na	☑	☐	☐
119	Oval.	Heavily weathered.	☑	☐	☐
120	Very small fragment.	na	☑	☐	☐
121	na	na	☑	☐	☐
122	Only half of the piece is left.	na	☑	☐	☐
123	na	na	☑	☐	☐
124	Two fitting pieces.	na	☑	☐	☐
125	na	na	☑	☐	☐
126	Only 3/4 of the piece is left.	na	☑	☐	☐
127	na	na	☑	☐	☐
128	na	na	☑	☐	☐
129	A little more than half is left.	na	☑	☐	☐
130	Only half of the piece is left.	na	☑	☐	☐
131	A little more than half is left.	na	☑	☐	☐
132	Only 1/3 of the piece is left.	na	☑	☐	☐
133	na	na	☑	☐	☐
134	IS MISSING?	na	☑	☐	☐
135	A lititle more than half is left.	na	☑	☐	☐

ID	Find Year	Object Name	Find Nr	Fragment	Function	Production Cate	Colour	Light/Dark	Primary Colour	Secondary	Diametre	Height (Rim)
136	1974	Game Piece	U75	na	Game Piece	na	Monochrome	na	White	na	1.45 - 1.55	na
137	1973	Game Piece	E77	na	Game Piece	na	Monochrome	na	White	na	1.3 - 1.4	na
138	1973	Game Piece	C78	na	Game Piece	na	Monochrome	na	White	na	1.75	na
139	1973	Game Piece	C78	na	Game Piece	na	Monochrome	na	White	na	1.4 - 1.5	na
140	1973	Game Piece	B78	na	Game Piece	na	Monochrome	na	White	na	1.4 - 1.5	na
141	1974	Game Piece	C79	na	Game Piece	na	Monochrome	na	White	na	1.7	na
142	9999	Game Piece	9999	na	Game Piece	na	Monochrome	na	White	na	1.8	na
143	9999	Game Piece	9999	na	Game Piece	na	Monochrome	na	White	na	1.75	na
144	9999	Game Piece	9999	na	Game Piece	na	Monochrome	na	White	na	1.65 - 1.8	na
145	9999	Game Piece	9999	na	Game Piece	na	Monochrome	na	White	na	1.5 - 1.55	na
146	9999	Game Piece	9999	na	Game Piece	na	Monochrome	na	White	na	1.7	na
147	9999	Game Piece	9999	na	Game Piece	na	Monochrome	na	White	na	1.6	na
148	9999	Game Piece	9999	na	Game Piece	na	Monochrome	na	White	na	1.6	na
149	9999	Game Piece	9999	na	Game Piece	na	Monochrome	na	White	na	na	na
150	1975	Game Piece	I89	na	Game Piece	na	Monochrome	na	Black	na	1.8 - 1.9	na
151	1974	Game Piece	M89	na	Game Piece	na	Monochrome	na	Black	na	1.5	na
152	1974	Game Piece	O89	na	Game Piece	na	Monochrome	na	Black	na	1.15 - 1.5	na
153	1975	Game Piece	N91	na	Game Piece	na	Monochrome	na	Black	na	1.55	na
154	1975	Game Piece	I90	na	Game Piece	na	Monochrome	na	Black	na	1.15 - 1.2	na
155	1975	Game Piece	I92	na	Game Piece	na	Monochrome	na	Black	na	1.2	na
156	1975	Game Piece	I93	na	Game Piece	na	Monochrome	na	Black	na	1.6 - 1.85	na
157	1975	Game Piece	I94	na	Game Piece	na	Monochrome	na	Black	na	1.05	na
158	1975	Game Piece	O99	na	Game Piece	na	Monochrome	na	Black	na	1.4 - 1.45	na
159	1975	Game Piece	J101	na	Game Piece	na	Monochrome	na	Black	na	1.3 - 1.35	na
160	1975	Game Piece	L103	na	Game Piece	na	Monochrome	na	Black	na	1.55 - 1.6	na
161	1975	Game Piece	M103	na	Game Piece	na	Monochrome	na	Black	na	1.6	0.7
162	1975	Game Piece	M104	na	Game Piece	na	Monochrome	na	Black	na	1.25 - 1.3	na
163	1975	Game Piece	M104	na	Game Piece	na	Monochrome	na	Black	na	1.45	na
164	1976	Game Piece	9999	na	Game Piece	na	Monochrome	na	Black	na	1.55 - 1.6	na
165	1976	Game Piece	9999*	na	Game Piece	na	Monochrome	na	Black	na	1.4	na
166	1974	Game Piece	AK83	na	Game Piece	na	Monochrome	na	Black	na	1.8 - 1.9	na
167	1974	Game Piece	M76	na	Game Piece	na	Monochrome	na	Black	na	1.25 - 1.3	na
168	1973	Game Piece	G78	na	Game Piece	na	Monochrome	na	Black	Blue	1.8 - 1.9	na
169	1974	Game Piece	K78	na	Game Piece	na	Monochrome	na	Black	na	1.75 - 1.8	na
170	1974	Game Piece	O69	na	Game Piece	na	Monochrome	na	Black	na	1.5	na
171	1974	Game Piece	P70	na	Game Piece	na	Monochrome	na	Black	na	1.55	na
172	1974	Game Piece	N71	na	Game Piece	na	Monochrome	na	Black	na	1.5 - 1.55	na
173	1974	Game Piece	P71	na	Game Piece	na	Monochrome	na	Black	na	1.9 - 1.95	na
174	1974	Game Piece	O72	na	Game Piece	na	Monochrome	na	Black	na	1.2 - 1.3	na
175	1974	Game Piece	S72	na	Game Piece	na	Monochrome	na	Black	na	1.75 - 1.8	na
176	1974	Game Piece	T72	na	Game Piece	na	Monochrome	na	Black	na	0.95 - 1.05	na
177	1974	Game Piece	S73	na	Game Piece	na	Monochrome	na	Black	na	1.7 - 1.75	na
178	1974	Game Piece	T73	na	Game Piece	na	Monochrome	na	Black	na	1.3 - 1.4	na
179	1974	Game Piece	U73	na	Game Piece	na	Monochrome	na	Black	na	1.7 - 1.75	na

ID	Extra Comments	Damage	Opaque	Iridescent	Translucent
136	na	na	☑	☐	☐
137	na	na	☑	☐	☐
138	A little more than half is left.	na	☑	☐	☐
139	na	na	☑	☐	☐
140	na	na	☑	☐	☐
141	Only a small fragment is left.	na	☑	☐	☐
142	A little more than half is left.	na	☑	☐	☐
143	na	na	☑	☐	☐
144	Only 5/6 of the piece is left.	na	☑	☐	☐
145	na	na	☑	☐	☐
146	Only half of the piece is left.	na	☑	☐	☐
147	Only half of the piece is left.	na	☑	☐	☐
148	Small fragment.	na	☑	☐	☐
149	Small fragment.	na	☑	☐	☐
150	na	na	☐	☑	☐
151	Only half of the piece is left.	na	☐	☑	☐
152	Oval.	Heavily weathered.	☐	☐	☐
153	Only half of the piece is left.	na	☐	☑	☐
154	na	na	☐	☐	☐
155	na	na	☐	☐	☐
156	Oval.	Heavily weathered.	☐	☐	☐
157	na	na	☐	☐	☐
158	Bottom has four grooves.	na	☐	☐	☐
159	na	na	☐	☐	☐
160	Irregular.	na	☐	☐	☐
161	Only half of the piece is left.	na	☐	☐	☐
162	Only 3/4 of the piece is left.	na	☐	☐	☐
163	Only 3/4 of the piece is left.	na	☐	☐	☐
164	na	na	☐	☐	☐
165	na	na	☐	☐	☐
166	na	na	☐	☐	☐
167	na	Weathered	☐	☐	☐
168	With lighter streaks within.	na	☐	☐	☐
169	na	Weathered	☐	☐	☐
170	na	na	☐	☐	☐
171	na	na	☐	☐	☐
172	na	na	☐	☑	☐
173	na	Heavily weathered at the bottom.	☐	☐	☐
174	na	na	☐	☐	☐
175	na	Weathered	☐	☐	☐
176	na	na	☐	☐	☐
177	na	na	☐	☐	☐
178	na	na	☐	☐	☐
179	na	na	☐	☐	☐

ID	Find Year	Object Name	Find Nr	Fragment	Function	Production Cate	Colour	Light/Dark	Primary Colour	Secondar	Diametre
180	1973	Game Piece	H75	na	Game Piece	na	Monochrome	na	Black	na	1.65 - 1.7
181	1974	Game Piece	T75	na	Game Piece	na	Monochrome	na	Black	na	1.6 - 1.65
182	1974	Game Piece	A76	na	Game Piece	na	Monochrome	na	Black	na	1.8
183	1974	Game Piece	B76	na	Game Piece	na	Monochrome	na	Black	na	1.5 - 1.6
184	1974	Game Piece	P76	na	Game Piece	na	Monochrome	na	Black	na	1.35 - 1.5
185	1974	Game Piece	P76	na	Game Piece	na	Monochrome	na	Black	na	1.55 - 1.65
186	1974	Game Piece	S76	na	Game Piece	na	Monochrome	na	Black	na	1.95 - 2
187	1974	Game Piece	T76	na	Game Piece	na	Monochrome	na	Black	na	1.35 - 1.4
188	1974	Game Piece	W76	na	Game Piece	na	Monochrome	na	Black	na	1.55 - 1.75
189	1974	Game Piece	E77	na	Game Piece	na	Monochrome	na	Black	na	1.8 - 1.9
190	1974	Game Piece	X77	na	Game Piece	na	Monochrome	na	Black	na	1.5 - 1.65
191	1973	Game Piece	C78	na	Game Piece	na	Monochrome	na	Black	na	1.4
192	1974	Game Piece	O78	na	Game Piece	na	Monochrome	na	Black	na	1.5 - 1.6
193	1974	Game Piece	Q79	na	Game Piece	na	Monochrome	na	Black	na	1.4
194	1973	Game Piece	X79	na	Game Piece	na	Monochrome	na	Black	na	1.5
195	9999	Game Piece	9999	na	Game Piece	na	Monochrome	na	Black	na	1.6 - 1.8
196	9999	Game Piece	9999	na	Game Piece	na	Monochrome	na	Black	na	1.05 - 1.1
197	9999	Game Piece	9999	na	Game Piece	na	Monochrome	na	Black	na	1.1
198	9999	Game Piece	9999	na	Game Piece	na	Monochrome	na	Black	na	1.3 -1.35
199	9999	Game Piece	9999	na	Game Piece	na	Monochrome	na	Black	na	1.45 - 1.5
200	9999	Game Piece	9999	na	Game Piece	na	Monochrome	na	Black	na	1.5 - 1.6
201	9999	Game Piece	9999	na	Game Piece	na	Monochrome	na	Black	na	1.5 - 1.6
202	9999	Game Piece	9999	na	Game Piece	na	Monochrome	na	Black	na	0.7
203	1974	Game Piece	M77	na	Game Piece	na	Monochrome	na	Purple	na	1.3
204	1974	Game Piece	O62	na	Game Piece	na	Monochrome	na	Purple	na	1.5
205	1975	Game Piece	M106	na	Game Piece	na	Monochrome	na	Purple	na	0.8
206	9999	Game Piece	9999	na	Game Piece	na	Monochrome	na	Purple	na	0.8
207	1974	Game Piece	B76	na	Game Piece	na	Monochrome	na	Blue	na	1.3 - 1.5
208	1973	Game Piece	H71	na	Game Piece	na	Monochrome	na	Blue	na	0.9 - 1
209	1974	Game Piece	T73	na	Game Piece	na	Monochrome	na	Blue	na	1.3 - 1.4
210	1974	Game Piece	V75	na	Game Piece	na	Monochrome	na	Blue	na	1.3 - 1.35
211	9999	Game Piece	9999	na	Game Piece	na	Monochrome	na	Blue	na	1.7 - 1.8
212	1974	Game Piece	K86	na	Game Piece	na	Monochrome	na	Yellow	na	1.2 - 1.25
213	1974	Game Piece	A76	na	Game Piece	na	Monochrome	Light	Blue	Green	1.3 - 1.55
214	1974	Game Piece	N77	na	Game Piece	na	Monochrome	Light	Blue	Green	0.8 - 0. 85
215	1975	Game Piece	L95	na	Game Piece	na	Monochrome	Light	Blue	Green	1.2 - 1.3
216	1975	Game Piece	M100	na	Game Piece	na	Monochrome	Light	Blue	Green	1.1 - 1.2
217	9999	Game Piece	9999	na	Game Piece	na	Monochrome	Light	Blue	Green	1.15 - 1.2
218	9999	Game Piece	9999	na	Game Piece	na	Monochrome	na	na	na	1.8
219	9999	Game Piece	9999	na	Game Piece	na	Monochrome	na	na	na	0.85
220	9999	Game Piece	9999	na	Game Piece	na	Monochrome	na	na	na	1.4
221	1974	Marbled Game Piece	K77	na	Game Piece	Marbled Glass	Polychrome	na	Blue	White	1.3
222	1974	Marbled Game Piece	W76	na	Game Piece	Marbled Glass	Polychrome	na	Blue	White	0.8 - 0.9
223	1974	Marbled Game Piece	9999	na	Game Piece	Marbled Glass	Polychrome	na	Blue	White	0.8

ID	Extra Comme	Damage	Opaque	Iridescent
180	na	na	☐	☐
181	na	Weathered	☐	☐
182	A little more than half is left.	na	☐	☑
183	na	na	☐	☐
184	na	na	☐	☐
185	na	na	☐	☐
186	Very irregular; Only 5/6 of the piece is left.	na	☐	☑
187	Two fitting fragments.	na	☐	☐
188	na	na	☐	☑
189	na	na	☐	☐
190	na	na	☐	☐
191	na	na	☐	☑
192	na	na	☐	☑
193	na	na	☐	☐
194	na	na	☐	☐
195	na	Weathered	☐	☐
196	na	Weathered	☐	☐
197	na	na	☐	☐
198	na	na	☐	☐
199	na	na	☐	☐
200	na	Weathered	☐	☐
201	na	Heavily weathered	☐	☐
202	na	Gray weathered	☐	☐
203	na	na	☐	☐
204	Only half of the piece is left.	na	☐	☐
205	Game pieces or glass drops.	Weathered	☐	☐
206	na	Weathered (gold/greenish)	☐	☐
207	na	na	☐	☐
208	na	na	☐	☐
209	na	na	☐	☐
210	na	na	☐	☐
211	na	Weathered	☐	☐
212	na	na	☐	☐
213	na	na	☐	☐
214	na	na	☐	☐
215	na	na	☐	☐
216	Almost triangular; Irregular bottom.	na	☐	☐
217	na	Weathered	☐	☐
218	Colour indeterminate due to iridescence; Only 1/3 of the piece is left.	na	☐	☑
219	Colour indeterminate due to iridescence	na	☐	☑
220	Colour indeterminate due to iridescence; Only 1/3 of the piece is left.	na	☐	☑
221	na	Weathered	☐	☐
222	na	na	☐	☐
223	na	na	☐	☐

Appendix 5: Database from van Lith (1981)

ID	Object Name	Find Nr	Fragment	Function	Production Cate	Isings	Colour	Light/Dark	Primary Co	Secondary	Thickness	Decoration	Decoration Colour
1	Lace or Network Glass	9999	na	Bowl	na	1	Polychrome	Light	Blue	Green	na	Threading	White
2	Lace or Network Glass	9999	na	Bowl	na	1	Polychrome	Light	Blue	Green	na	Threading	White
3	Lace or Network Glass	9999	na	Bowl	na	1	Polychrome	Light	Blue	Green	na	Threading	White
4	Lace or Network Glass	9999	na	Bowl	na	1	Polychrome	Light	Blue	Green	na	Threading	White
5	Carinated Bowl of Millefiori Glass	57	na	Bowl	Millefiori Bowl	2	Polychrome	Dark	Green	na	0.25	Floral Pattern w. dots	Green, white, brown, yellow
6	Carinated Bowl of Millefiori Glass	R77	na	Bowl	Millefiori Bowl	2	Polychrome	Dark	Green	na	0.2 - 0.4	Floral Pattern	D.blue/white/red/yellow-green/green
7	Carinated Bowl	9999	Rim	Bowl	Carinated Bowl	2	Monochrome	Light	Green	na	na	na	na
8	Carinated Bowl	9999	Rim	Bowl	Carinated Bowl	2	Monochrome	na	Black	Green	na	na	na
9	Ribbed Bowl	9999	Wall	Bowl	Ribbed Bowl	3	Monochrome	na	White	na	na	na	na
10	Ribbed Bowl	9999	Wall	Bowl	Ribbed Bowl	3	Monochrome	na	White	na	na	na	na
11	Ribbed Bowl of Marbled Glass	9999	na	Bowl	Marbled Glass	3	Polychrome	na	Purple	na	na	Marbling	Yellow or White
12	Ribbed Bowl of Marbled Glass	9999	na	Bowl	Marbled Glass	3	Polychrome	na	Purple	na	na	Marbling	Yellow or White
13	Ribbed Bowl of Marbled Glass	9999	na	Bowl	Marbled Glass	3	Polychrome	na	Amber	na	na	Marbling	Yellow or White
14	Ribbed Bowl of Marbled Glass	9999	na	Bowl	Marbled Glass	3	Polychrome	na	Amber	na	na	Marbling	Yellow or White
15	Ribbed Bowl of Marbled Glass	9999	na	Bowl	Marbled Glass	3	Polychrome	na	Blue	na	na	Marbling	Yellow or White
16	Ribbed Bowl of Marbled Glass	9999	na	Bowl	Marbled Glass	3	Polychrome	na	Green	na	na	Marbling	Yellow or White
17	Deep Bowl	9999	na	Bowl	Marbled Glass	1	Polychrome	na	Purple	na	na	Marbling	White
18	Deep Bowl	9999	na	Bowl	Marbled Glass	1	Polychrome	na	Purple	na	na	Marbling	White
19	Deep Bowl	9999	Rim	Bowl	Marbled Glass	18	Polychrome	na	Blue	na	na	Marbling	White
21	Undetermined Unguentarium	9999	na	Unguentarium	na	0	Monochrome	Light	Blue	Green	na	na	na
22	Undetermined Unguentarium	9999	na	Unguentarium	na	0	Monochrome	Light	Blue	Green	na	na	na
23	Undetermined Unguentarium	9999	na	Unguentarium	na	0	Monochrome	Light	Blue	Green	na	na	na

ID	Comments on Decoration	Extra Comments
1	The threadings are opaque, parallel spirals	na
2	The threadings are opaque, parallel spirals	na
3	The threadings are opaque, parallel spirals	na
4	The threadings are opaque, parallel spirals	na
5	Part of an angular, light green flower with white rods on the edge. Two small brown spots with a yellowish frame, one of which has a yellowish dot in the middle.	Fragment is slightly curved.
6	D. blue flowers, interspersed with white sticks, white point w. red ring; yellow-green flowers with white rods/red center; green flowers with yellow rods/white center/red ring	Fragment is slightly curved.
7	na	na
8	na	na
9	na	na
10	na	na
11	na	Colours are unsure due to lack of description.
12	na	Colours are unsure due to lack of description.
13	na	Colours are unsure due to lack of description.
14	na	Colours are unsure due to lack of description.
15	na	Colours are unsure due to lack of description.
16	na	Colours are unsure due to lack of description.
17	na	na
18	na	na
19	na	na
21	na	na
22	na	na
23	na	na

ID	Opaque	Iridescent	Translucent	Other ves
1	☐	☐	☐	na
2	☐	☐	☐	na
3	☐	☐	☐	4
4	☐	☐	☐	3
5	☐	☐	☐	6
6	☐	☑	☐	5
7	☑	☐	☐	na
8	☐	☐	☑	na
9	☑	☐	☐	na
10	☑	☐	☐	na
11	☐	☐	☐	na
12	☐	☐	☐	na
13	☐	☐	☐	na
14	☐	☐	☐	na
15	☐	☐	☐	na
16	☐	☐	☐	na
17	☐	☐	☐	na
18	☐	☐	☐	na
19	☐	☐	☐	na
21	☐	☐	☐	na
22	☐	☐	☐	na
23	☐	☐	☐	na