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From Tamerlane's tableware to everyday pottery: Daily life in the outskirts of Samarkand (13th–15th centuries)☆

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ABSTRACT

Despite the importance of the Ilkhanid and Timurid periods in Central Asia, the related pottery productions, especially unglazed and glazed earthenware, are among the least studied and understood. This paper presents recent discoveries from the site of Kafir Kala relating to a historical phase previously unknown at the site, namely the Ilkhanid and early Timurid periods (13th–15th centuries), and to the pottery productions circulating at the site during this time.

The long-term investigations conducted by the Italian–Uzbek Archaeological Project -UIAP on the citadel of Kafir Kala have revealed an important pre-Islamic administrative centre. After the Arab conquest of 712 CE, the citadel was converted to a residential function and remained in use until its abandonment in the 12th century CE. Recent investigations in the southern *shahristan* and the necropolis, together with a reassessment of the material recovered from the excavation of the northern towers, have made it possible to extend the occupational phase of Kafir Kala into the 15th century CE.

The corpus comprises unglazed productions for about 95%. Glazed earthenware vessels are mainly medium-low-quality products, with a handful of higher-quality stonepaste specimens. The overall simplicity of the wares and the finding of restored or reused items suggest a modest lifestyle, possibly reflecting the rural nature of this settlement. Nonetheless, the evidence of local pottery production and the analysis of unglazed vessels point to a still active manufacture with interesting patterns: the variety of new forms and decorations coexisted with a revival of ancient features.

1. Introduction

Kafir Kala is one of the most important historical settlements in the Samarkand oasis. Located on the left bank of the Dargom Canal, approximately 12 km from ancient Samarkand (now the archaeological site of Afrasiab), the site occupies a strategic position in the southern part of the Middle Zeravshan Valley (Fig. 1). The site covers approximately 25 ha and is bounded by both natural and artificial watercourses (Fig. 2). The site is entirely constructed in mudbrick architecture and stands out as a landmark within the surrounding landscape. This monumentality had enabled the site's preservation, in contrast to the Soviet-period agricultural policies that caused dramatic transformations in this region, including the irreversible destruction of the archaeological record (Mantellini and Berdimuradov, 2019).

The site is dominated by a quadrangular citadel measuring 70 × 70 m at the base and rising to a height of 25 m. It is surrounded by a moat, which in turn is encircled by an extensive residential quarter (*shahristan*) running along all four sides. This residential area is interrupted to the north toward the Dargom canal, to the south toward the necropolis, and to the west, where a second moat leads to the outer city/suburb (*rabat*).

The area between the southern *shahristan* and the canal that delimited the site to the south was partly open and partly occupied by the necropolis, which has been largely destroyed in recent decades due to agricultural activities (Mantellini et al., 2025: 307–308). On the right bank of the Ilonsai stream (located to the east), the same agricultural practices caused the levelling of the artisanal quarter and the destruction of numerous sites, including a small building interpreted either as an estate (Shishkina 1961), a Zoroastrian tower of Silence, or a small

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fortress (Lebedeva 1999).

The toponym, literally deriving from Arabic as 'Fortress of the Infidels', does not appear in any written historical sources, although some scholars have hypothesized a correspondence with Revdad, mentioned by the geographer Istakhri in the 10th century as the rural residence of the pre-Islamic kings (*ikhshids*) of Samarkand (Grenet and de la Vaissière, 2002: 188, note 41, Grenet, 2020: 21).

Despite its importance, the site was the subject of only sporadic investigations during the last century. Research at Kafir Kala dates back to the early 20th century, when the archaeologist M. E. Masson surveyed the southern part of the site, starting from the hypothesis that it corresponded to the gardens of Kalbet, commissioned by Tamerlane and mentioned by the Spanish ambassador Ruy González de Clavijo during his stay in Samarkand in the very early years of the 15th century (Masson, 1928). Although Masson's theory was never fully proven, he conducted a highly systematic investigation of the ruins known as Misr-saar, producing two maps that remain particularly accurate to this day (Mantellini and Berdimuradov, 2005).

Subsequently, investigations focused on specific sectors of the site, such as the necropolis (Berdimuradov and Mukhammadiev, 2016), the kilns (Grigorev, 1940), and the western *shahristan* (unpublished). The citadel was first investigated by the Samarkand Institute of Archaeology in the early 1990s, yielding the first significant materials attributable to the Islamic transition between the 7th and 8th centuries CE.

Recently, after recognising its historical and archaeological significance, Kafir Kala has been inscribed on the UNESCO World Heritage List as part of the transnational nomination "Silk Roads: Zarafshan–Karakum Corridor" (https://whc.unesco.org/en/list/1675).

2. UIAP research

The UIAP investigations mark the beginning of systematic long-term research at Kafir Kala. Attention was directed to different areas of the site to understand its geological setting, its relationship with the course of the Dargom canal, and to obtain a complete stratigraphic sequence of the settlement (Tosi et al. 2001–2002; Mantellini, 2003; Mantellini et al., 2025).

Between 2001 and 2014, excavation activities focused on the following areas: the citadel (KK−1); the artisanal quarter east of the Ilonsai (KK−2); the towers within the northern moat (KK−3); the area between the northern *shahristan* and the Dargom canal (KK-4); and four test trenches between the citadel and the *rabat* (KK-5). More recent investigations—particularly relevant to the focus of the present article—include those carried out in the necropolis (KK-6, 2022–2024) and in southern *shahristan* (KK-7, 2022–2025).

2.1. Citadel

Excavations at the citadel (KK-1) brought to light evidence dating between the 7th and 12th centuries CE. The main UIAP finds consist of an exceptional corpus of 500+ clay bullae (Cazzoli and Cereti, 2005) that suggests the presence of an important active administrative centre and supports the interpretation of Kafir Kala as a power centre connected to the capital, and a strategic site in the management of this territory and possibly of trade along the local Silk Road routes. The end of this occupation was caused by a fire that occurred during the Arab conquest of Samarkand in 712 CE. The Arab conquest marked a temporary abandonment of the citadel and a pronounced transformation in the subsequent occupational phase. Numerous simple fireplaces, small built hearths (*achak*), cylindrical ovens (*tandir*), and pits containing waste materials witness a prevailing residential function of this space (Mantellini et al., 2016). The citadel's layout was reorganised according to new needs, and architecture underwent a transformation, characterised by several refurbishments, reuse of materials, and construction techniques less refined than those of the preceding period. The materials attesting the domestic activities consist mainly of pottery, faunal remains (Serrone et al., 2021), coins (Gariboldi, 2011; Gariboldi et al., 2018), and glass (Fiorentino et al., 2021; Chinni et al., 2023), which together allow us to date this occupation until the Karakhanid period (12th century CE).

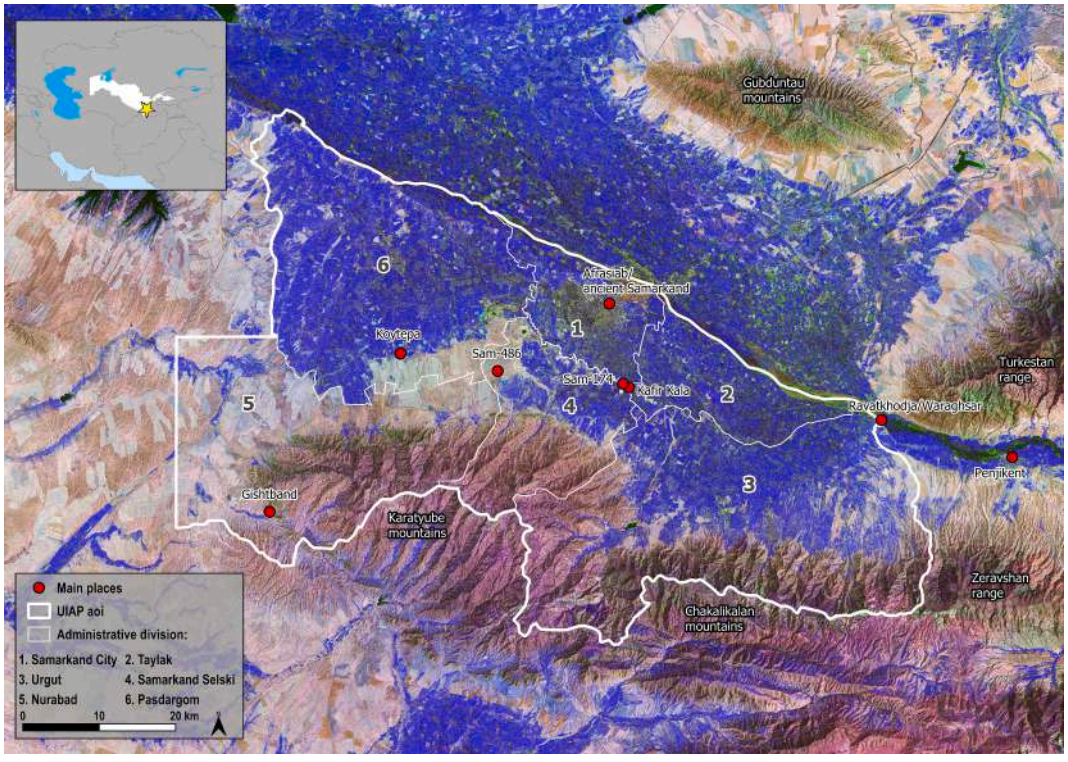


Fig. 1. The Samarkand area with the archaeological sites mapped by the UIAP, Afrasiab/ancient Samarkand and Kafir Kala (basemap Landsat TM satellite image 1991, © UIAP 2026).

2.2. Northern towers, necropolis, southern shahristan

Investigations conducted in the other sectors of the site aimed to verify the occupational phases identified in the citadel and, where possible, to extend the chronological sequence to additional periods of occupation (see Fig. 2).

Excavation at the base of the northern towers (KK-3) was carried out in 2003 with the aim of identifying construction techniques and establishing their chronology. Only a recent reassessment of the ceramic material has allowed for a better functional interpretation and a more accurate dating of the context. The investigations involved five test trenches, measuring 3 × 3 m and, in some cases, later expanded, named according to their orientation in relation to the towers. The two trenches of greatest relevance for the purposes of this article are the one at the western base of the eastern tower (sounding NEW) and the one located between the central and western towers (sounding NNW). The most significant evidence derives from sounding NEW, where a series of structures built of mud blocks (*pakhsa*) were constructed against the body of the tower, forming a small room of approximately 10 sqm (Fig. 3). The construction technique is rough; mudbrick was used flat to cover only a small heating installation located along the southern side of the room. A recess in the centre of the western wall accommodated a *tandir*, of which the upper part was preserved. The presence of many *tandir* fragments from this excavation suggests that more bread ovens had existed in the area, but they were dismantled and discarded once they stopped functioning. Outside the room, the occupation surface was cut by around ten pits containing large quantities of discarded materials, mainly pottery, animal bones, and ca. 200 slags, which suggests the presence of a ceramic production in this territory (see § 9).

Excavation in sounding NNW related only to a single natural deposit, approximately 1 m deep, before reaching the mudbrick wall in a good state of preservation. Numerous pottery sherds and fragments of fired bricks and tiles were recovered from within this stratigraphy. Although the ceramic material is too scanty to suggest any specific interpretation of the area, it is worth noting that the ceramic assemblages have an identical composition to those of sounding NEW; therefore, they can be attributed to the same chronology.

Excavation of the necropolis (KK-6) focused on the only mound (220 sqm) that survived the agricultural transformations of the last century, which extended up to the base of the *shahristan*. Investigations carried out by Sukharev in the late 1930s had already revealed the presence of a pre-Islamic funerary mound (*naus*), containing numerous terracotta ossuaries typical of Zoroastrian ritual practices, as well as Islamic burials from later periods (Berdimuradov and Mukhammadiev, 2016: 137–178). The evidence yielded by the UIAP excavations broadly confirms the results of earlier research, while providing new insights into the later phases of use of the funerary area (Mantellini et al., 2025: 307–308). Of the original Zoroastrian *naus*, only the architectural organisation of the necropolis has been preserved, as the ossuaries were already removed in antiquity, likely to accommodate subsequent burial practices. From the Islamic period onward, the structure was reused for inhumation burials, with a total of 41 graves documented by the conclusion of the excavations (Fig. 4). The human remains —currently under analysis— include both adults and infants, some of which were recovered from secondary depositional contexts. The graves typically consist of a two-level funerary arrangement, comprising an upper chamber (or *dromos*) and a lower chamber in which the deceased was laid. In several cases, the burial ritual involved the placement of one or two courses of clay blocks or mud bricks. Associated grave goods are



Fig. 3. The excavation of the sounding NEW in the northern towers area KK-3, from West (photo S. Mantellini, © UIAP 2003).



Fig. 2. Aerial view from Southwest of the archaeological complex of Kafir Kala with the main settlement features and excavation areas (drone acquisition IICAS Samarkand 2024, © UIAP 2026).



Fig. 4. Plan of the necropolis KK-6 with indicated the burials dated after 14C analyses (elaboration S. Facciani, © UIAP 2024).

scarce and limited to a small number of personal ornaments, such as bracelets, rings, and earrings, none of which offer reliable chronological indicators. The pottery from the layers overlying the burials consists of coherent assemblages datable to the Ilkhanid-early Timurid periods. This chronology is further supported by radiocarbon analyses (10 samples), which date the burials between the 9th and the 15th century, with a predominance (eight burials) in the 13th–14th centuries (Mantellini et al., 2025: 307–308).

Excavations in the southern *shahristan* (KK-7) focused on a 20 × 20 m area along the southern edge of the site. Investigations reached a depth of 5.70 m below the present ground surface and provided a complete stratigraphic sequence for this portion of the site. Stratigraphic analysis, integrated with ceramic evidence, has revealed an uninterrupted occupational sequence extending from the 4th–5th centuries CE —currently the earliest evidence attested at Kafir Kala— to the 15th century CE (Mantellini et al., 2025: 306). The uppermost levels correspond to the latest occupation, dated between the 13th and 15th centuries CE, and share the presence of an open area used for domestic purposes (Fig. 5). These phases indeed refer to *tandir*, *achak*, simple hearths, refuse pits, and postholes interpreted as supports for lightweight canopies or roofing structures (Fig. 6). Although closely spaced in time and sharing similar functions and characteristics, these phases are clearly distinguishable from a stratigraphic perspective. Phase 1 (likely post–15th century) corresponds to a short-lived and discontinuous occupation, marked by hearths, pits, and a circular stone structure constructed with river pebbles, whose unusual presence in this region may point to a ritual function or a cenotaph. Phase 2 (14th–15th centuries) is characterised by the organisation of a courtyard space equipped with small mudbrick workbenches for food preparation, alongside hearths, postholes, and refuse pits (Fig. 6). During Phase 3 (13th–14th centuries), the courtyard exhibits a more articulated spatial layout, reflected in the increased number of *tandir*, mudbrick workbenches, and refuse pits.



Fig. 5. Phase 2 (14th–15th centuries) in southern *shahristan* KK-7, from East (drone acquisition IICAS Samarkand 2024, © UIAP 2026).

3. Ceramics: State of the art

The ceramics collected from these excavations date to the 13th–15th centuries, revealing a previously unknown late medieval occupation phase at Kafir Kala. This article presents, for the first time, the pottery assemblage of this period—particularly the unglazed and common glazed wares—and highlights the predominantly rural character of the settlement during these centuries.

Despite the importance of the Ilkhanid and Timurid periods in Central Asia, the related pottery productions, especially unglazed and glazed earthenwares, are among the least studied and understood, both in terms of art history and archaeology. The article by G. Reitlinger



Fig. 6. Fire installations from the Phase 2 (14th–15th centuries) in southern *shahristan* KK-7, from South (photo S. Mantellini, © UIAP 2022).

(1938) has a very informative subtitle, "The Gap in the Fourteenth and Fifteenth Centuries". The situation does not change in a century, as O. Watson underlined: "[…] the period that is one of the least studied and least understood in Iranian ceramics: the later 14th and 15th centuries." (Watson, 2004: 393). M. Mueller-Wiener (2012: 57) said that "Not much is known, however, of the ceramics originating from the wide-ranging territories of the Timurids." (cf. also Golombek, 2014: 1). Their assumptions are still valid, as recently underlined by J. Mirzaakhmedov (2024: 267): "Despite the fact that a large number of written sources have come down to us from this period of history, the material culture of this time, which is the main indicator of the daily life and culture of the people, remains largely unexplored".

E.J. Grube, who dedicated several articles to the Timurid decorative arts, regretted the difficult task of precisely identifying Timurid pottery, because of the lack of studies of the pottery as a whole instead of specific wares, the scantiness of dated pieces and of archaeological works dealing with this pottery (Grube, 1996: 601–602).

In general, glazed pottery is the central focus of almost all the studies for these periods, especially high-quality and luxury vessels (Grube, 1974: 234; Watson, 2020: 322–349). For both periods, many scholars focused on blue and white productions and the relationship with Chinese pottery style (Grube, 1996; Golombek et al., 1996; Kadoi, 2018). Attention has also been paid to the lustreware of the Ilkhanid period. The staff of the Royal Ontario Museum dedicated great effort to the ROM Timurid Ceramics Project, whose main results have been published under the title "Tamerlane's tableware" (Golombek et al., 1996). Again, the focus was on high-quality glazed vessels.

But what about the ceramics of the Tamerlane's population? The vessels they did use were lower-quality glazed and unglazed materials, coexisting with expensive vessels, and certainly more abundant. They have received little or no attention. What are the consequences of such an attitude by pottery specialists toward these neglected productions?

Stratigraphic layers related to the 13th–15th centuries in Central Asian centres or regions not reached by luxury items, mainly because of their peripheral, marginal or rural nature, cannot be fully identified and understood, and so are the pottery assemblages collected in those layers. We should also consider that in many cases these periods meant a great change in life and use of the sites, with often unstructured living and working places or a lack of well-stratified deposits.

There is a need for comprehensive analysis of development, continuity and change in terms of fashions and technology between unglazed and glazed vessels of the early Islamic period, much better-known, and the productions related to the 13th century onwards of the Iranian and Central Asian regions.

The little knowledge of the Timurid low-quality glazed and unglazed pottery has also affected the pottery study of the post-Timurid period in Central Asia, whose productions are even more neglected (Franke and Urban, 2017: 30). Among the fewest recent works on pottery of the post-Timurid period, considering both glazed and unglazed productions, it is worth mentioning the one by A. Gascoigne et al., 2013 on Bala Hissar, Kabul, the analysis of the pottery from the survey in the Herat province by U. Franke and T. Urban (2025) and the brand-new contribution on Balkh by P. Siméon and N. Rasouli (2026).[1] J. Mirzaakhmedov has frequently presented post-Timurid glazed assemblages from Central Asian sites.[2]

Turning back to the Ilkhanid and Timurid phases, when medium-to-low-quality glazed productions are dealt with, they are almost exclusively underglaze painted earthenwares, which are akin to the higher quality items. This is the case of the studies considered herein by G.A. Pugachenkova (1950), J. Mirzaakhmedov (1992), and E.A. Smagulov (1992), respectively on pottery from Samarkand, Tashkent, and the minor site of Eski-Turkestan (south Kazakhstan).

Recent works have been published on both high-quality and more ordinary pottery, mostly glazed, related to the 13th–16th centuries from archaeological excavations at the Bukhara oasis, especially inside the city (Mirzaakhmedov, 2024, only glazed wares) and at the site of Vardanzeh (Mirzaakhmedov et al., 2019, only glazed wares; see also the annual reports by Pozzi, 2012, Pozzi et al., 2017, The Western Sogdian Archaeological Expedition, 2011). A few considerations on specific unglazed forms by G. Puschnigg and J. Bruno complete the framework (2024, see esp. the material from the sites of Iskijkat and Ramitan). These research works give some comparable materials, but again the unglazed vessels are very poorly considered.

As for Afrasiab/Samarkand, we have considered the work by L.F. Sokolovskaia (2015) for the unglazed pottery until the 13th century. Excavations are ongoing at Kok Saray, the palace of Tamerlane at Samarkand, by the Samarkand Institute of Archaeology.

A useful summary of glazed and unglazed productions of the 13th–15th centuries is reported in the publication of Central Asian Ceramics (VV.AA., 2011). Unfortunately, they are accompanied by a limited graphic or photographic documentation, with no unglazed *corpus* presented for Uzbekistan (VV.AA., 2011: 181–220).

The work by N.N. Vakturskaja (1959) on the productions from Khorezm, dated but still relevant, presents a well-defined typology of the unglazed pottery as well as monochrome glazed wares of the 12th–14th century, providing good parallels with the Kafir Kala corpus.

Ceramic materials from excavations at Termez by the Uzbek-Spanish mission were limited to a very restricted area, where materials from the 10th to 17th centuries were mixed, and only glazed and high-quality unglazed vessels (i.e. moulded jugs) have been identified (Fusaro et al., 2022).

Studies on ceramic materials from Afghan sites are also worth mentioning, as most of them are recent and up-to-date. The first is Herat, which remains a reference city for this period, being the capital since 1405 and among the most important and flourishing centres under the Timurids. The effort by Franke and Urban to publish a long stratigraphy including the periods under consideration, even if sometimes they are not related to reliable stratigraphy, is remarkable (Franke and Urban, 2017: 27–28). Their work on the ceramic material from the survey in the Herat province (2025) also offers a good number of comparisons, mainly for the ordinary low-quality glazed vessels and a very few unglazed shapes. However, the chronological markers for the 13th–15th centuries considered for dating the sites are still exclusively the better-known underglaze painted wares (Franke and Urban, 2025: 862–867).

Balkh was another key city under the Timurids. A little of the unglazed ware from there is presented by Jean-Claude Gardin (1957:

[1] The authors were able to look at the draft of the chapter, but not at the published volume, as it was print after the submission of this research. The authors thank Pierre Siméon for his generosity.

[2] See his extensive bibliography; see also Lebedeva, 1987 for Samarkand.

46–47, 97), especially the fine jugs decorated with stamped or incised motifs. The contribution by Siméon and Rasouli just published (2026) completes the framework from the site, with one of the largest glazed and unglazed pottery corpus dated to the late Timurid and post-Timurid/Safavid periods, along with a revision of the chronology of the late Islamic pottery. The material used for the comparative analysis within this research mainly dates from the 15th–16th century onwards (a gap exists for the 12th–14th centuries); for this reason the majority of the underglaze painted wares from the two sites are not comparable. However, several comparisons for unglazed forms show a continuity of traditions into later phases.

For Kandahar, where the post-Mongol occupation was reported, the sole focus is the glazed pottery (Crowe, 1996: 313–314).

We have also included a few Iranian sites, especially Hasanlu, North Iran (Danti, 2004) and Qal'eh Sang, Old Sirjan (Amirhajloo and Sedighian, 2020). The former represents the Ilkhanid heartland, with Takht-e Sulayman as the main centre; moreover, it is one of the few publications that shows unglazed items from the 14th century. The latter has been mentioned due to the importance of the period 13th–15th centuries at the site, but again, most of the ceramics presented are glazed.

4. Methodological approach and issues

The strong similarity of the ceramic assemblages recovered at Kafir Kala from KK-3, KK-6, and KK-7 excavations suggests a coeval period of formation and deposition.

Several methodological issues have emerged during the analysis and identification of the assemblages specifically related to the 13th–15th centuries.

The glazed vessels found at Kafir Kala and attributed to this period are mainly imitations of outstanding items published in catalogues (mainly from museums' collections). They are probably the products of more provincial workshops, as also demonstrated by a few comparisons with archaeological contexts.

If the glazed items recognised as chronological markers have facilitated the chronological attribution of the pottery assemblages, the intense use and alteration of the archaeological contexts, with the digging of several pits, dumps, postholes, and burial pits, have deeply altered the stratigraphy. The ceramics of different periods appeared highly mixed in the stratigraphy. This is also confirmed by the numerous matching sherds coming from distant layers. Therefore, discerning with certainty among the unglazed vessels belonging to the period considered and earlier productions is sometimes difficult, also considering the scantiness of comparative case studies. For this reason, no quantitative analysis is proposed. Quantities are reported exclusively for the glazed items (§ 5.1).

Fabrics related to unglazed and glazed wares are described in Table 1 and shown in Fig. 7. Fieldwork pictures were taken with a camera macrolens; a set of more detailed pictures at the microscope is planned. Fabrics are discussed in § 6–7 to understand continuity and change in technology.[3] As archaeometric characterisation of the fabrics has not yet been performed, the current research work exclusively relies on the analysis of fabrics within the stratigraphy of the different contexts by means of internal comparisons.

Three criteria have been followed to identify the wares and morphological types belonging to the period considered: the frequency of specific wares or types within the assemblages associated with chronological markers; the comparisons with the pottery from the citadel KK-1 (related to the period 7th–12th century) and from the lowest pre-Islamic layers of KK-7; comparative analyses with reliable assemblages from coeval Central Asian and Iranian sites.

[3] Archaeometric analyses have been conducted on fabrics related to the productions of the 7th–8th century and are under publication.

Table 1
Fabrics related to unglazed and glazed wares of the pottery corpus of Kafir Kala dated to the 13th–15th century.

Fab.	Description	Temper	Ass. fabrics	Related wares
1	Coarse reddish fabric, high compactness and hardness, abundant mineral temper	From granitoids, mainly quartzite and calcite minerals	1 grey	UNGLAZED. Cooking vessels
1G	Coarse grey-to-black fabric, high compactness and hardness, abundant mineral temper	mainly quartzite and calcite minerals	1	UNGLAZED. Cooking vessels
9	Very coarse pale brown fabric, very low compactness and hardness, abundant vegetal and mineral temper; possibly low-fired	Mainly very large-sized quartzite and calcite; vegetal temper	3	UNGLAZED. Trays/pans and flat lids (same body also for tandir)
3	Coarse and quite porous pale brown fabric, with abundant large-sized mineral temper	Mainly quartzite and calcite, mostly large-sized, poorly sorted	2	UNGLAZED. Storage jars
21	coarse pale brown-pale reddish fabric, hard and quite compact, abundant mineral temper	Mainly buff-creamy white clayey inclusions, sub-rounded and rounded, very poorly sorted, and a few micaceous and quartzite inclusions	3 and 2 (alteration)	UNGLAZED. Medium-sized tableware and storage jars
2	Hard but porous pale brown fabric, with moderate mineral temper; there exists a more porous, less compact and rougher variant	Medium-sized to fine inclusions, mainly quartzite and calcite	3	UNGLAZED. Tableware
10	Very fine pale brown fabric, compact and hard, very low quantity of mineral inclusions	Very fine micaceous, quartzite and calcite inclusions, well-sorted		UNGLAZED. Tableware
16	Fine fabric, red to brown, hard and compact, low frequency of inclusions	Very fine sub-angular and rounded quartzite, calcite and micaceous inclusions, well-sorted		GLAZED. Almost exclusively green monochrome wares, including some items with incised decoration; single specimens of underglaze painted wares and opaque turquoise monochrome ware
17	Fine buff fabric, medium-low compactness and hardness, porous and sandy body,	Very fine rounded quartzite, red opaque and micaceous	22	GLAZED. Mainly underglaze painted wares; also two-tone glazed ware (colourless/

(continued on next page)

Table 1 (*continued*)

Fab.	Description	Temper	Ass. fabrics	Related wares
	very low mineral temper	inclusions, well-sorted		turquoise, green/turquoise), turquoise monochrome and *sgraffiato* green wares
18	Medium-fine reddish fabric, medium-low compactness and hardness, highly porous, moderate quantity of mineral temper	mainly rounded fine opaque white (calcite?), also burnt out, and a few quartzite inclusions, with sparse micaceous, opaque black and grey temper		GLAZED. Almost equally used in green incised/carved ware, green and turquoise monochrome wares, underglaze painted ware
22	Quite fine buff fabric with a sandy and highly porous texture, very low compactness and hardness, moderate-low frequency of mineral temper	Mainly medium-sized and fine quartzite, angular and sub-angular	17	GLAZED. Almost exclusively underglaze painted ware, only one green monochrome vessel
23	Medium-coarse pinkish-to-grey fabric, high porosity and moderate mineral temper	Mainly angular and sub-angular large and medium quartzite inclusions and creamy white burnt-out rounded inclusions poorly sorted (calcite?)		GLAZED. Two-tone (yellow-green) glazed ware

Comparisons with coeval pottery productions have prioritised material from archaeological contexts rather than museum collections, especially for the unglazed items, which are more difficult to date. In case of ceramics from survey (e.g. Franke and Urban, 2025), the analysis has considered unglazed materials associated with glazed assemblages and architectural evidence pointing to a very limited timespan.

The ongoing excavations are increasingly allowing us to clarify and identify the pottery assemblages of the earlier periods within the timespan 4th–12th centuries. Therefore, a better-defined *corpus* of the 13th–15th centuries will be presented in details in the near future.

5. Pottery in the context

5.1. Quantitative information of the contexts

A quantitative analysis is not presented here, except for a few pieces of information useful to better understand the contexts. The amount of ceramics analysed and classified during the 2022–2024 campaigns, considering both the diagnostic items and the discarded ones, totals 11.765 pottery sherds and more complete items specifically related to the stratigraphy dated to the 13th–15th centuries. They are divided according to the excavated area:

- KK-7: 9.763;
- KK-6: 1.051;
- KK-3 – soundings NEW and NNW: 951.

Specifically concerning the glazed ceramics, we provide the number of sherds and the corresponding percentage of this class within the *corpus* of each excavated area:

- KK-3 (soundings NEW and NNW): 72 (7,6%).
- KK-7: 427 (4,4%).
- KK-6: 22 (2,1%).

Further details are given in Tables 2–4. It is worth comparing these data with the glazed ceramics from the citadel KK-1, which amount to only 19 items (less than 0,05% of the corpus). A consideration clearly emerges: even if glazed pottery is underrepresented within the corpus considered, ranging between ca 2 and 7%, the glazed ceramics are far more common during the Ilkhanid-Timurid periods than in the early Islamic period.

5.2. Northern towers (KK-3)

The short period and the reduced area of the excavations affected the amount of pottery collected, which is relatively small. Among the excavated soundings, we considered those labelled NNW and NEW, due to the strong similarities of the pottery with the assemblages of KK-7. This area is particularly interesting as evidence of pottery manufacture was recovered there.

5.3. Necropolis (KK-6)

The specific function of the area as a necropolis particularly affected the quantity of sherds recovered, which is 1/9 of the amount from KK-7 (§ 5.1). Within such a peculiar context, the most important and useful ceramic material is that directly associated with the burials, especially their fillings or the mudbricks used as grave markers, because they help propose a chronological attribution for the burials, giving a *terminus post quem*.

5.4. Southern shahristan (KK-7)

The ceramic material is abundant. Both the archaeological data and the pottery suggest that it was a a space primarily intended for food preparation and cooking activities. The ceramic assemblages excavated between 2022 and 2024 are quite homogeneous. The pottery analysis shows an important change between the ceramic assemblage from the deposit SU 1503 together with the pits of Phase 2, and the ceramic assemblage from the floor SU 1509 (and the deposit SU 1513 underneath), in which many pits and fireplaces were cut (Phase 3). The main differences detected are:

- the increase of the underglaze painted ware in the uppermost layers; absence of underglaze painted ware in SUs 1509–1513;
- the decrease of *sgraffiato* green ware in the uppermost layers; glazed class of SUs 1509–1513 comprises only the *sgraffiato* and incised green wares;
- the overall quantity of the glazed vessels within the assemblages shrank in the lower layers, especially those associated with Phase 3;
- in SU 1509 the unglazed medium-sized tableware is characterised by less coarse fabrics, generally more compact and with a few visible inclusions;
- cooking pots with grey bodies (fabric 1G) are much scarcer in Phase 3;
- unglazed hemispherical bowls with everted rim seem more common in Phase 3, being the straight simple rim better attested later.

The preliminary analysis of the assemblages suggests that Phase 2 can be attributed to the 14th–15th century, while Phase 3 seems earlier, possibly dating to the 13th–14th century.

6. Unglazed pottery

6.1. Unglazed medium-fine tableware

In Kafir Kala, the fine body remains almost unchanged over the centuries, with fabric 10 being the most used for fine tableware.

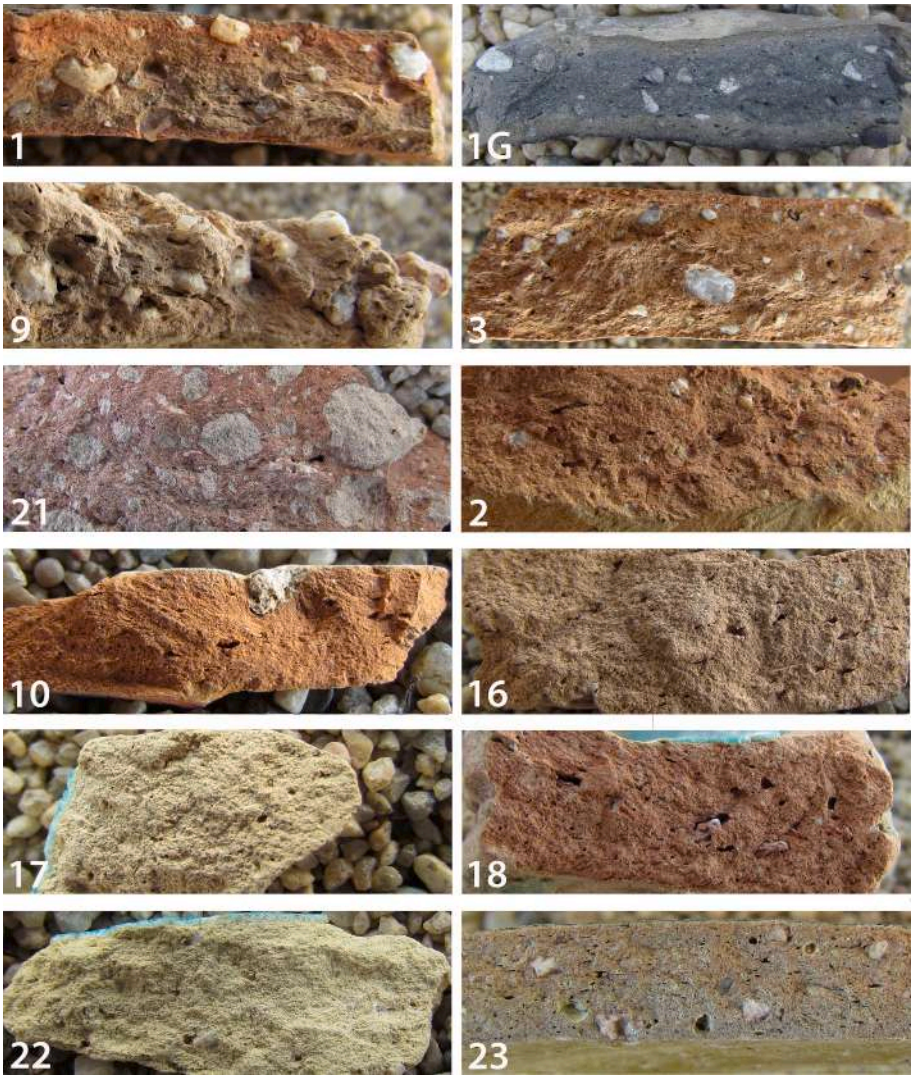


Fig. 7. Macroscopic photographs of fresh fractures of the body pastes identified in the assemblages, labelled as they appear in Table 1 (photos A. Fusaro, © UIAP 2022–2024).

However, in the middle Islamic period (i.e. 13th–15th centuries), part of the tableware lost quality, as especially demonstrated by the widespread use of a coarser fabric (Fabric 2), almost equalling the finest body 10 (Table 1).

6.1.1. Bowls

A far characteristic ware of this period comprises bowls. The great majority of the bowls were provided with a ring base, almost always with a central umbo in the lower surface. Bowls have a simple or everted rim and hemispherical body; in some cases, the profile is conical with a light carination (Fig. 8/a-b). The diameter ranges from ca. 14 to 20 cm. The majority of the specimens do not bear any decoration or coating; a few vessels are red slipped (Fig. 8/c). Many bowls show a specific treatment of the lower outer surface, smoothened and partially faceted with a knife-shaped tool; sometimes they also feature a self-slip in the upper inner surface.

The strong similarity between the form of these vessels and those of glazed vessels from the same assemblages seems to point to an imitation of the glazed forms by the unglazed productions.

Along with this homogeneous group, it is possible that shallow conical bowls with a simple rim and flat base (Fig. 8/d) were also produced in this period, as they were commonly found in KK-3 NEW and KK-7.[4] Conical bowls were found at Ramitan/Bukhara (Puschnigg and Bruno, 2024: 219, R85 dated 13th–14th c.) and Hasanlu (Danti, 2004: 36, fig. 19/6 dated 13th–14th c.) and more rarely at Herat (Franke and Urban, 2017: fig. 87a, pl. 37/1, dated 10th–14th c.).

We cannot exclude that thicker hemispherical bowls featuring a rounded rim with outer groove (Fig. 8/e) could be related to this period, according to the comparison with Qal'eh Sang (Amirhajloo and Sedighian, 2020: 171, fig. 4.1) and Herat (Franke and Urban, 2017: pl. 56/5, dated 13th–17th c.); a morphological similarity between fig. 8/e and an underglaze black painted bowl with turquoise glaze from the Herat province is striking (Franke and Urban, 2025: 413–416 no. 9, dated 10th–15th c.). However, this type is absolutely rare.

[4] It is interesting noting that no mention of this bowl type appears in the research work of Dimartino (2011) mostly related to the ceramic assemblages from the citadel KK-1 (7th–12th centuries).

Table 2
Glazed wares from KK-7. The percentage of glazed wares are calculated within each assemblage. Assemblages considered include both diagnostic and rejected sherds.

SU	% GLAZED	GSGR	GMONO	GCARV	MONO	UP	STONEPASTE
1100	6.8	45	14	2	7 cless, 1black, 1 brsgr, 1 ymono, 1 tmono	1 earlier, 14	3 up
1101	1.90		3			2	
1104	5.06	4	4				
1105	3.47	7	7	2	2 tmono	2	
1106	6.66	2					
1110	16.66	2				1	
1116	2.5		1				
1117	1.25	1					
1118	3.73	2	2			1	
1120	1.64					1 earlier	
1123	13.64		2				1 up
1126	11.11					1	
1134	3.27	1	1		1 YG		
1139	16.66	1					
1141	12.5	1				2	
1142	3.12	7	6		1 top, 1 YG	1	
1154	6.66	1	2				
1168	1.89	1					
1144	31.25	5					
1172	40		2				
1174	16.66					1	
1186	30.77	1	2	1			
1191	50	2					
1208	11.11				1 tcarv		
1211	2.56	1					
1212	5.5	2		1			
1216	1.4	1		1			
1223	25				1 tmono		
1503	8.11	81	19	11	3 cless, 3 tmono, 1tsgr, 1 tcarv, 1 brsgr	7, 3 earlier	2 up
1504	22.5	13			2 tmono, 1 cless	2	
1506	5.36	1	3		1 TG	1 earlier	
1517	8.33	1					
1519	3.45				1 cless		
1522	25	6					
1524	5.4	18	2	5	2 tmono	1	
1535	34.48	5	3	1	1 ymono		
1537	12.5	1		1			
1507	20	2					
1509	2.05	11	1	2			
1510	100		1				
1513	1	1	1				
1520	21.43	4	1			1	
1533	10.53	1	1				
1546	12.5	1					
1548	4.55						1 up
1558	8.11	3					
1566	20	1		1			

Table 3
Glazed wares from KK-6. The percentage of glazed wares are calculated within each assemblage. The assemblages considered include both diagnostic and rejected sherds.

SU	% GLAZED	GSGR	GMONO	MONO	UP	STONEPASTE
1001	0.9	1				
1014	3.9	1			1	
1075	50		1			
1080	2.8	1	1	1 GT		1 up
1303	3.3	2		1 GY		
1308	16.6	1				
1315	100	1				
1316	66.6		1		1	
1363	25	1				
1438	37.5	2	1			
1462	3.2	3				

Table 4
Glazed wares from KK-3 (soundings NEW and NNW). The percentage of glazed wares are calculated within each assemblage. The assemblages considered include both diagnostic and rejected sherds.

SU	% GLAZED	G SGR	GMONO	GCARV	MONO	UP	STONEPASTE
101	2.3				1 alt	1	
103	43.7	2	1	1		3	
110	33.3	2					
112	6.8	2	3				
113	14.3				1 alt		
114	4.4	2	4			1	
115	25.7	5	1		1 tmono		1 up
118	22.2		2				
119	5						1tmono
121	26.5	8	2		1 cless, 1 CT		1tmono
122	9	2	1				
124	25	2					
125	1.4				1tmono		
126	26.3	2	1		1 CT		1 up
127	9.5	2					
128	50	1	1				
129	15	2	1				
130	100	1					
133	7.7	1					
134	14.3				1cless		
501	7.1		1		1 CT		
502	7.1	1					
504	3.7	1					

6.1.2. Basins

Another unglazed production specific to this period consists of basins made of medium-coarse fabrics (2–3). Judging from their quite fine finishing, they seem to have functioned also as tableware, rather than being used only for food preparation. The morphological type is standardised, with slight variations. The typical form is a basin with a conical profile, more rarely hemispherical, and a thickened rim projecting outwards; in most cases, the rim has a rectangular section (Fig. 9/c), it is triangular in a few specimens (Fig. 9/a-b). Similar items were found at Balkh (Siméon and Rasouli, 2026: pls 24.4, 28.2, 31.8–9) and in the Herat province (Franke and Urban, 2025: 238–239 nos 5–6 and 608–609 no. 14 dated 14th–16th c.; for fig. 9/C, cf. 696–700 no. 30 and 745–748 nos 33, 35 dated 11th–13th c.). Complete items show a thick flat base (Fig. 9/d-e), well comparable with items from Hasanlu (Danti, 2004: fig. 27/1) and Balkh (Siméon and Rasouli, 2026: pl. 28.1). This type shows similarities with the monochrome glazed items (§ 7.1), thus supporting the chronological attribution. A good number of basins are plain, but many are characterised by a red slip or wash (much thinner than the slip) that covers totally the inner surface and completely or partially the outer one (Fig. 9/d). In a very few cases, the slip turns dark brown/black. Rarely, the vessels show a comb-incised decoration comprising wavy and horizontal lines (Fig. 9/e).

The chronology of the basins from Kafir Kala seems confirmed by those of the 13th–15th centuries in Kazakhstan, featuring the same form and coating (VV.AA., 2011: 26, 61, also labelled *tagoras*). Morphological similarities have also traced with basins from Afrasiab (Sokolovskaia, 2015: comparisons especially with fig. C/1, see pl. 25 p. 179, pl. 38 p. 195, pl. 45 p. 203, pl. 46 p. 204, pl. 60 p. 228, pl. 49 p. 211, pl. 47 p. 206; dated to the Islamic period until the 12th century) and those recently recovered from Kok Saray. Comparable red slipped basins were also found at Vardanzeh/Bukhara (West Sogdian Archaeological Expedition 2011) and in Khorezm (esp. for fig. 9/d, e: cf. Vakturskaja, 1959: figs. 19/5, 25/3 and 36/1–3, 8, 32, dated 12th/13th–14th c.).

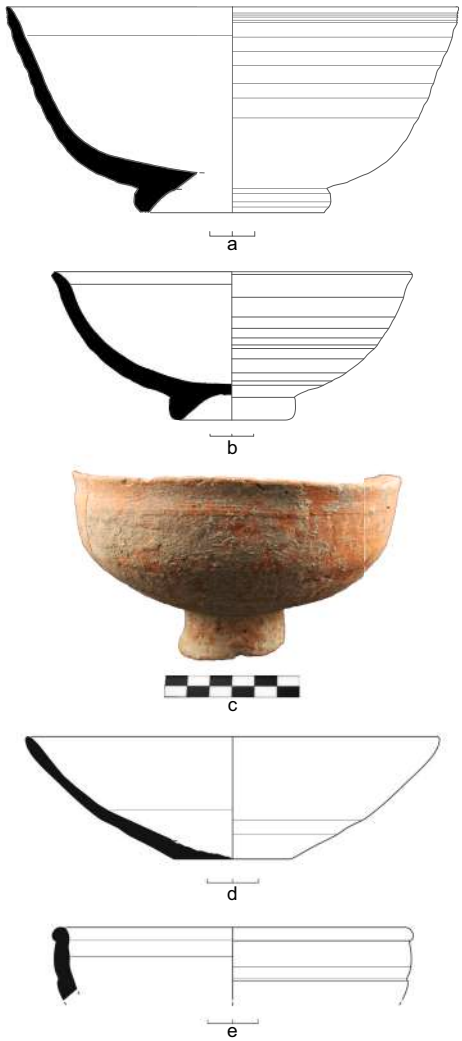


Fig. 8. Unglazed bowls. Inv.nos: a) KK-71168/1; b) KK-71100/108; c) KK-71117/1–1142/5 with red slip; d) KK-71176/2; e) KK-71636/4 (drawings A. Fusaro; photo O. Patone, © UIAP 2022–2024).

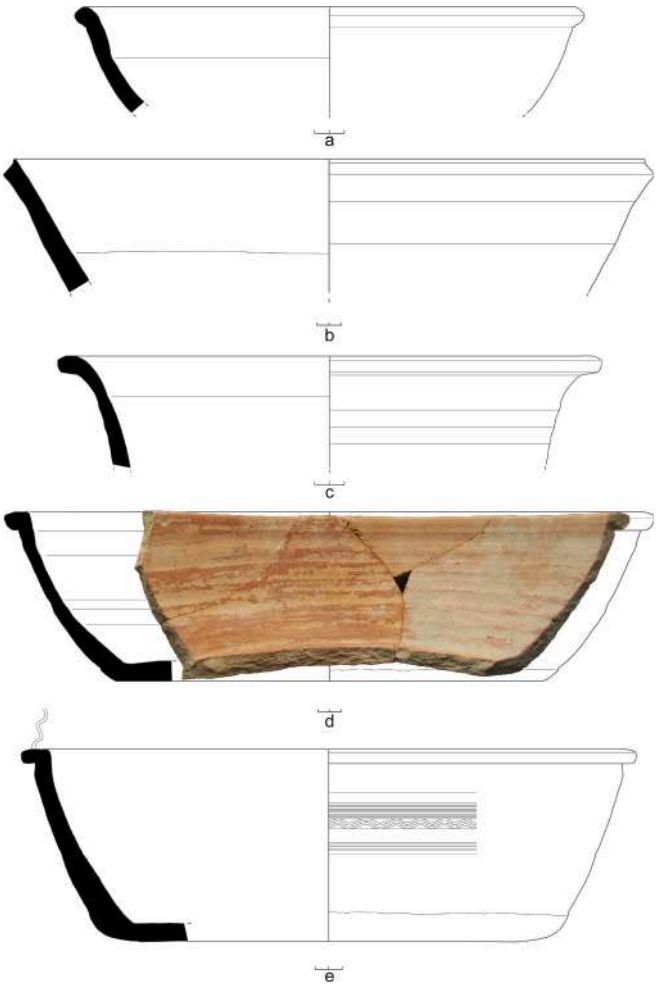


Fig. 9. Unglazed basins. Inv.nos: a) KK-61014/6; b) KK-71503/22; c) KK-3114/7; d) KK-71105/17 with red slip; e) KK-71126/3 with comb-incised decoration (drawings A. Fusaro; photo O. Patone, © UIAP 2022–2024).

6.1.3. Jugs

Jugs, produced at Kafir Kala since at least the 7th century, are still widespread at the site in the Ilkhanid-Timurid period. The specimens recovered in KK-3, KK-6, and KK-7 share several common features with earlier productions, concerning both morphology and decorations, thus suggesting continuity in their manufacture.

Almost all the jugs recovered show a cylindrical neck, but some are characterised by a flaring upper part of the neck. The most frequent rim type is thickened, rounded, projecting outwards (Fig. 10/a; cf. Danti, 2004: fig. 27/3 dated 13th–14th c. from Hasanlu); the majority features a triangular-sectioned rim (Fig. 10/b; cf. Vakturskaja, 1959: fig. 36/21, 28 from Khorezm). This rim seems typical of the pottery of the period in Kazakhstan (VV.AA., 2011: 26), it is common in Afrasiab (Sokolovskaia, 2015: dated 12th–13th c.) and later in Balkh (Siméon and Rasouli, 2026: pl. 29.2, 15th–16th c. onwards).

The variant with triangular-sectioned rim and flaring neck (Fig. 10/c) is well comparable with items from Bukhara (Puschnigg and Bruno, 2024: 198, R038 attested until 13th–14th c.) and Herat city and province (Franke and Urban, 2017: pl. 30/6–7, pl. 47/3 dated 10th–13th c.; pl. 52/2 and 52/4 dated 13th–17th c.; Franke and Urban, 2025: 505–507 no. 5 dated 13th–14th c.?). There is also a thinner variant (Fig. 10/d) showing a thickened, elongated rim with rectangular profile (cf. Danti, 2004: fig. 27/4 dated 13th–14th c. from Hasanlu).

The jugs have an ovoid body with a flat base. Disc bases are also common; this morphological type is associated with materials from Kok Saray, jugs from Kazakhstan (VV.AA., 2011: 60 dated 13th–15th c.), and jars/jugs from Herat (Franke and Urban, 2017: pls 76/2 and 84/5 dated 13th–18th c.).

The jugs are handled, featuring one vertical (mainly strap) handle. A few have a short cylindrical closed spout (Fig. 10/e); spouted jugs also existed in Kazakhstan for the same period (VV.AA., 2011: 61) and in Balkh (Siméon and Rasouli, 2026: pl. 24.1).

Some specimens show comb-incised lines (sometimes many dense fine lines) on the body, carvings or incisions (frequently there is a wavy line), and red or brown/black painting. Decoration can be combined (Fig. 10/f). In almost all cases, the painted decoration consists of irregular trickles; sometimes, it is clear that the painting was applied to draw a horizontal band, but the colour dripped. The same fashion for irregular painting and incisions had existed during the pre-Islamic period (5th–7th century), thus confirming the longevity of this tradition (§ 6.3). The presence of brown and red painting on jugs, as well as of comb straight and wavy incisions, has also been reported for items of the 13th–15th century in Kazakhstan (VV.AA., 2011: 26–27, 60). Incisions (small geometric patterns) and comb incisions are typical in the unglazed vessels of the Timurid period in Balkh (Gardin, 1957: 47, 97, 15th c.); comb incisions are also visible on unglazed jugs recovered at Hasanlu (Danti, 2004: 33, fig. 12/2,4 and fig. 18/2,3 dated 13th–14th c.), Kok Saray, and in Khorezm (Vakturskaja, 1959: figs. 21 and 36/21, dated 12th–14th c.).

Within this group, there are two very peculiar items. Inv.no. KK3

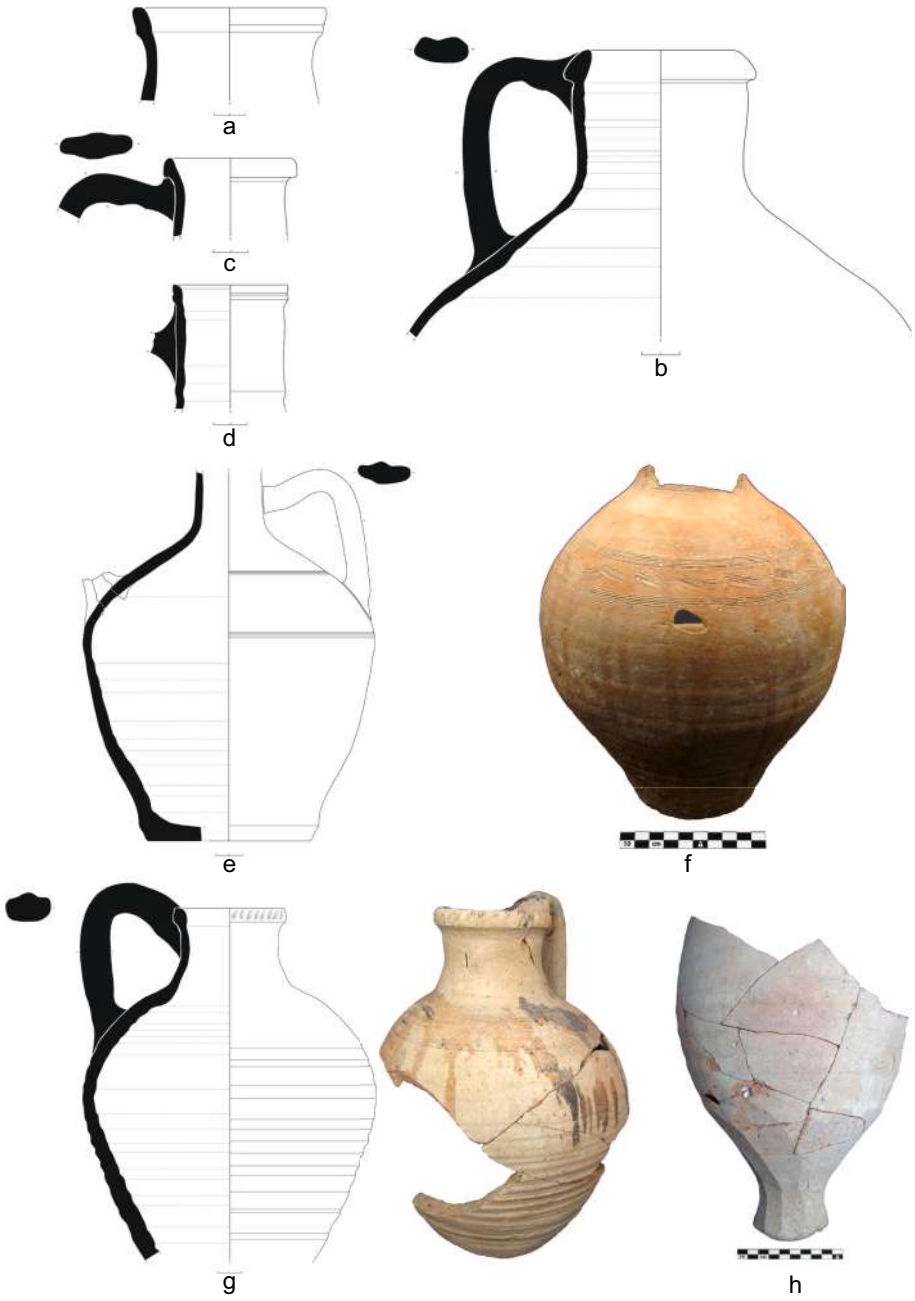


Fig. 10. Unglazed jugs. Inv.nos: a) KK-71101/4; b) KK-71503/19; c) KK-3127/2; d) KK-3133/1; e) KK-71503/27 with comb-incised decoration; f) KK-71176/1 with comb-incised decoration and red trickles; g) KK-3114/1 with impressions and red trickles; h) KK-3112/5 (drawings A. Fusaro; photos O. Patone, © UIAP 2022–2024).

114/1 is an ovoid jug with a cylindrical neck, a thickened square-sectioned rim with rounded edges, projecting outwards; the lower surface of the body is highly ribbed, and the base is missing (Fig. 10/g). Inv. no. KK3 112/5 is an ovoid jug with a very high cone-truncated base, which is hollow inside and very unevenly and roughly shaped; the lower surface of the body is faceted, probably obtained by sharply cutting the surface; neck and rim are missing (Fig. 10/h). Even if they are almost unique specimens within the *corpus* (only seven items are related to their forms), both can be considered typical of the chronological period under consideration because of their body and surface treatments: the paste is coarser and more porous, and surfaces are roughly finished, as observed in many tableware items from these contexts. The parallels traced between the jugs shown in fig. 10/g-h and items from Khorezm (Vakturskaja, 1959: figs. 21/1–2 and 22/7–8, respectively, dated 12th–14th c.) are particularly striking. The similarity between inv.no. 114/1 and jugs from Hasanlu (Danti, 2004: 33, fig. 18/6 dated 13th–14th c.) and Herat province (Franke and Urban, 2025: 554–55 no. 9, dated late 14th–16th c.?) could further confirm this hypothesis.

6.2. *Unglazed coarse wares*

6.2.1. *Storage jars*

Medium-sized jars and large storage jars (*khums*) have been identified. Fabric 3 is the most common, but fabric 21 has also recognised in a large number of storage vessels of the pottery *corpus* under consideration, and even in a few tableware vessels (Table 1). This ceramic paste is much more widespread in the pottery of the Ilkhanid-Timurid period than in the ceramics of the early Islamic period.

Typical medium-sized jars of the period are wheel-thrown with medium-high cylindrical neck and a thickened rectangular-sectioned

rim projecting outwards, showing a rounded inner profile. Some have vertical strap handles; in the majority of cases, there should have been two. Some show the same decoration as the jugs, i.e. comb incisions and red/brown trickles on neck and shoulder, frequently combined (Fig. 11/a-b). It is worth noting a similarity with jars from Hasanlu, in terms of form and decoration (Danti, 2004: 36 fig. 19/1 and fig. 27/2). This type of jars probably circulated also in Kazakhstan (VV.AA., 2011: 26, 60) and some similar vessels of an earlier period were also identified at Balkh (Siméon and Rasouli, 2026: pls 15.4 and 17.9, 11th–12th c.) and in the Herat province (Franke and Urban, 2025: 577 no. 5, 13th–14th c.).

A good number of large storage vessels (*khums*) were found in the contexts of the Ilkhanid-Timurid period. Their rim diameter ranges between 25 and 40 cm. The most widespread rim types within these contexts are: a simple upright rim, slightly thickened, with a flat top (Fig. 11/c); a thickened rim with a rounded profile (Fig. 11/d), also projecting outwards (Fig. 11/e). The associated base seems invariably flat. From a technological point of view, the analysis of the fragments collected suggests that the majority were shaped by combining wheel-throwing and coiling or slabbing; the rim of the largest vessels was shaped separately and added later to the upper part of the body (Fig. 11/e). The sherds associated with the types described above are mostly plain or with cream-coloured surfaces. We cannot exclude that applied clay strips with finger impressions, so common since the pre-Islamic period, were still used in the middle Islamic period, as possibly suggested by the findings at Kafir Kala and the presence of large jars with simple thickened rim and impressed cordon in the Herat province (Franke and Urban, 2025: 537–538 fig. 1184, dated late 13th–14th c.).

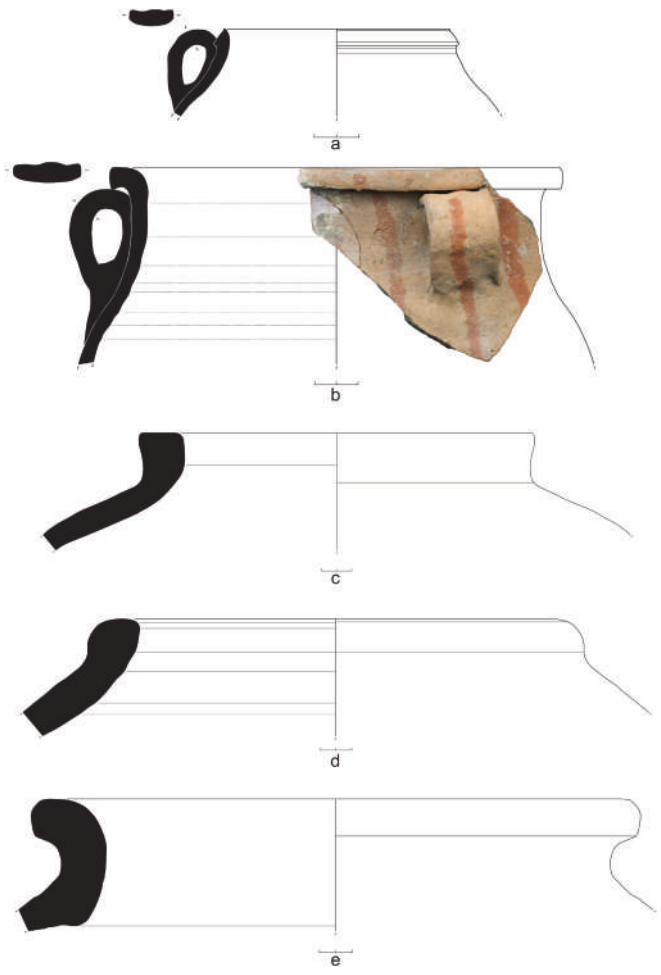


Fig. 11. Unglazed storage jars. Inv.nos: a) KK-71503/26; b) KK-71503/25 with comb-incised decoration and red trickles; c) KK-3125/4; d) KK-61001/5; e) KK-71101/3 (drawings A. Fusaro; photo O. Patone, © UIAP 2022–2024).

Generally speaking, the types described are comparable to those of higher-quality and finely decorated from Herat, dated to the 11th–14th centuries (Franke and Urban, 2017: 69, figs. 75d, 76b, 77c, and pl. 33/1). Fig. 11/c is well comparable with items from Herat dated to the 13th–17th centuries, decorated with an applied strip with finger impressions (Franke and Urban, 2017: pl. 53/1). The types related to Figs. 11/d and 11/e show similarities with items from Herat city and province (Franke and Urban, 2017: pl. 63/2 dated 13th–17th c.; Franke and Urban, 2025: 397–398 no. 3b and 482 no. 3 dated 13th/14th–16th c.) and jars from Ramitan/Bukhara (Puschnigg and Bruno, 2024: 209–210, R062.2-R062.3 attributed to 5th–6th and 9th–14th c.), respectively. However, these rims are so simple that they prove to be long-lasting.

6.2.2. *Cooking vessels*

Cooking vessels of the period are made of two ceramic pastes. Fabric 1 is the most widespread. Its continuity through the stratigraphy and its presence in the productions related to the pottery kilns of the site suggest a continuity also in the manufacture, if not strictly in Kafir Kala, at least in the Samarkand area. Indeed, to a macroscopic observation, a very similar fabric is also well represented among the cooking vessels of Afrasiab in the Islamic period.

Typical of the period considered is fabric 1 grey. Except for the colour of the body, ranging from very dark brown to grey to black, mineral temper and compactness are the same as those of fabric 1. The colour difference was intentionally obtained during the firing process, with a reducing atmosphere; fabric 1 is red to reddish-brown (Table 1). There is also a good number of cooking vessels dated to the Islamic period with grey paste at Afrasiab.

The ware exclusively comprises wheel-made pots; the body could have been sometimes shaped with the help of a former. Vessels related to fabric 1 grey represent a quite homogeneous production, with little morphological variation in the rim shape. The pots have a globular body, convex base, thickened rim projecting outwards, that could be rounded-, triangular- or square-sectioned; they are almost all provided with two or more ledge handles, usually bearing a horizontal row of finger impressions. Some items also show incised or carved horizontal lines on the shoulder (Fig. 12/a-b). This type finds similarities, without any strict comparisons, with items from Afrasiab dated to the 12th–13th centuries (Sokolovskaia, 2015: pl. 50 p. 212, pl. 46 p. 204, pl. 27 p. 183). Grey cooking globular pots with ledge handles also come from recent excavations at Kok Saray.

A few vessels differ from this highly standardised type. There exist a very few small-sized pots with carinated bodies showing a large cone-truncated or cylindrical hollow handle on the shoulder (Fig. 12/c); the rim is always lacking (cf. Pozzi, 2012: pl. 28/7 carinated grey pot dated 12th-early 13th c. from Vardanzeh/Bukhara).

Besides this well-defined group, there are other cooking pots with oxidising-fired bodies; however, identifying those clearly related to the period considered is difficult due to the strong continuity between the early and middle Islamic periods. According to the frequency within the assemblages, the type with a thickened triangular-sectioned rim projecting outwards seems the most widespread (Fig. 12/e-f); they started to be produced in the earlier Islamic period. The item inv.no. KK7 1100/106 shows a cone-truncated spout (Fig. 12/d). As for the latter, the morphological affinity between this pot (see also fig. 12/c) and a green glazed spouted pot from Herat province (Franke and Urban, 2025: 745–748 no. 11 dated 12th–13th c.) could further support its chronological attribution.

Only a few cooking pots are decorated: among them, the most common decoration consists of carvings or incisions on the shoulder, in the form of simple horizontal lines or rows of horizontal wavy segments (Fig. 12/e).

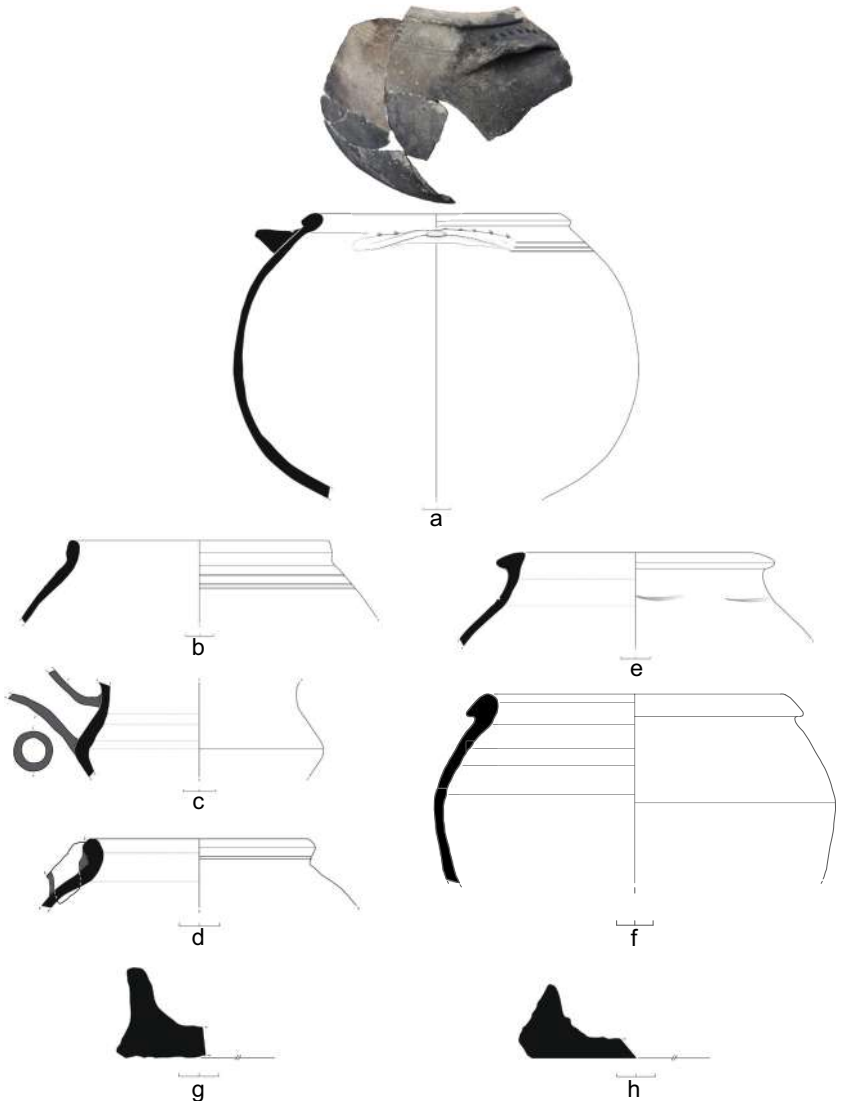


Fig. 12. Unglazed cooking pots and handmade trays/pans. Inv.nos: a) KK-71202/1 with incisions and impressed notches; b) KK-71120/4 with incisions; c) KK-71204/1; d) KK-71100/106; e) KK-71105/12 with carved notches; f) KK-71211/1; g) KK-71509/1; h) KK-71607/2 (drawings A. Fusaro; photo O. Patone, © UIAP 2022–2024).

6.2.3. Large trays/pans

The coarse group related to the preparation and cooking of food also comprises handmade large trays/pans. They were provided with a straight vertical and very short body wall, a simple rim, and a flat base. Many large mineral inclusions emerge on both surfaces. The very coarse fabric (fabric 9), the very low hardness, also due to a low-temperature firing, and the hand shaping suggest that they are household production. These vessels were found throughout the stratigraphy of KK-7, suggesting they are a particularly long-lasting production. The morphological type common in the layers related to the period considered features a simple rectangular-sectioned rim and flat top (Fig. 12/g); there are also some with a cone-truncated wall profile (Fig. 12/h).

6.3. Continuity and revival in the unglazed pottery production

Some considerations on surface treatments and decorations peculiar to the pottery *corpus* of Kafir Kala are proposed herein. Indeed, the identification of specific features related to the vessels forms of the 13th–15th centuries, combined with the classification of the pottery in the KK-7 uninterrupted stratigraphy (4th–15th centuries), allow for an analysis of the continuity and revival of certain traditions.

A common decoration of the pre-Islamic period is large red (the most widespread colour) or brown-to-black trickles on the surface. Trickles were spread on many different vessels, from fine pots and jars to large storage jars (*khum*). We can suggest their use between the 4th and the 6th century CE. In a first phase, they were used alone, while a combination of painted and simple incised decoration (usually consisting of alternating wavy and horizontal lines) spread mostly in the 5th–6th century; it was probably still present in the 7th–8th century. Trickles seem to disappear in the very early Islamic period, but their revival has been recognised in the middle Islamic period, when the trickles were almost exclusively used on jugs, and only very sparsely on jars.[5] This decoration was much less successful and spread in this latest phase.

The comb-incised decoration was used in the pottery *corpus* of Kafir Kala since the 6th/7th century; unlike the Islamic period, the incised lines are few and wide, suggesting the use of a comb with only 2–3 large teeth. Later, the decoration becomes much denser, with finer, more abundant lines, suggesting the use of a comb bearing many thin teeth, up

[5] A revival of the use of trickles has been identified also in Afrasiab for the 12th–13th century (Sokoloskaia 2015: pl. 100 p. 271, pl. 105 p. 276).

to 7–10. This decoration is particularly spread during the early Islamic period (until the 12th century); however, it continues in the middle Islamic period, when it was also combined with trickles; sometimes the lines are fewer and slightly larger than before. Decorative motifs remain simple throughout the centuries, with wavy, festoon, or straight lines.

The red slip is a widespread coating among the fine tableware from Kafir Kala during the pre-Islamic period, especially until the 4th–5th century CE. After a long disappearance, we have identified a later revival of this coating in the 13th–15th centuries. In this period, the slip was applied to unglazed bowls, whose forms clearly imitate more expensive, high-quality coeval glazed vessels, and large basins, possibly imitating glazed basins. As for the basins, red slip is sometimes burnished.[6] Therefore, the author tentatively suggests that the red slip was applied to dignify poor vessels, replacing the glaze.

Some vessel forms presented herein are extremely simple and lack distinctive features, both in shape and in surface treatment or decoration, and they appear to have remained unchanged over a long period, as also suggested by comparative analyses with other assemblages, making their chronological attribution more problematic.

7. Glazed pottery

Glazed wares (Table 5), in particular the underglaze painted vessels, were fundamental to propose a reliable chronological framework for the contexts considered. The comparative analysis with coeval excavated assemblages and museum items suggests a chronology of the 13th–15th century, corresponding to the Ilkhanid and the early Timurid period.

The great majority of the glazed vessels are earthenware, with only 12 high-quality specimens made of a stonepaste body (2.3% of the glazed class).

A good variety of fabrics has been identified (Table 1). Fine reddish-brownish fabric 16 is by far the most represented in the glazed class. Fabrics 17 and 18 are equally represented. While fabrics 16, 17, and 18 have also been identified in glazed vessels of the early Islamic period, fabrics 22 and 23 are typical of the middle Islamic period. Buff fabrics 17 and 22 are quite common; their presence fits with the Uzbek glazed productions of the 13th–14th century, for which "a yellowish tint in the clay of the majority of items is a characteristic feature" (VV.AA., 2011: 191).

Regardless of the specific wares, all earthenwares are coated with white slip and transparent glaze (except one). They can be broadly divided into two large groups: the monochrome wares, including those with *sgraffiato* or incised/carved decoration, and the underglaze painted wares. The wares are listed below according to their frequency in the pottery *corpus* (from highest to lowest), with detailed quantities available in Tables 2–3-4[7]:

- green monochrome *sgraffiato* ware (label: gsgr)
- green monochrome ware (label: gmono)
- underglaze painted ware (label: up)
- green monochrome ware with incised/carved decoration (label: gcarv)
- turquoise monochrome ware (label: tmono), in one case with opaque glaze (label: top)
- turquoise monochrome ware with incised/carved (label: tcarv) or *sgraffiato* (label: tsgr) decoration
- two-tone glazed ware: green/turquoise (label: GT), yellow/green (label: YG), and colourless/turquoise (label: CT)
- brown/black monochrome ware (label: brmono), also with *sgraffiato* decoration (label: brsgr)
- yellow monochrome ware (label: ymono).

Table 5
Glazed wares of the pottery corpus of Kafir Kala dated to the 13th–15th century.

Groups	Wares	Subwares	Labels	Motifs
Monochrome earthenware	GREEN	–	GMONO	
		with *sgraffiato* decoration	GSGR	Sspirals
		with incised/carved decoration	GCARV	Wavy lines
	TURQUOISE	–	TMONO	–
		with *sgraffiato* decoration	TSGR	Squiggles or curved segments
		with incised/carved decoration	TCARV	Straight and wavy lines
		opaque glaze	TOP	–
	YELLOW	–	YMONO	–
	BROWN/BLACK	–	BRMONO	–
		with *sgraffiato* decoration	BRSGR	Parallel lines
	TWO-TONE	green/turquoise	GT	–
		yellow/green	YG	–
		colourless/turquoise	CT	–
Monochrome stonepaste	TURQUOISE	–	TMONO	–
Underglaze painted earthenware	COLOURLESS GLAZE	turquoise, blue, black painting	UP	Grid pattern, also with dots or simple crosses Central rosette Patterns with (three- to multiple-) pointed leaves Complex patterns with geometric and vegetal-floral elements Epigraphic band Crosshatched band Ext: wavy motifs, crossed arches, alternating vertical segments, spirals, squiggles
	TURQUOISE GLAZE	black painting	UP	Patterns with pointed leaves on dotted ground Vegetal stems on dotted ground
		blue painting	UP	Floral pattern and squiggles
Underglaze painted stonepaste	COLOURLESS GLAZE	turquoise, blue, black painting	UP	Central rosette
	TURQUOISE GLAZE	black painting	UP	Leaves/wavy segments

7.1. Monochrome wares

Within the monochrome wares, the green ones are the most widespread. Specimens are covered with a white slip and a transparent green glaze. The *sgraffiato* ware is the better represented of the glazed class, characterised by a decoration incised in the slip, commonly known as *sgraffiato*. The morphological type recognised is the hemispherical bowl with a simple or everted rim, and a ring base with a central umbo in the lower surface (Fig. 13/b-c, cf. Khorezm, Vakturskaja, 1959: fig. 31/4; cf.

[6] A reappearance of the red slip, also burnished, coating unglazed open vessels was traced by Vakturskaja (1959: 327) in the Khorezm productions for the same period.

[7] Labels are also valid for the stonepaste wares. The tables also report items with a colourless (cless) or altered glaze (alt) that are not related to specific wares.

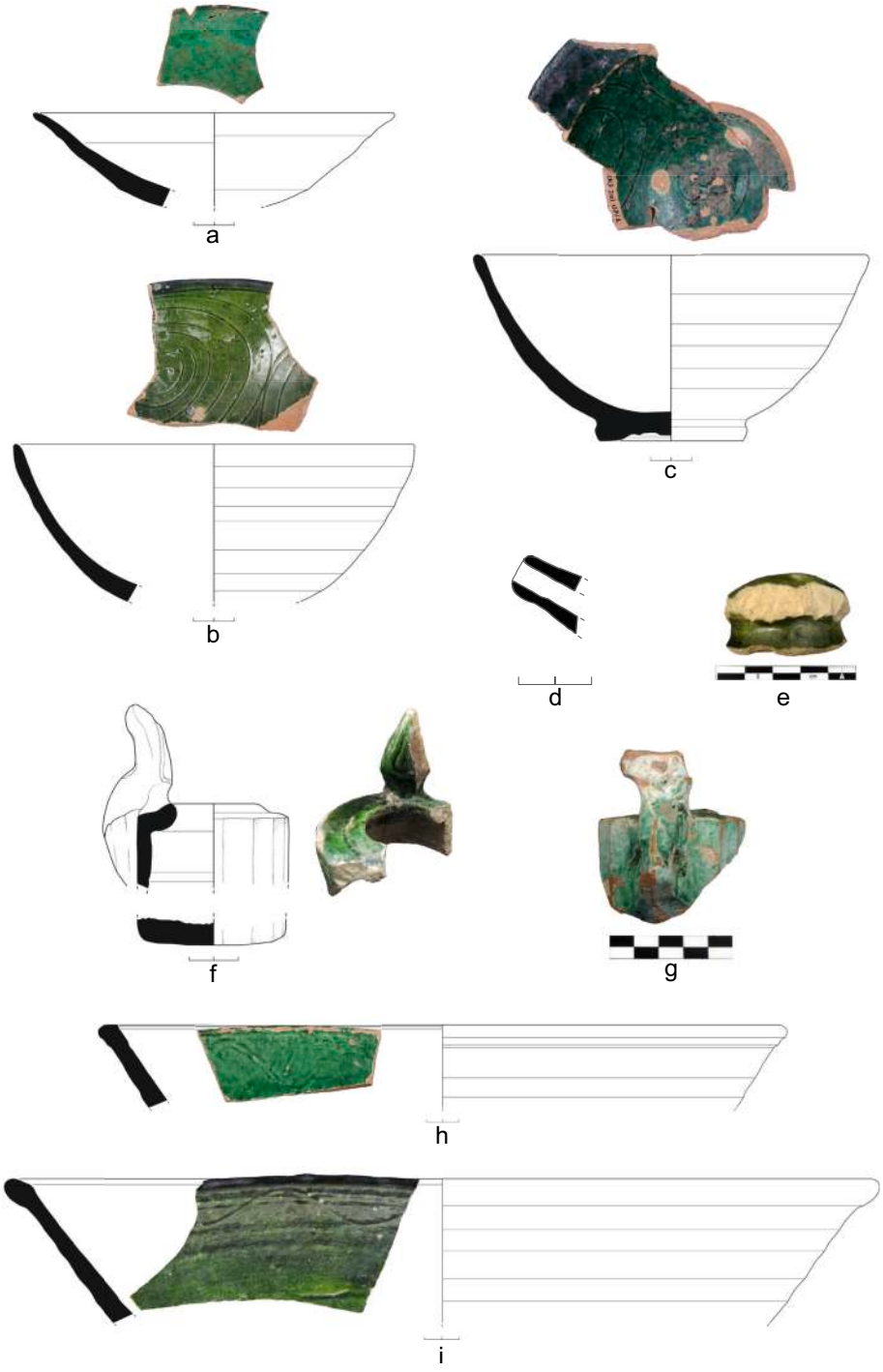


Fig. 13. Green glazed wares. Inv.nos: a) KK-71100/2 green monochrome ware; b) KK-61014/1 *sgraffiato* green glazed ware; c) KK-3127/1 *sgraffiato* green glazed ware with tripod marks; d) KK-71503/9 green monochrome ware; e) KK-71134/3 green monochrome ware with cut and smoothened surfaces (reused); f) KK-3114/2 green monochrome ware; g) KK-71100/105 green monochrome ware; h) KK-71186/1 carved green glazed ware; i) KK-71105/6 carved green glazed ware (drawings A. Fusaro; photos O. Patone, © UIAP 2022–2024).

Herat province, Franke and Urban, 2025: 404–405 no. 1, 608–609 no. 5, 621–627 nos 9–13, esp. no. 9 with *sgraffiato* pattern). The only decorative pattern identified comprises spiral lines, juxtaposing or overlapping. Both the morphology and the decoration make this ware very homogeneous and well recognisable.

The green monochrome ware is the second most represented one. The majority of the vessels are bowls, with two types identified: the most common is a shallow conical bowl and a conical bowl with a simple or slightly everted rim (Fig. 13/a, cf. Balkh, Siméon and Rasouli, 2026: pl. 32.1; cf. Herat province, Franke and Urban, 2025: 600–602 no. 4, see also 558–560 no. 2, 252–255 no. 1 and 608–609 no. 4; cf. larger vessels from Hasanlu, Dante 2004: 58, pl. A/6), followed by a hemispherical bowl with a simple rim. A ring base with an umbo is associated. The finding of three vertical strap handles and a short tubular closed spout (Fig. 13/d) suggests the presence of closed vessels. The green monochrome ware also comprises a convex hemispherical lid with a central knob (Fig. 13/e) and lamps. The latter feature a closed reservoir, usually a cylindrical faceted body, with a very narrow circular upper mouth; the

comparisons suggest they had a long spout (Fig. 13/f). In a few cases, a solid conical handle is preserved (cf. Khorezm, Vakturskaja, 1959: fig. 28/3–7 dated 12th c.; cf. also Balkh, Gardin, 1957: pl. XXIII/5 dated 15th c.); in one case, there is a pierced lug on the body (Fig. 13/g; cf. Franke and Urban, 2017: pl. 205.6 from Herat's Timurid gateway; cf. Pozzi et al., 2017: fig. 27 from Vardanzeh/Bukhara). Lamps' fragments total 8.

The green monochrome and the green *sgraffiato* wares shared many analogies. These wares are largely spread also in the early Islamic period (9th–12th century); however, the vessels found in the later contexts under study can be distinguished from the earlier productions for some features: the recurrent shape of the ring base, with a central umbo in the lower surface, usually not very carefully potted; the presence of a few specimens whose glaze show iridescences and a whitish patina, suggesting a low-lead composition of the glaze with a higher alkali content; the spirals pattern.

The extension of the chronology of the green monochrome ware and particularly its *sgraffiato* variant at least until the 13th–14th century is clearly supported by the findings and the stratigraphy of Kafir Kala, and they are aligned with data from Hasanlu (Danti, 2004: 36–42, 61), discoveries in Central Asia (VV.AA., 2011: 235–236; Kdirniazob, 2017: 806, figs. 18–20, 13th–14th c.; Vakturskaja, 1959: 319, 12th–14th c.) and Herat province (Franke and Urban, 2025: 189–190, 252–255, 404–405, 558–560, 593–595, 600–602, 608–609, 621–627). Strict morphological comparisons are with materials from Herat, especially the hemispherical bowls with simple or well-everted rim (apparently without spiral motifs. Franke and Urban, 2017: 36, figs. 40.f-g-j-k, fig. 41.a, but no precise dating is proposed; however, the green ware is common in a phase dated to 13th–15th c.). As for the decoration, the comparisons with green vessels with incised spirals from the Sistan region presented among the "Tamerlane's tableware" (Golombek et al., 1996: pls 2 and 13) definitely substantiate the chronological attribution of the vessels from Kafir Kala.

As for the specific type of green glazed lamps (*chirags*), the very scanty quantity of items recovered at Kafir Kala makes a precise attribution difficult. According to findings from other sites, this type was already spread in Central Asia since the 11th–12th century. However, the total absence of these items in the citadel, their recovery in the layers related to the period considered, as well as some comparisons with other Central Asian sites (in particular Mizdakhkan, Kdirniazob, 2017: 808, fig. 22), lead to attribute them at least to the 13th century (cf. also VV. AA., 2011: 52 and 54 from Taraz, Kazakhstan, dated 12th–13th c.; cf. VV.AA., 2011: 171 from Osh, Ferghana, Kyrgyzstan dated 12th-early 13th c.).

The third ware of the monochrome green group is characterised by conical basins with thickened rounded rims projecting outwards, sometimes flattened, and flat bases (Fig. 13/h-i). Many vessels show a simple decoration incised or carved under the slip just below the rim; it consists of a wavy horizontal line. They could be interpreted as a modest imitation of the Longquan celadon dishes from China (14th–15th century) (Teece, 2023). It is worth noting that no Chinese imports have been found at Kafir Kala. Strong comparisons for the glazed basins are traced with Herat city and province, both for shape and decoration (Franke and Urban, 2017: 36, figs. 40.e, h; Franke and Urban, 2025: 170–174 nos 4–5, 252–255 no. 2, 394–395 no. 3, 558–560 nos 4–5, 592–593 no. 2, 744 no. 1. Altogether the type is dated 13th–15th c.), and secondary with the Khorezm region (Vakturskaja, 1959: fig. 31/9 dated 13th–14th c. See also Qal'eh Sang, Amirhajloo and Sedighian, 2020: fig. 6/5).



Fig. 14. Monochrome glazed wares. a) inv.no. KK-71503/7 *sgraffiato* turquoise glazed ware; b) *sgraffiato* brown glazed ware from KK-7, SU 1503; c) inv.no. KK-61080/1 green/turquoise glazed ware; d) inv.no. KK-71134/1 yellow/green glazed ware (photos A. Fusaro, O. Patone, © UIAP 2022–2024).

The monochrome glazed group also comprises four much less represented sub-groups. 14 items with a white slip and transparent turquoise glaze have been recovered. One flat base, probably belonging to a large basin, and the shoulder of a closed vessel have simple carved horizontal lines under the slip; especially for the basin, the production strongly recalls the green one. There is also a ring base with umbo featuring a *sgraffiato* decoration (Fig. 14/a). It seems clear that the turquoise glazed wares are strictly related to the green ones in terms of morphology and decorative technique. This hypothesis can also be confirmed by similarities identified between the green monochrome basins from Kafir Kala and the turquoise monochrome ones from Herat of the 13th–15th centuries (Franke and Urban, 2025: 558–560, 592–593) and from Balkh of the Timurid and Safavid periods (cf. Siméon and Rasouli, 2026: pls 24, 28, 32.8 and figs. 3–4). There is also a single fragment of a ring base covered with an opaque turquoise glaze without slip.

There are three small shapeless fragments with dark brown/purple transparent glaze, one also shows *sgraffiato* decoration (Fig. 14/b; cf. Danti, 2004: pl. H/8 from Takht-i Sulaiman and Dinkha Tepe).

The least represented glazed ware is the monochrome yellow, with two very small sherds. Yellow and brown glaze also occurred in Herat and Balkh, even if less common (Franke and Urban, 2017: 36, 38, fig. 43, widely dated from the 10th to the 20th century; Franke and Urban, 2025: 170–174, 183–185, 189–190, 608–609, 745–748 within assemblages dated 13th–15th c.[8]; Siméon and Rasouli, 2026: SU 83 at Bala Hissar, dated to the Timurid and Safavid periods).

Very interesting is the two-tone glazed sub-group, characterised by two different glazes covering the inner and the outer surfaces; the ware does not seem very common in Central Asia assemblages (a glazed jar possibly belonging to the yellow-green glazed ware is from Hasanlu, Dante 2004: 49, fig. 26.6). No complete forms remain; however, the less finished inner surface suggests that they were closed vessels. There are three chromatic variants: colourless/turquoise glaze (three sherds); green/turquoise glaze (two sherds, Fig. 14/c); yellow/green glaze (two sherds, Fig. 14/d). They are associated with quite coarse fabrics 17 and 23.

7.2. *Underglaze painted wares*

The underglaze painted ware almost exclusively comprises open vessels.

There are two main sub-groups: the largest characterised by a painting under a transparent colourless glaze, and a smaller one characterised by painted decoration under transparent turquoise glaze. The comparative analysis suggests that the chronology of the latter is limited to the 13th–14th centuries.

The first sub-group features a painted decoration in turquoise, blue, and black, variously combined. There are several morphological types: large conical dish with tesa rim (Fig. 15/a; cf. Crowe, 1996: fig. 226–2 dated 14th–15th); small bowls with a disc base with concave lower surface; hemispherical bowls, also with everted rim; conical bowl with simple or tapered rim; bowls with ring base with lower umbo or flaring feet (Fig. 15/b; cf. Crowe, 1996: fig. 226–1 dated 14th–15th). The conical bowl and the hemispherical bowl on a ring foot, often featuring a peculiar small cavity in the lower surface, are by far the most widespread morphological types. The hemispherical bowl characterised by an everted rim and the base type just described seems a widespread form for the underglaze painted vessels of the 13th–15th century in Uzbekistan (VV.AA., 2011: 191, see esp. pls XXXIII-XXXV; Mirzaakhmedov, 1992: 177, fig. 5; cf. also Smagulov, 1992: fig. 3). Only one closed vessel with a globular body and a ring base has been identified.

Comparisons with decorations and secondarily forms with higher-quality, usually stonepaste, vessels (esp. Golombek et al., 1996) show that the vessels recovered at Kafir Kala are lower-quality productions imitating luxury wares.

The decorative patterns are grouped as follows, indicating the comparisons with findings from other sites or collections.

There is the grid pattern, also with dots or simple crosses in between (Fig. 15/c. Cf. Mirzaakhmedov et al., 2019: fig. 6/1 dated 13th–14th c. from Vardanzeh; VV.AA., 2011: 28 no. 8 dated 13th–14th c. from Otrar, but also pl. XXXVI from Kyrgyzstan; Smagulov, 1992: fig. 2/10 dated 14th–15th c. from Eski-Turkestan; Amirhajloo and Sedighian, 2020: fig. 7/7 dated 13th–15th from Qal'eh Sang; cf. also Gardin, 1957: pl. XX/6a dated 15th c. from Balkh. See Golombek et al., 1996: 232, pl. 78, and fig. 4.1 "Diamond Diaper motifs").

Central rosette has been found in earthenware vessels and a stonepaste item (Fig. 15/i) (cf. Pugachenkova, 1950: figs. 5 and 13 dated 15th c. from Samarkand; Vakturskaja, 1959: fig. 30 dated 14th c. from Khorezm; Smagulov, 1992: fig. 3/3 dated 14th–15th c. from Eski-Turkestan; Franke and Urban, 2017: fig. 51.e,g dated 15th–16th c. from Herat and Gardin, 1957: pl. XX/2, 3b dated 15th c. from Balkh).

Patterns with pointed leaves recall the more sophisticated lanceolate leaves found in more luxurious stonepaste examples (cf. Golombek et al., 1996: "floral-ornament motifs" figs. 4.5–4.10). Within the Kafir Kala *corpus*, we recognise two variants:

- three-pointed leaves (Fig. 15/d; cf. Amirhajloo and Sedighian, 2020: fig. 7/2 dated 13th–15th c. from Qal'eh Sang);
- multiple-pointed leaves on branches (Fig. 15/b; cf. Mirzaakhmedov, 1992: fig. 2/2 dated 15th–16th c. from Tashkent; Smagulov, 1992: fig. 2/6 dated 14th–15th c. from Eski-Turkestan; Franke and Urban, 2017: pl. 213/4 dated 15th–16th c. from Herat, also for the low carination; see also Gardin, 1957: pl. XX/4c,e dated 15th c. from Balkh).

Rows of wave motifs and crossed arches on the outer surface have been recognised (cf. Gardin, 1957: pl. XIX/1a dated 15th c. from Balkh, and Smagulov, 1992: fig. 2/2 dated 14th–15th c. from Eski-Turkestan).

A crosshatched band along the rim is quite common (cf. Gardin, 1957: pl. XIX/5d and pl. XX/6b dated 15th c. from Balkh; also Reitlinger, 1938: fig. 31 dated 15th c.).

Alternating vertical segments and spirals or squiggles are frequently found in the outer surface of these vessels (Golombek et al., 1996: 187, and pl. 25b, fig. 4.2 "lotus-panel motifs"; cf. also Reitlinger, 1938: fig. 31 dated 15th c. and Mirzaakhmedov, 1992: fig. 3 dated 15th–16th c. from Tashkent; the combination of the inner grid pattern and the outer squiggles has been traced in some vessels from Eski-Turkestan, Smagulov, 1992: fig. 6 dated 14th–15th c.).

Complex patterns with geometric and vegetal-floral elements are not frequent:

- polylobed crossed arches and stylised vegetal motifs (Fig. 15/a). This vessel more closely fits with higher-quality productions (cf. Golombek et al., 1996: form W fig. 5.2 for the morphology, and fig. 4.11 "Yuan cloud collar motifs" for general pattern; cf. also VV.AA., 2011: 96, 117, pl. XXXVII from Kyrgyzstan, and Vakturskaja, 1959: fig. 32/1 dated 14th c. from Khorezm; as for the shape, see Smagulov, 1992: fig. 5/3 dated 14th–15th c. from Eski-Turkestan and VV.AA., 2011: 208 dated 14th c. from Azerbaijan; see also Mirzaakhmedov, 2024: 267);
- grid pattern filled with squiggles and rosettes (cf. Golombek et al., 1996: 179, pl. 15).

A unique item with an epigraphic band is remarkable (Fig. 15/e) and recalls the so-called Sultanabad pottery (see Watson 2020: cat.no. 169 dated 13th–14th c. from Kashan; cf. also Neyestani et al., 2012: 97–98, fig. 5).

The sub-group characterised by black painting under transparent

[8] It is surprising that, despite the abundance of green and turquoise glazed vessels in the assemblages found in several sites in the Herat province, the authors do not consider these wares, with specific morphological and decorative features, as possible chronological markers.



Fig. 15. Underglaze painted wares. Earthenware vessels, inv.nos: a) KK-71100/102; b) KK-71316/1; c) KK-71100/101; d) KK7 1503/5; e) fragments from KK-7, SUs 1100, 1520, 1522; f) KK-71126/1; g) KK-71105/8. Stonepaste items, inv.nos: h) KK-3126/1 (interior-exterior); i) KK-71100/103 (photos A. Fusaro, O. Patone, © UIAP 2022–2024).

turquoise glaze is represented by only three items from KK-7, of which two have recognisable forms. A bowl featuring a ring base with lower umbo (Fig. 15/f); main elements of its central pattern are stylised three-pointed leaves, already mentioned for the previous sub-group (Fig. 15/d) (cf. identical pattern on a vessel from Otrar, VV.AA., 2011: 28, no. 3 dated 13th–14th c., and p. 168). Fig. 15/f is similar to an item from Balkh (Gardin, 1957: pl. XXI/6) and shares chromatic palette and the dotted background with an item from Qal'eh Sang (Amirhajloo and Sedighian, 2020: 177, fig. 7/10 dated 12th–13th c.). The other item is a hemispherical open vessel, with a tesa rim and a flaring ring base, interpreted as a lamp for the groove on tesa (Fig. 15/g).

The 12 stonepaste sherds comprise three small turquoise glazed fragments from KK-3; the rest of the items belong to the underglaze painted ware. Some show a blue painted decoration under a transparent colourless glaze, or a combination of turquoise, black, and blue painting. Almost equally represented are sherds with black painting under a

turquoise transparent glaze. The great majority are very small sherds. One is a deep hemispherical bowl with an everted rim (Fig. 15/h) decorated with a blue floral pattern and squiggles. Its decoration and form suggest an imitation of contemporary Chinese blue and white porcelains (for strict comparisons, see Franke and Urban, 2017: pl. 212/5 from Herat's Timurid gateway dated 14th c., and VV.AA., 2011: pl. XXXII from Pajkend dated 13th–14th c.; cf. also Reitlinger, 1938: fig. 4 dated mid-15th c.; the outer decoration is well comparable with an item from Samarkand, see Pugachenkova, 1950: fig. 14 dated 15th c.). Fig. 15/i is an open vessel ring base with umbo, decorated with a blue-black-turquoise painted rosette under colourless transparent glaze (cf. Franke and Urban, 2017: fig. 51.g from Herat dated 15th–16th c.; Amirhajloo and Sedighian, 2020: fig. 7/8–9 from Qal'eh Sang dated 13th–15th c.; less strict comparisons are with Balkh, Gardin, 1957: pl. XX/2 and XXI/2c dated 15th c.). The floral motif appears as a simplified version of more complex patterns (Golombek et al., 1996: 187, pl. 1 and pl. 25a).

8. Restoration or reuse of vessels

The pottery *corpus* dated to the Ilkhanid-early Timurid period also comprises several items which clearly show traces of reuse or restoration after their breakage. They were found in the areas KK-3 NEW and KK-7; in the former, they represent the 0,3% of the assemblages; in the latter, the group corresponds to the 0,6% of the *corpus*. They comprise sherds reused for covering fireplaces' walls, reshaped sherds with smoothened fractures, including pottery discs, and vessel fragments with restoration piercing holes. These items give interesting information on the socio-economic situation of the population of Kafir Kala living in the *shahristan* in the considered period.

18 vessels show post-firing piercing holes made to restore the broken vessel by sewing the fragments. Ten are glazed vessels from KK-7: one two-tone glazed vessel; two green monochrome vessels; four *sgraffiato* green monochrome vessels; three green monochrome basins with carved decoration; one turquoise monochrome basin. The other restored vessels are unglazed: three large basins (one from KK-3); a body wall probably belonging to a medium tableware vessel from KK-3; a tandir lid from KK-7 (probably obtained from a basin, Fig. 16/a); one cooking pot from KK-7.

Ten unglazed fragments are characterised by well-smoothened fractures (one from KK-3), worked after the breakage of the vessel to give it a function other than its original one. In two cases, the fragment was probably transformed into a stopper, having a circular shape (Fig. 16/b). For four specimens, the new function is unknown; these fragments originally belonged to the base of a large basin (from KK-3), a *khum*, a fine tableware, and a green glazed lid (Fig. 13/e). Two fine tableware sherds from KK-7 were probably converted into a tool with an L-shaped side and another tool that also bears a piercing hole.

Sometimes, ceramic sherds were reused as they were, without any specific intervention on their surfaces or fractures. It is the case of several fragments of a broken cooking pot (Fig. 12/a) that were reused for coating the inner walls of a fireplace (KK-7, SF11, Fig. 16/c). The exposure to further heating for a long time had distorted the body walls, which have soot marks all over. A thick *khum* wall found in KK-7 shows very thick soot marks completely covering the inner surface; it was probably reused for coating the inner walls of a fireplace or as a brazier.

22 items are pottery discs, i.e. ceramic sherds whose fractures were well-smoothened to form a quite small disc and that sometimes show a post-firing central piercing hole (Fig. 16/d). They could have multiple uses, as loom weights, tokens, gaming pieces, etc. Four pottery discs originally belonged to the *sgraffiato* green glazed ware; one was a sherd of an underglaze painted vessel, and another was a green monochrome item. The rest were shaped from unglazed vessels, mostly tableware (one from KK-3).

9. Evidence of ceramic manufacture

Investigations conducted by G.V. Grigoriev in the 1930s demonstrated the existence of a significant pottery production centre at Kafir Kala, located on the eastern bank of the Ilonsai and dated to the 6th–7th centuries CE (Grigorev, 1940; Grigoriev, 1946). Subsequent UIAP excavations brought to light additional six kilns. Radiocarbon (^{14}C) analyses confirmed that Kilns E and F date to the 7th–8th centuries CE, whereas Kilns A and B belong to the 13th–14th centuries CE (Malatesta et al., 2012: 99).

Other interesting evidence related to possible ceramic manufacture

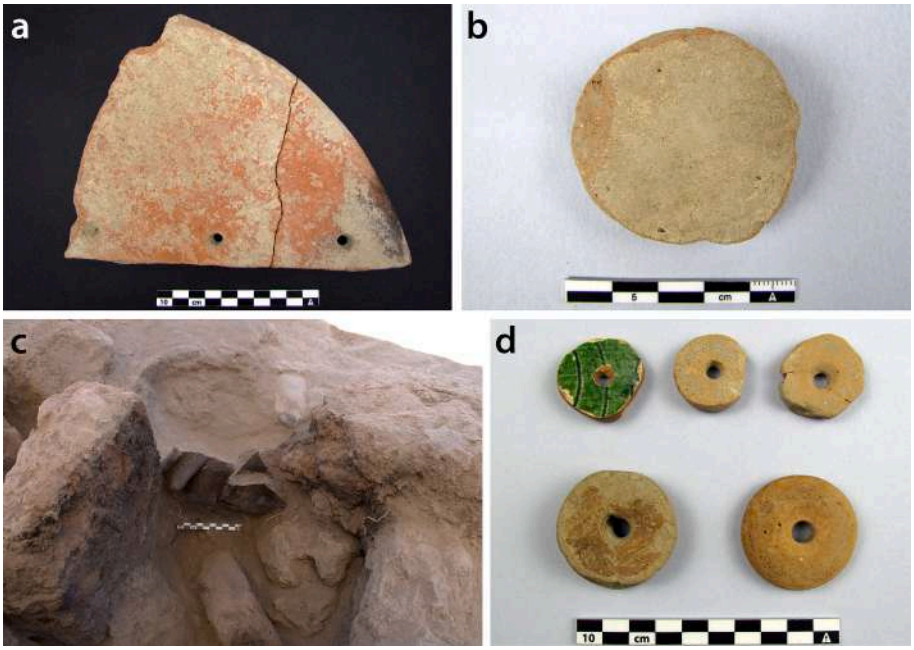


Fig. 16. Restored and reused items. a) inv.no. KK-71100/3 with piercing holes and smoothened fractures; b) with smoothened fractures reused as a stopper from KK-7, SU 1105; c) fireplace SF11 (KK-7) with cooking pot fragments set in the walls; d) pottery discs from KK7, SU 1509 (photos A. Fusaro, O. Patone, © UIAP 2022–2024).

emerged from KK-3 sounding NEW and KK-7.

197 ceramic slags and six terracotta elements related to the kiln furniture were mainly recovered in the uppermost layers of KK-3 NEW (Fig. 17). The latter comprise three small flat discs, a thick circular item with a central hole, and a flat serpentine elongated bar. They are made of fabric 10, while the latter object is made of fabric 2.

The analysis of specific items from KK-3 NEW and KK-7 have provided interesting information on which wares could have been produced at Kafir Kala in the considered period. Fragments of a two-tone (yellow/green) glazed closed vessel have been recovered in KK-7 (Fig. 14/d). Its fabric 23 is very similar to the body composition of a good number of ceramic slags recovered in KK-3 NEW.

Overfired unglazed items were found in the areas KK-3 and KK-7. In particular, an overfired and slightly deformed grey flat base belonging to the medium tableware, showing many air bubbles on the lower surface, can be considered a waster or a second-rate product (KK-3, fig. 17d). Other second-rate products from KK-7 are two highly overfired jugs and the unglazed bowl inv.no. KK7 1100/108, whose overfired body is comparable to both fabrics 2 and 23.

Finally, we must take into account the continuity of use of the most widespread fabrics in Kafir Kala since the earliest pre-Islamic phases, such as fabrics 1 (cooking and coarse wares), 3 (storage vessels), 10 and 2 (tableware), even with slight variations.

Overall, evidence from the kilns, together with the materials recovered in KK-3 sounding NEW, and the continuity of some features of the wares, in terms of fabrics and surface treatments (§ 6.3), could suggest that ceramic production at Kafir Kala continued into the 13th–15th centuries. However, the data presented are not conclusive. New excavations in the area combined with an in-depth archaeometric investigation are needed.

10. Conclusions

The site of Kafir Kala, previously known as a major early medieval administrative centre and a key locus for the Islamisation of the Samarkand oasis, has also yielded substantial evidence of later periods. While the occupation on the citadel (KK-1) was attested up to the 12th century CE, the recent UIAP excavations in the necropolis (KK-6) and the southern *shahristan* (KK-7), combined with ceramic analyses and a reassessment of the material from the northern towers (KK-3), demonstrate uninterrupted use of the site until the 15th century CE. Following the abandonment of the citadel, the population of Kafir Kala relocated to the surrounding areas, partially reusing and modifying earlier structures. In continuity with the early Islamic period and with what has been documented in the citadel, the prevailing function remained residential. The most substantial evidence of domestic activities comes from

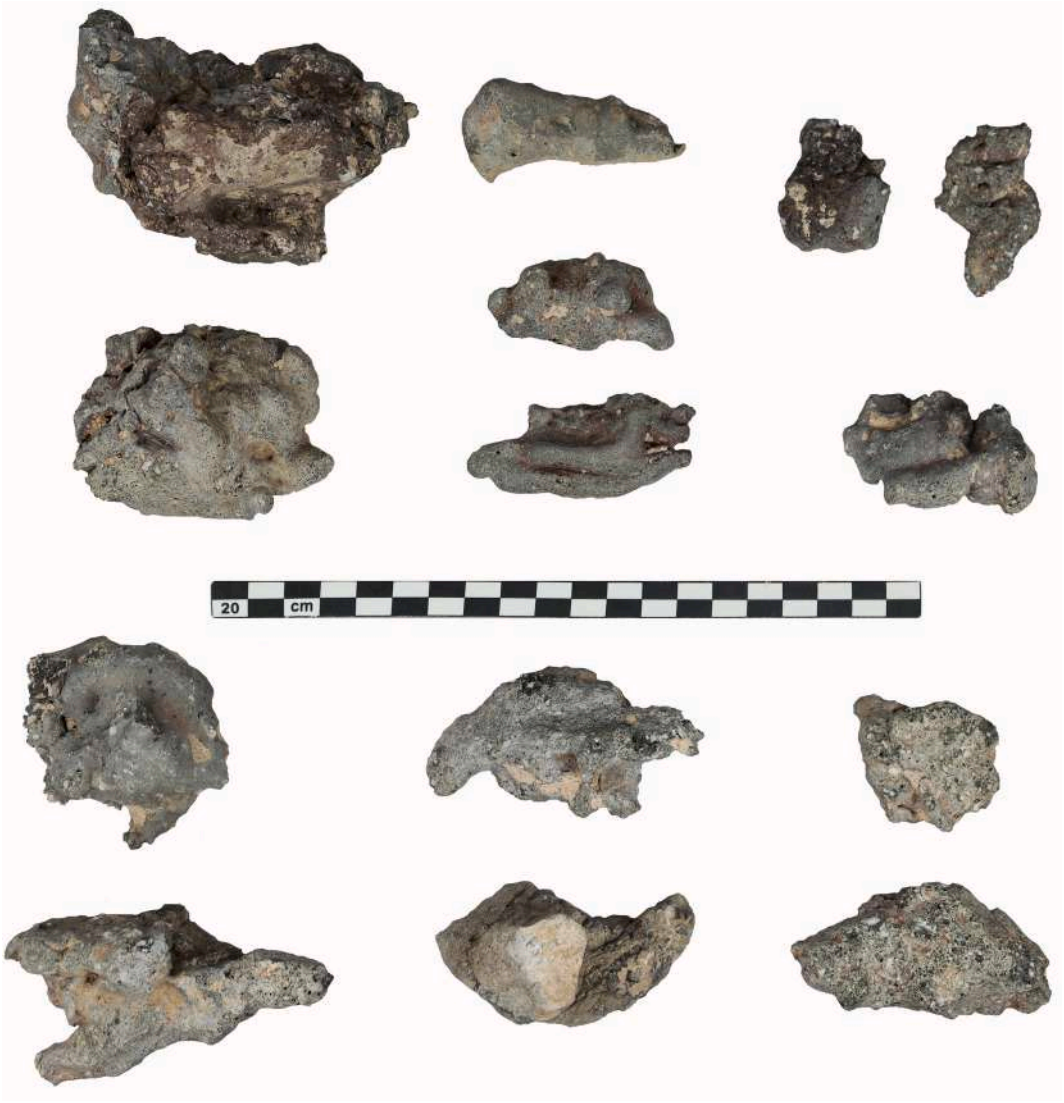


Fig. 17. Evidence of local pottery manufacture from KK-3 sounding NEW, SU 121 (© UIAP 2024).

southern *shahristan*, where a courtyard area was identified featuring numerous cooking installations, possibly covered by light wooden structures, as well as the frequent reuse of architectural elements from earlier periods. At a smaller scale, the evidence from northern towers, especially in the sounding NEW, closely parallels that from southern *shahristan*. Both contexts display similar features—such as fireplaces, pits, and domestic installations—suggesting comparable functions and a shared chronological framework.

Ceramic analysis confirms that these areas were occupied between the 13th and 15th centuries, corresponding to the Ilkhanid and early Timurid periods. The chronological attribution is also supported by the necropolis. Here, these periods are attested by the ceramic material, which is consistent with that recovered from other areas of the site, and above all by the radiocarbon dating of eight out of the ten sampled burials.

An overall simplicity can be traced in the pottery *corpus* presented. Unglazed wares prevail, with most tableware being much less fine than earlier productions. The limited glazed vessels are medium-to-low-quality earthenwares, with only a handful of higher-quality specimens. This evidence, along with the simple architectural record, largely based on the refurbishment and reuse of early structures, and the reuse and restoration of broken vessels reflect a relatively modest lifestyle of the inhabitants of Kafir Kala during this period.

However, the diversity of forms, the presence of well-made unglazed ceramics, the revival of earlier stylistic elements, the traces of local pottery manufacture indicate sustained craft activity. In line with broader patterns observed across Central Asia after the mid-13th century (cf. VV.AA:, 2011: 191–192 and Mukminova, 1992: 30), Kafir Kala experienced a recovery of traditional crafts. Archaeometric analyses are planned to prove local ceramic production and clarify technological continuities and changes through the Islamic period up to the 15th century.

The identification of an Ilkhanid–early Timurid phase at Kafir Kala provides a valuable contribution to the study of common pottery for these periods, which remains poorly understood, and offers a solid basis for characterising typical ceramic assemblages from well-documented archaeological contexts in Central Asia and Iranian regions.

CRediT authorship contribution statement

Agnese Fusaro: Writing – review & editing, Writing – original draft, Resources, Methodology, Investigation, Data curation, Conceptualization. **Simone Mantellini:** Writing – review & editing, Writing – original draft, Resources, Project administration, Investigation. **Amreddin Berdimuradov:** Validation, Resources, Project administration.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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