The British Museum

DEPARTMENT OF CONSERVATION AND SCIENTIFIC RESEARCH

Gold enrichment in Staffordshire Hoard K278: results of SEM-EDX analysis

Object Type Hilt Collar
Date 625-650

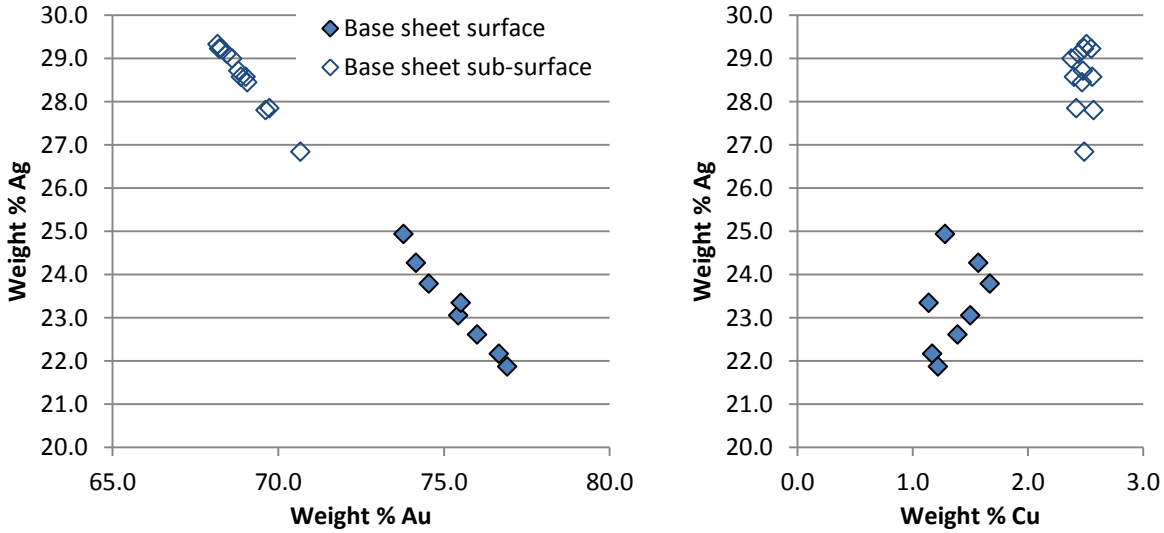
Decoration

Filigree	✓	Glass	
Garnet		Other	

SEM-EDX analysis was undertaken on the gold sheet to which the filigree was attached.

Area analysed	No of analyses		Wt% Au	Wt% Ag	Wt% Cu
Surface	8	Average	75.3	23.3	1.4
		Standard Deviation	*1.14*	*1.05*	*0.20*
Sub-surface	12	Average	68.9	28.6	2.5
		Standard Deviation	*0.74*	*0.74*	*0.06*

SEM-EDX surface and sub-surface compositions (the results are normalised). This analysis was carried out as part of the gold enrichment study. For full details of methodology and associated results see report PR07444-10 and PR07444-15



Plots of gold *vs* silver and copper *vs* silver contents, based on SEM-EDX analysis, showing the differences between the sub-surface and surface analyses.

SEM-EDX analysis of the sub-surface indicated a composition of approximately 68-70 wt% gold, 27-30 wt% silver, the rest being copper. The analysis revealed a *c.*5.3 wt% loss of silver from the surface (a difference of *c.*19% from surface to core), which is indicative of treatment to deliberately enhance the gold colour of the metal. Only copper and small amounts of silver are normally lost from the surface during burial.

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Analysed September 2013

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