

# Supplementary Materials: A Mosaic of Colors: Investigating Production Technologies of Roman Glass Tesserae from Northeastern Italy

**Table S1.** EPMA analytical conditions. Note use of 3 analyser crystals used: LiF (lithium fluoride with  $d_{200} = 2.01 \text{ \AA}$ ), PET (pentaerythritol with  $d_{002} = 4.37 \text{ \AA}$ ) and TAP (thallium acid phthalate with  $d_{100} = 12.84 \text{ \AA}$ ).

Element	Line	Analyzer crystal	Electron beam		Acquisition time (s)		Standard	Detection limits (wt%)
			nA	kV	Peak	Background		
Na	K $\alpha$	TAP 100	2	20	10	10	Albite	0.24
Mg	K $\alpha$	TAP 100	30	20	10	5	Periclase	0.03
Al	K $\alpha$	TAP 100	2	20	10	10	Al <sub>2</sub> O <sub>3</sub>	0.07
Si	K $\alpha$	TAP 100	2	20	10	10	Diopside	0.09
P	K $\alpha$	TAP 100	30	20	10	5	Apatite	0.02
S	K $\alpha$	PET 002	30	20	40	20	Pyrite	0.01
Cl	K $\alpha$	PET 002	30	20	40	20	Vanadinite	0.01
K	K $\alpha$	PET 002	2	20	10	10	Orthoclase	0.14
Ca	K $\alpha$	PET 002	30	20	10	10	Diopside	0.03
Ti	K $\alpha$	PET 002	30	20	10	5	MnTiO <sub>3</sub>	0.02
Mn	K $\alpha$	LiF 200	30	20	10	5	MnTiO <sub>3</sub>	0.04
Fe	K $\alpha$	LiF 200	30	20	10	5	Fe <sub>2</sub> O <sub>3</sub>	0.04
Co	K $\alpha$	LiF 200	30	20	40	20	Co	0.02
Cu	K $\alpha$	LiF 200	30	20	40	20	Cu	0.03
Zn	K $\alpha$	LiF 200	30	20	40	20	Sphalerite	0.03
Sn	L $\alpha$	PET 002	30	20	40	20	SnO <sub>2</sub>	0.03
Sb	L $\alpha$	PET 002	30	20	40	20	Sb <sub>2</sub> S <sub>3</sub>	0.03
Pb	L $\alpha$	PET 002	30	20	40	20	PbS	0.07

**Table S2.** Comparisons between “known” values and data from EPMA for standard glass “Corning B”. Precision (%) and accuracy (%) also reported. “Known” values are given according to recommended reference composition, published in Brill [1]. N: number of measures.

N = 16					
Element	Mean (wt%)	St. Dev.	Precision (%)	Known <sup>1</sup> (wt%)	Accuracy <sup>1</sup> (%)
SiO <sub>2</sub>	61.42	0.37	0.60	61.55	0.21
Na <sub>2</sub> O	16.97	0.53	3.12	17.00	0.18
CaO	8.67	0.06	0.69	8.56	1.29
Al <sub>2</sub> O <sub>3</sub>	4.10	0.14	3.41	4.36	5.96
K <sub>2</sub> O	1.05	0.07	6.67	1.00	5.00
MgO	1.11	0.04	3.60	1.03	7.77
FeO	0.31	0.03	9.68	0.31	0.00
TiO <sub>2</sub>	0.11	0.01	9.09	0.09	22.22
MnO	0.28	0.02	7.14	0.25	12.00
P <sub>2</sub> O <sub>5</sub>	0.81	0.03	3.70	0.82	1.22
CoO	0.05	0.01	20.00	0.05	0.00
CuO	2.84	0.02	0.70	2.66	6.77
ZnO	0.19	0.01	5.26	0.19	0.00

SnO <sub>2</sub>	< 0.04	n.d.	n.d.	0.04	n.d.
Sb <sub>2</sub> O <sub>3</sub>	0.41	0.02	4.88	0.42	2.38
PbO	0.55	0.05	9.09	0.61	9.84
SO <sub>3</sub>	0.56	0.02	3.57	0.50	12.00
Cl	0.18	0.01	5.56	0.20	10.00

1 = Recommended Reference Composition [1]. n.d. = not detected.

## References

1. Brill, R.H. *Chemical Analyses of Early Glasses. Volume 2 Tables of Analyses*; The Corning Museum of Glass: Corning, NY, USA, 1999; ISBN 0-872900-143-2.