

## Supplementary Material 2 – S2

**S2.** Major element concentrations of pumice fragments the *Villa del Pezzolo* mortars of groups B and C (in wt.%, recalculated to 100%; below detection limits). Na<sub>2</sub>O+K<sub>2</sub>O (in wt.%) also shown.

	Pumice													
wt.%	VP7	VP8	VP9	VP10	VP11	VP12	VP13	VP14	VP15	VP16	VP17	VP18	VP19	VP20
SiO <sub>2</sub>	54.93	55.38	54.79	54.53	54.6	54.35	54.88	55.43	55.63	54.85	55.54	54.32	54.37	54.25
TiO <sub>2</sub>	0.29	0.46	0.16	0.38	0.71	0.33	0.04	0.34	0.5	0.45	0.52	0.35	0.48	0.53
Al <sub>2</sub> O <sub>3</sub>	20.63	21.13	20.55	20.31	20.47	22.97	20.98	20.45	21.02	21.01	20.47	20.53	21.03	20.02
Fe <sub>2</sub> O <sub>3</sub>	0.18	0.23	0.07	bdl	0.36	bdl	bdl	0.34	bdl	0.47	0.17	0.24	0.08	0.18
MnO	bdl	bdl	0.17	0.27	bdl	0.03	0.06	0.13	0.14	bdl	bdl	0.17	0.19	bdl
MgO	0.38	0.66	0.61	0.50	0.44	0.10	0.34	0.44	0.34	0.43	0.67	0.56	0.51	0.64
BaO	3.64	4.21	3.34	3.48	3.09	3.72	4.06	3.48	3.28	3.68	3.37	3.85	3.46	4.03
CaO	5.22	4.75	4.76	4.88	5.32	4.52	4.14	4.29	4.7	4.29	4.79	4.96	3.92	4.87
Na <sub>2</sub> O	6.06	6.10	5.12	5.01	6.45	6.99	6.21	5.86	6.00	6.15	6.68	6.73	5.8	5.35
K <sub>2</sub> O	6.77	6.50	9.11	9.26	6.98	6.09	8.43	8.32	7.23	7.5	6.47	7.14	9.14	8.88
P <sub>2</sub> O <sub>5</sub>	0.28	0.18	bdl	0.18	0.24	bdl	0.18	0.15	bdl	0.15	0.15	0.27	0.04	0.10
SO <sub>3</sub>	0.14	0.11	bdl	0.10	0.46	0.07	bdl	0.05	0.22	0.16	0.22	bdl	0.21	0.18
Cl <sup>-</sup>	0.92	0.71	0.62	0.66	0.58	0.30	0.75	0.70	0.89	0.86	0.91	0.68	0.62	0.90
<b>Total</b>	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
<b>Na<sub>2</sub>O+K<sub>2</sub>O</b>	12.83	12.60	14.23	14.27	13.43	13.08	14.64	14.18	13.23	13.65	13.15	13.87	14.94	14.23