

Supplementary Material 1 – S1

S1. Major element concentrations of glassy shards and pumice fragments in *Villa del Pezzolo* mortars of group A (in wt.%, recalculated to 100%; bdl: below detection limits). Na₂O+K₂O (in wt.%) also shown.

| | Glassy shards | | | | | | Pumice | | | | | |
|---------------------------------------|---------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| wt.% | VP1 | VP2 | VP3 | VP4 | VP5 | VP6 | VP1 | VP2 | VP3 | VP4 | VP5 | VP6 |
| SiO₂ | 62.24 | 61.35 | 61.59 | 62.14 | 62.56 | 61.82 | 61.10 | 60.23 | 61.69 | 61.66 | 60.05 | 60.21 |
| TiO₂ | 0.64 | 0.43 | 0.30 | 0.55 | 0.52 | 0.66 | 0.49 | 0.75 | 0.88 | 0.37 | 0.48 | 0.12 |
| Al₂O₃ | 18.95 | 19.74 | 18.91 | 18.53 | 18.78 | 18.46 | 19.5 | 18.51 | 18.81 | 18.61 | 17.8 | 17.85 |
| Fe₂O₃ | 2.68 | 2.24 | 2.61 | 2.99 | 2.46 | 2.54 | bdl | 0.13 | 0.41 | 0.21 | bdl | bdl |
| MnO | 0.22 | 0.38 | bdl | 0.24 | bdl | 0.24 | bdl | 0.04 | bdl | bdl | 0.23 | 0.18 |
| MgO | 0.23 | 0.19 | 0.31 | 0.20 | 0.25 | 0.33 | 1.56 | 1.54 | 0.26 | 0.31 | 1.07 | 0.67 |
| CaO | 2.24 | 1.41 | 1.86 | 1.40 | 1.98 | 2.13 | 6.13 | 6.62 | 1.81 | 1.95 | 3.76 | 3.16 |
| Na₂O | 7.47 | 5.74 | 5.85 | 5.83 | 6.56 | 7.24 | 3.73 | 3.44 | 5.18 | 6.03 | 3.51 | 3.32 |
| K₂O | 5.75 | 7.55 | 6.65 | 7.51 | 6.21 | 6.02 | 8.23 | 9.87 | 7.52 | 7.12 | 3.21 | 3.63 |
| P₂O₅ | bdl | 0.14 | 0.20 | 0.05 | 0.01 | 0.11 | 0.35 | 0.37 | bdl | bdl | 9.54 | 9.86 |
| BaO | bdl | bdl | bdl | 0.57 | 0.31 | bdl | 6.07 | 6.01 | 2.76 | 3.17 | 0.31 | 0.03 |
| SO₃ | 0.19 | 0.12 | 0.12 | 0.02 | 0.05 | 0.13 | 0.30 | 0.08 | 0.13 | bdl | bdl | bdl |
| Cl⁻ | 0.34 | 0.70 | 0.46 | 0.50 | 0.31 | 0.32 | 0.46 | 0.44 | 0.83 | 0.82 | 0.51 | 0.65 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Na₂O+K₂O | 13.22 | 13.29 | 12.5 | 13.34 | 12.77 | 13.26 | 11.96 | 13.30 | 12.70 | 13.14 | 12.75 | 13.49 |