S2. Results of the QPA-XRPD analyses.

Cumulative XRPD-QPA of joint mortar samples collected from 2022 excavation at the Sarno bath complex.

Sample		M326	M327	M328	M329	M330	M331	M332	M333	M334	M335	M336	M337	M338	M339	M345
Calcite		12.4	11.9	9.9	15.2	15.0	11.3	15.5	15.2	27.4	8.9	16.9	8.1	12.5	28.9	12.3
Aragonite		b.d	b.d	2.0	1.6	0.7	1.9	1.0	b.d	0.9	2.1	0.9	0.4	0.7	0.4	1.2
Vaterite		5.4	b.d	4.9	b.d	5.0	b.d	1.4	b.d	1.3	0.3	1.3	2.0	b.d	0.2	4.7
Dolomite		b.d.	0.1	b.d	b.d	0.2	b.d	0.2	b.d	b.d	b.d	0.4	0.3	b.d	0.4	b.d
AFm		b.d	b.d	b.d	b.d	b.d	b.d	b.d	b.d	b.d	b.d	b.d	b.d	b.d	0.7	b.d
Quartz		1.0	0.9	0.8	0.9	0.8	0.6	2.0	1.0	1.3	1.0	0.9	1.0	1.5	0.7	2.1
Plagioclase		20.6	15.9	16.2	13.4	11.9	13.4	14.5	13.7	11.2	15.2	16.3	19.1	14.4	15.3	10.0
K-feldspar		11.9	15.4	16.7	15.6	15.3	14.0	14.3	14.1	11.5	13.4	14.6	15.5	13.6	10.5	13.6
Clinopyroxene		16.8	16.2	19.6	11.6	11.4	15.5	16.1	14.7	8.6	22.4	19.4	18.3	15.6	21.3	9.6
Leucite		1.4	0.5	0.5	0.4	0.5	0.5	0.6	2.9	1.3	1.1	2.2	9.2	0.9	4.8	0.9
Analcime		4.2	7.7	9.5	6.2	5.8	6.5	5.5	6.0	4.6	7.9	4.7	4.6	3.8	2.6	4.5
Chabazite		b.d	b.d	b.d	b.d	b.d	b.d	b.d	0.1	b.d	b.d	b.d	b.d	b.d	b.d	0.5
Hematite		2.4	2.1	2.2	1.5	1.3	1.8	1.9	1.7	1.3	1.7	3.0	3.2	1.7	3.3	1.2
Olivine		2.1	b.d	b.d	b.d	1.1	b.d	1.4	b.d	b.d	b.d	1.8	b.d	b.d	1.0	b.d
Biotite		1.0	0.8	0.6	1.3	0.5	1.2	0.9	0.8	1.0	0.7	0.5	0.5	1.3	0.3	0.9
Amorphous		20.8	28.5	17.1	32.3	28.9	33.3	24.7	29.8	29.6	25.2	16.9	17.8	34.0	9.6	36.8
Alteration phases	Gypsum	b.d	b.d	b.d	b.d	b.d	b.d	b.d	b.d	b.d	0.1	b.d	b.d	b.d	b.d	1.7
	Halite	b.d	b.d	b.d	b.d	0.4	b.d	b.d	b.d	b.d	b.d	0.2	b.d	b.d	b.d	b.d
	Gaylussite	b.d	b.d	b.d	b.d	1.2	b.d	b.d	b.d	b.d	b.d	b.d	b.d	b.d	b.d	b.d

Cumulative XRPD-QPA of joint mortar collected from 2022 excavation at the Sarno bath complex after the removal of newly-formed phases produced by weathering. The remaining original mineral phases were recalculated at 100 %wt.

Sample	M326	M327	M328	M329	M330	M331	M332	M333	M334	M335	M336	M337	M338	M339	M345
Calcite	12.4	11.9	9.9	15.2	15.3	11.3	15.5	15.2	27.5	8.9	17.0	8.1	12.5	28.9	12.5
Aragonite	b.d	b.d	2.0	1.6	0.7	1.9	1.0	b.d	0.9	2.1	0.9	0.4	0.7	0.4	1.2
Vaterite	5.4	b.d	4.9	b.d	5.1	b.d	1.4	b.d	1.3	0.3	1.3	2.0	b.d	0.2	4.8
Dolomite	b.d.	0.1	b.d	b.d	0.2	b.d	0.2	b.d	b.d	b.d	0.4	0.3	b.d	0.4	b.d
AFm	b.d	b.d	b.d	b.d	b.d	b.d	b.d	b.d	b.d	b.d	b.d	b.d	b.d	0.7	b.d.
Quartz	1.0	0.9	0.8	0.9	0.8	0.6	2.0	1.0	1.3	1.0	0.9	1.0	1.5	0.7	2.1
Plagioclase	20.6	15.9	16.2	13.4	12.1	13.4	14.5	13.7	11.2	15.2	16.3	19.1	14.4	15.3	10.2
K-feldspar	11.9	15.4	16.7	15.6	15.6	14.0	14.3	14.1	11.5	13.4	14.6	15.5	13.6	10.5	13.8
Clinopyroxene	16.8	16.2	19.6	11.6	11.6	15.5	16.1	14.7	8.6	22.4	19.4	18.3	15.6	21.3	9.8
Leucite	1.4	0.5	0.5	0.4	0.5	0.5	0.6	2.9	1.3	1.1	2.2	9.2	0.9	4.8	0.9
Analcime	4.2	7.7	9.5	6.2	5.9	6.5	5.5	6.0	4.6	7.9	4.7	4.6	3.8	2.6	4.6
Chabazite	b.d	b.d	b.d	b.d	b.d	b.d	b.d	0.1	b.d	b.d	b.d	b.d	b.d	b.d	0.5
Hematite	2.4	2.1	2.2	1.5	1.3	1.8	1.9	1.7	1.3	1.7	3.0	3.2	1.7	3.3	1.2
Olivine	2.1	b.d	b.d	b.d	1.1	b.d	1.4	b.d	b.d	b.d	1.8	b.d	b.d	1.0	b.d
Biotite	1.0	0.8	0.6	1.3	0.5	1.2	0.9	0.8	1.0	0.7	0.5	0.5	1.3	0.3	0.9
Amorphous	20.8	28.5	17.1	32.3	29.3	33.3	24.7	29.8	29.6	25.3	17.1	17.8	34.0	9.6	37.5