

Article

Supplementary Materials: The Mortars of Florence Riverbanks: Raw Materials and Technologies of *Lungarni* Historical Masonry

Sara Calandra, Teresa Salvatici, Irene Centauro, Emma Cantisani and Carlo Alberto Garzonio

Table S1. Mineralogical composition (semiquantitative data) of mortars and selected lumps (L).

Sample	Sampling depth (m)	Quartz	Calcite	Plagioclase	K feldspar	Other
C2-X	0.80	+++	+	+	-	Muscovite (*), chlorite (*)
C2b-Y	2.50	+++	+	+	-	Muscovite (*), vermiculite (*), clinochlore (*)
C3-X	1.30	+++	+	+	-	Muscovite (*), chlorite (*)
C5-Z	0.50	+++	+	+	-	Muscovite (*), gypsum (+)
C5-W	1.06	+++	+	+	+	Muscovite (*), gypsum (+), ettringite (*)
C6-Y	0.63	+++	+	+	-	Muscovite (*), clinochlore (*)
C7-X	0.58	++	+++	+	-	Muscovite (*), clinochlore (*), vaterite (+)
C7-Y	1.16	+++	+	+	-	Muscovite (*), clinochlore (*)
C10-X	0.32	+++	++	+	-	Muscovite (*), clinochlore (*)
C10-Y	0.53	++	+	+++	*	Muscovite (*), clinochlore (*), montmorillonite (*)
C10-Y	1.00	+++	++	+	+	Muscovite (*), clinochlore (*), montmorillonite (*)
C11- X	0.67	+++	+	+	-	Muscovite (+), clinochlore (*), tobermorite (*)
C13- X	0.30	+++	+	+	-	Muscovite (*), clinochlore (*), tobermorite (*)
C2-X L		-	+++	-	-	Vaterite (++) , tobermorite (++) , gypsum (*)
C2b-Y L1		-	+++	-	-	Aragonite (+), vaterite (+), gypsum (++)
C2b-Y L2		-	++	-	-	Vaterite (+++), tobermorite (+), gypsum (+)
C3-X L		+	+++	-	-	Tobermorite (*), gypsum (*)
C6-Y L		*	+++	-	-	Tobermorite (+), gypsum (*)
C7-X L		+	+++	-	-	Tobermorite (*)
C13-X L			+++			Aragonite (+), vaterite (+), tobermorite (+), gypsum (*)

(+++ : very abundant; ++ : abundant; + : present; * : traces; - : below detection limit)

Table S2. Petrographic description of core samples.

Mortar samples	Binder	Aggregate	B/A	Macroporosity
C2-X	Heterogeneous structure and micritic/ microsparitic texture. Some areas with low birefringence colour. Numerous lumps	Composition: quartz (mono and polycrystalline) plagioclases, few carbonate rock fragments, siltstones Heterogeneous grain size distribution Grain size: 300 μ m-2-3mm Shape: sub angular	1/3-1/4	Medium/high amount due to pores of irregular shape
C2b-Y	Heterogeneous structure and micritic/microsparitic texture. Some area with low birefringence colour. Numerous lumps	Composition: quartz (mono and polycrystalline) plagioclases, K feldspar, calcite, arenaceous and carbonate rock fragments, siltstones Heterogeneous grain size distribution Grain size 500 μ m-3 mm Shape: sub angular/ sub rounded	1/4	Medium/high amount due to microcracks and pores of irregular shape
C3-X	Heterogeneous structure and micritic/microsparitic texture. Numerous lumps	Composition: quartz (mono and polycrystalline) plagioclases, K feldspar, calcite, arenaceous rock fragments, siltstones, marly limestone fragments Homogeneous grain size distribution Mean grain size 150-200 μ m, few mm grains Shape: sub angular/ sub rounded	1/3	Medium /high amount due to microcracks and pores of irregular shape
C5-Z	Heterogeneous structure and micritic texture. Remains of unhydrated clinker	Composition: quartz (mono and polycrystalline) plagioclases, K feldspar, arenaceous and carbonate rock fragments, siltstones, magmatic and metamorphic rock fragments Bimodal grain size distribution Grain size: 1-2 mm; 500-800 μ m Shape: sub angular/ sub rounded	1/3	Low amount due to microcracks and pores of irregular shape
C5-W	Heterogeneous structure and micritic/microsparitic texture. Remains of unhydrated clinker	Composition: quartz (mono and polycrystalline) plagioclases, K feldspar, arenaceous and carbonate rock fragments, siltstones, magmatic and metamorphic rock fragments Heterogeneous grain size distribution Grain size: 1-2 mm; 100-800 μ m Shape: sub angular/ sub rounded		Low amount due to pores of sub rounded shape
C6-Y	Heterogeneous structure and micritic/microsparitic texture.	Composition: quartz (mono and polycrystalline) plagioclases, calcite, K feldspar,	1/4	Medium/high amount due to pores of sub rounded shape

	Some area with low birefringence colour.	arenaceous and carbonate rock fragments, few magmatic rock fragments. Heterogeneous grain size distribution Grain size 100 μ m-1.5mm Shape: sub angular/ sub rounded		
C7-X	Heterogeneous structure and micritic/microsparitic texture. Numerous lumps	Composition: quartz (mono and polycrystalline) plagioclases, K feldspar, arenaceous and carbonate rock fragments Heterogeneous grain size distribution Grain size: 1-2 mm; 300 μ m Shape: sub angular/ sub rounded	1/3	Medium amount due to pores of irregular shape
C7-Y	Heterogeneous structure and micritic/microsparitic texture. Some area with low birefringence colour.	Composition: quartz (mono and polycrystalline) plagioclases, K feldspar, carbonate rock fragments. Homogeneous grain size distribution Grain size 800- 100 μ m Shape: sub angular/ sub rounded	1/3	Medium amount due to pores of irregular shape
C10-X	Heterogeneous structure and micritic/microsparitic texture.	Composition: quartz (mono and polycrystalline) plagioclases, K feldspar, few rock fragments. Homogeneous grain size distribution Grain size 700- 100 μ m Shape: sub angular/ sub rounded	1/4	Medium /high amount due to pores of irregular shape
C10-Y	Heterogeneous structure and micritic/microsparitic texture. Some areas with low birefringence colour.	Composition: quartz (mono and polycrystalline) plagioclases, K feldspar, fragments of carbonate rocks, sandstones Heterogeneous grain size distribution Grain size 2 mm- 400 μ m Shape: sub angular/ sub rounded	1/4	High amount due to pores of irregular shape
C10-Y	Heterogeneous structure and micritic/microsparitic texture. Some areas with low birefringence colour.	Composition: quartz (mono and polycrystalline) plagioclases, K feldspar, few fragments of rocks Homogeneous grain size distribution Grain size 600- 100 μ m Shape: sub angular/ sub rounded	1/4	High amount due to pores of irregular shape

C11- X	Heterogeneous structure and micritic/microsparitic texture. Some areas with low birefringence colour. Some lumps.	Composition: quartz (mono and 1/4 polycrystalline) plagioclases, K feldspar, few fragments of rocks Homogeneous grain size distribution Grain size 400- 50 μ m Shape: sub angular/ sub rounded	Medium amount due to pores of irregular shape
--------	---	---	---

C13- X	Heterogeneous structure and micritic/microsparitic texture. Some areas with low birefringence colour. Some lumps.	Composition: quartz (mono and 1/4 polycrystalline) plagioclases, K feldspar, few fragments of rocks Homogeneous grain size distribution Grain size 200 μ m Shape: sub angular	Medium/ high amount due to pores of irregular shape
--------	---	--	---

(B/A= binder/aggregate ratio)