

## Supplementary material for the manuscript:

Evaluation of the effectiveness of coatings for the protection of outdoor terracotta artworks through artificial ageing tests

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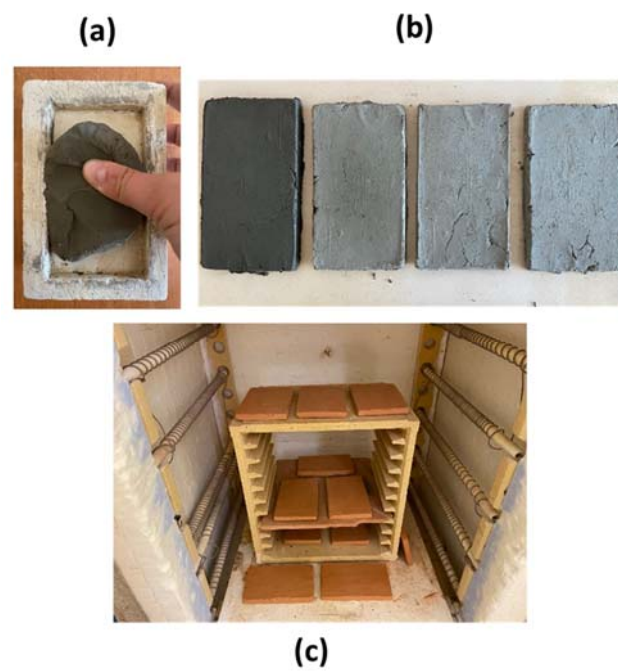
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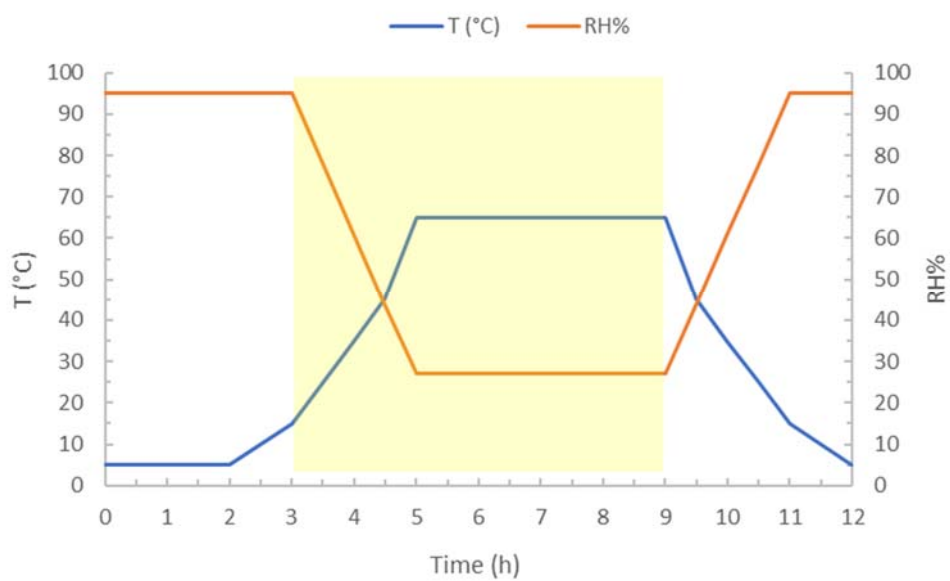


**Fig. S2.** Stages of specimens' preparation: *molding* (a), *drying* (b) and *firing* (c).

## Figures



**Fig. S3.** Runoff test setup (a); detail of two runoff stations during the test (b).



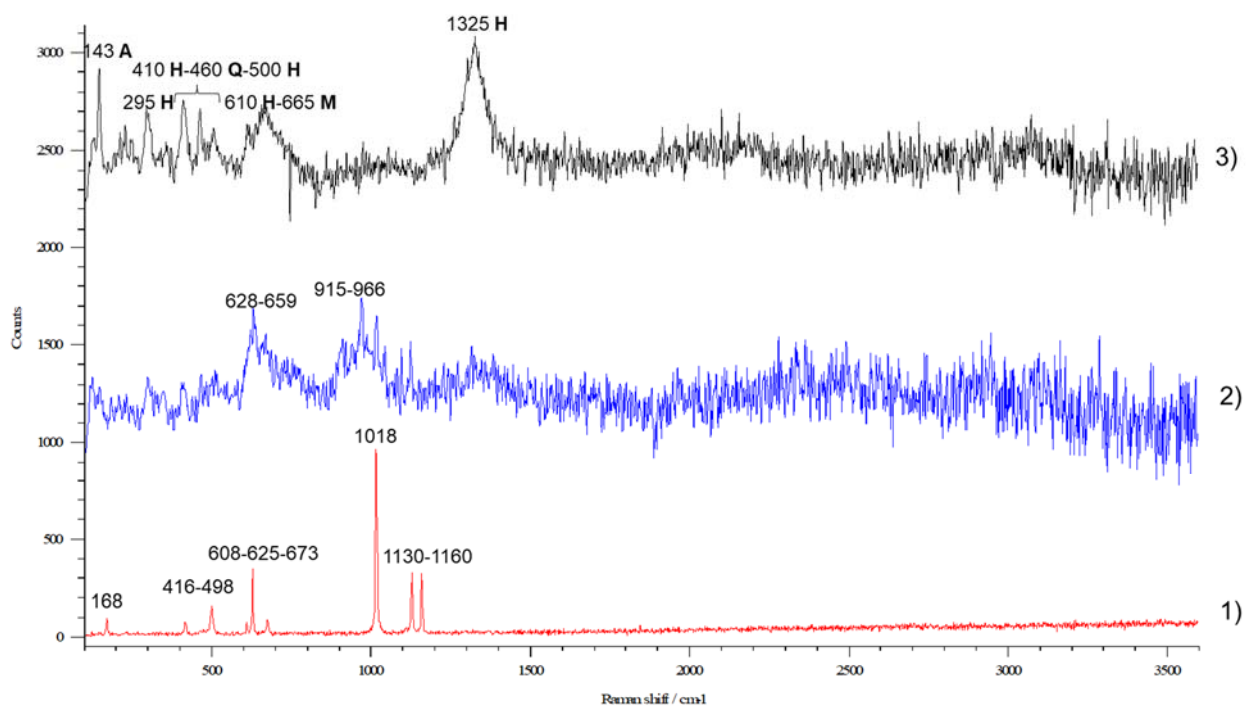
**Fig. S4.** Scheme of the climatic chamber cycle, shaded in yellow the segments where UVA irradiation was on.

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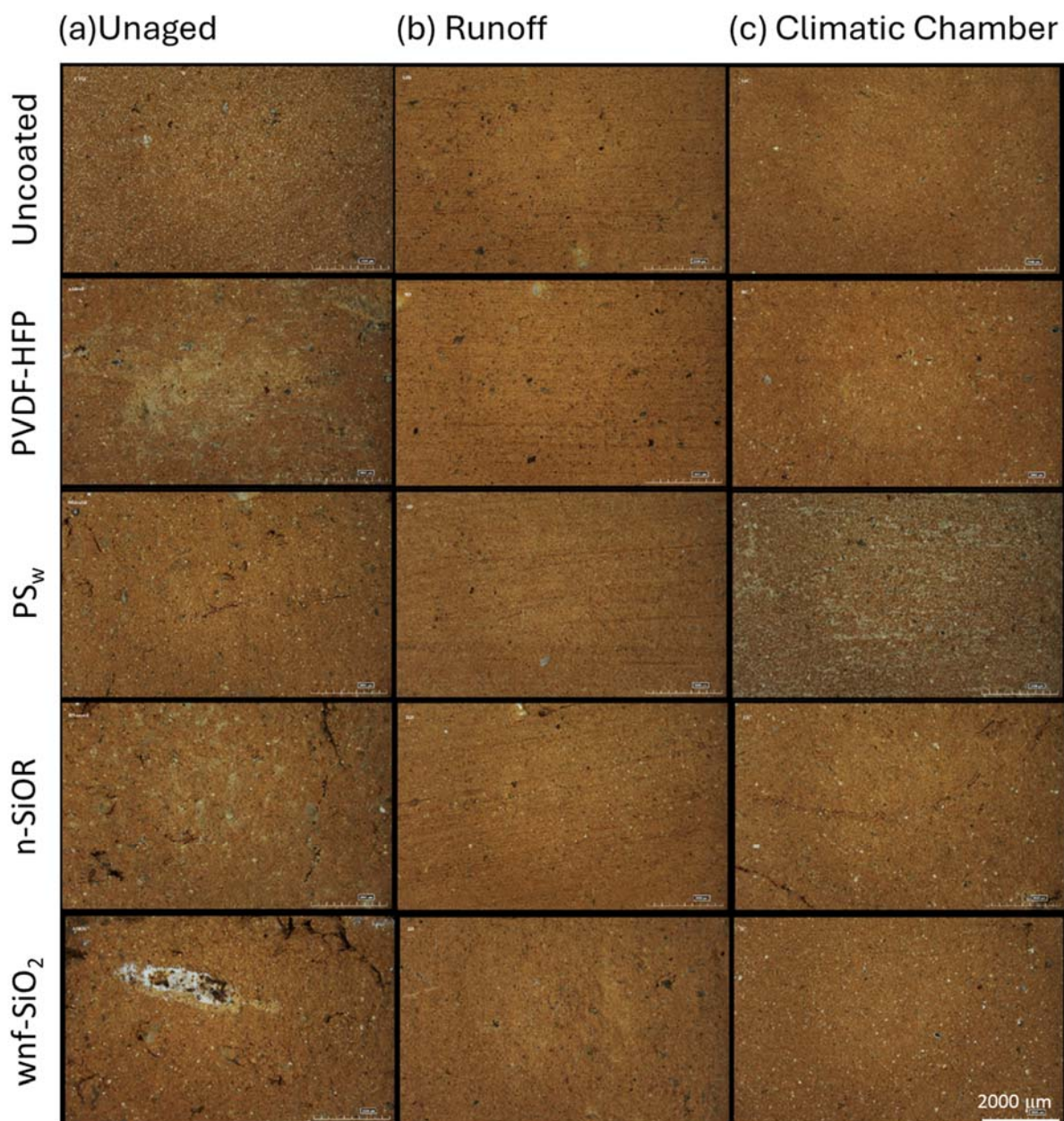
**Fig. S5.** Long-term outdoor ageing: general view of specimens exposed on a terrace at the Museo Internazionale delle Ceramiche in Faenza.

## Figures



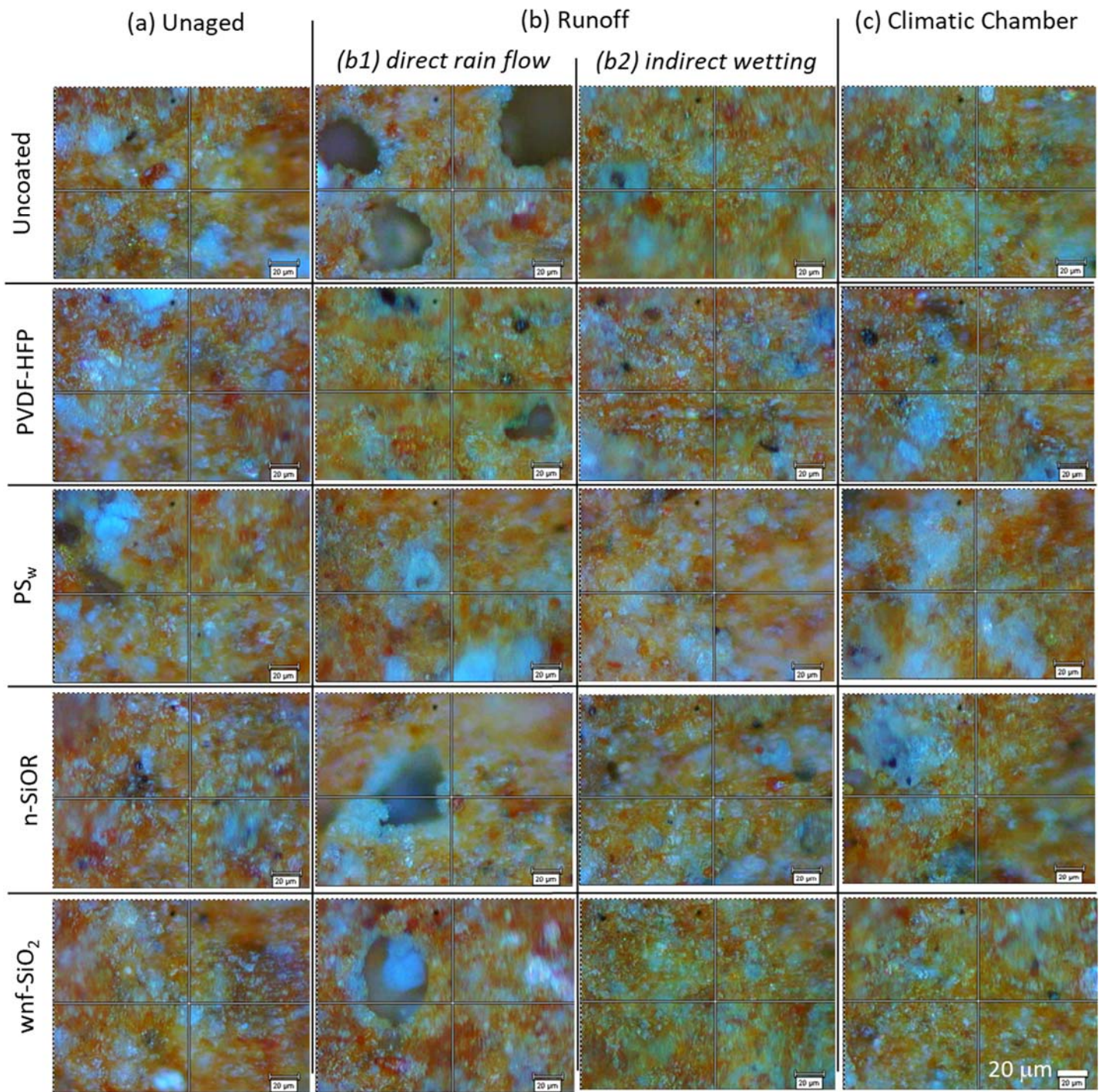
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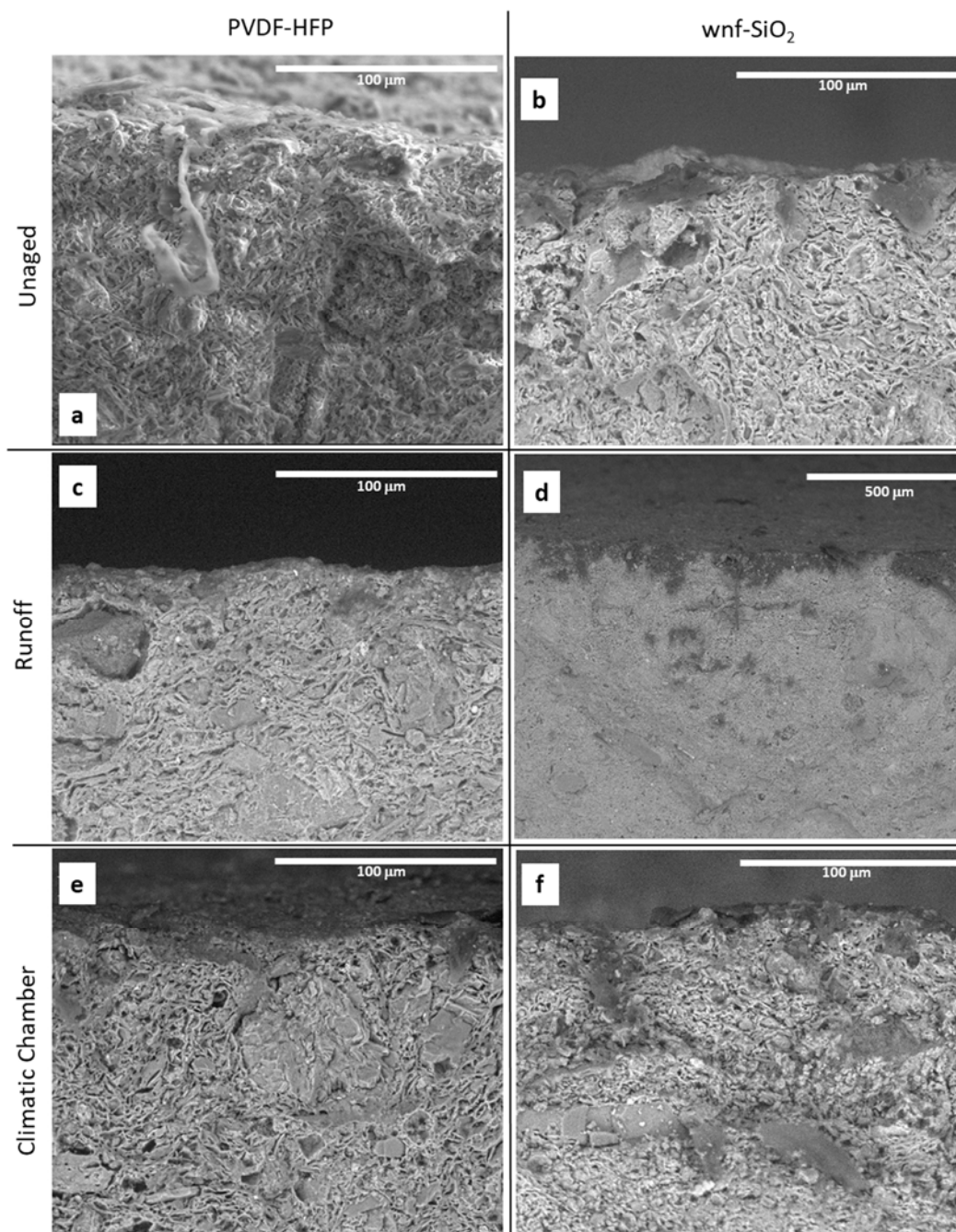
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## Figures



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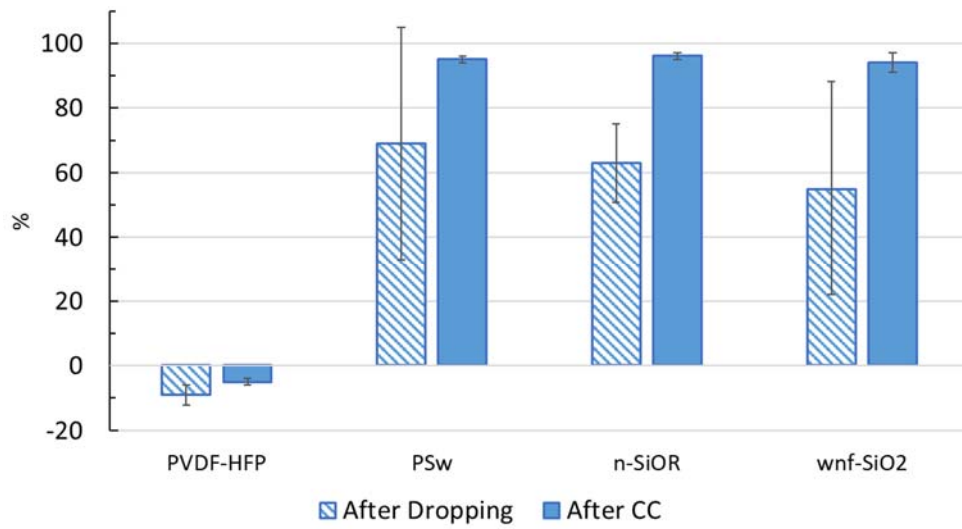
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**Fig. S9.** ESEM images of cross-sections of specimens treated with PVDF-HFP and wnf-SiO<sub>2</sub> before (a, b) and after aging through runoff (c, d) and climatic chamber (e, f).



## Figures



**Fig. S10.** Percent reduction of water absorption capacity ( $C_w\%$ ) of coated specimens after ageing by runoff and climatic chamber with respect to uncoated specimens aged in the same conditions.

## Tables

**Tab. S1.** Chemical composition of a terracotta sample from “Wind Wall” (ML2) and of MB02 mixture selected for the specimens’ production.

<b>Oxides</b>	<b>ML2 [45]</b>	<b>MB02 mixture</b>
SiO <sub>2</sub>	53.52%	62%
Al <sub>2</sub> O <sub>3</sub>	15.51%	17.4%
TiO <sub>2</sub>	0.70%	1.8%
Fe <sub>2</sub> O <sub>3</sub>	6.20%	5.5%
MnO	0.12%	-
MgO	2.84%	0.90%
CaO	12.03%	11.6%
Na <sub>2</sub> O	1.79%	0.17%
K <sub>2</sub> O	3.04%	0.71%

**Tab. S2.** Percent dry mass variation after ageing, normalized by the initial dry weight and averaged by sample type (averages of three specimens per type and related standard deviations).

	<b>mv% RUNOFF</b>	<b>mv% CC</b>
<b>Uncoated</b>	0.9±0.2%	0.7±0.2%
<b>PVDF-HFP</b>	1.6±0.1%	0.7±0.1%
<b>PS<sub>w</sub></b>	1.3±0.2%	0.5±0.1%
<b>n-SiOR</b>	0.4±0.1%	0.7±0.1%
<b>wnf-SiO<sub>2</sub></b>	0.6±0.1%	0.3±0.1%

**Tab. S3.** Color variations of coated and uncoated terracotta specimens after 3 years of unsheltered outdoor exposure (average of 3 specimens and related standard deviation).

	<b>ΔL*</b>	<b>Δa*</b>	<b>Δb*</b>	<b>ΔE*</b>
<b>Uncoated</b>	-11±3	-1±1	-1±1	11±3
<b>PVDF-HFP</b>	-5±1	-0±5	-4±2	8±1
<b>PS<sub>w</sub></b>	-3±0.5	-0.6±0.4	-2.9±0.8	4.3±0.4
<b>n-SiOR</b>	0.0±0.6	-5±1	-7±1	9±2
<b>wnf-SiO<sub>2</sub></b>	-2±1	0.24±0.04	0.3±0.2	2±1