

**Applicability and efficacy of an enhanced nanolime consolidation technique for British Museum limestone objects**

MAUCOURANT, Cyril, O'FLAHERTY, Fin <<http://orcid.org/0000-0003-3121-0492>> and DRAGO, Amy

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**Published version**

MAUCOURANT, Cyril, O'FLAHERTY, Fin and DRAGO, Amy (2023). Applicability and efficacy of an enhanced nanolime consolidation technique for British Museum limestone objects. *Journal of Cultural Heritage*, 62, 339-348.

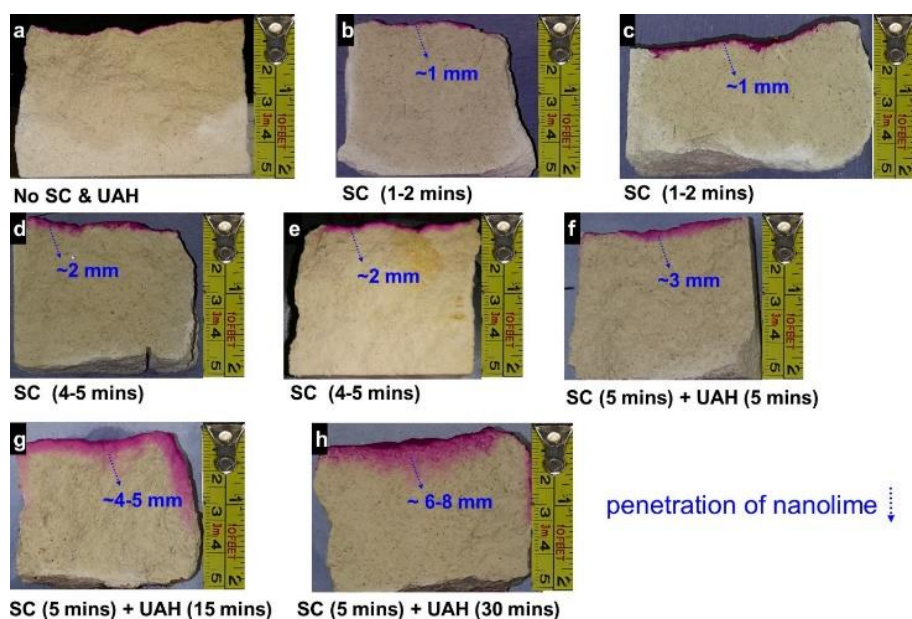
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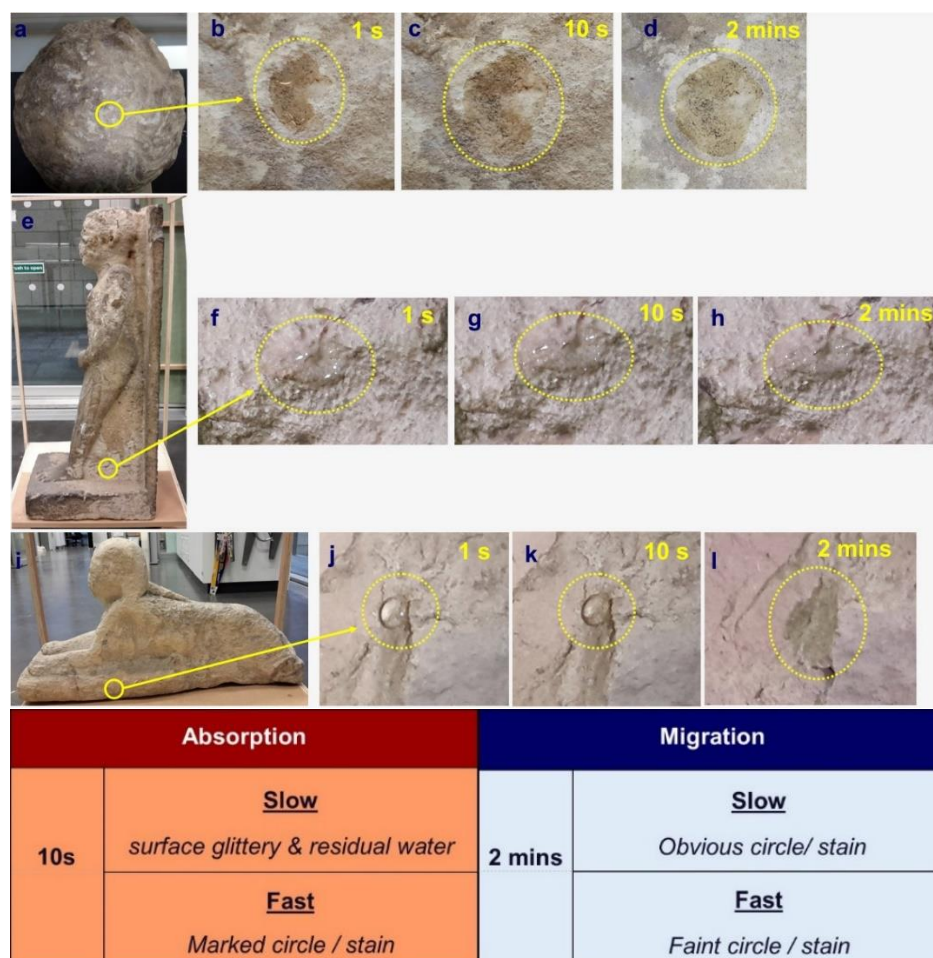
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# Applicability and efficacy of an enhanced nanolime consolidation technique for British Museum limestone objects

## Supplementary materials

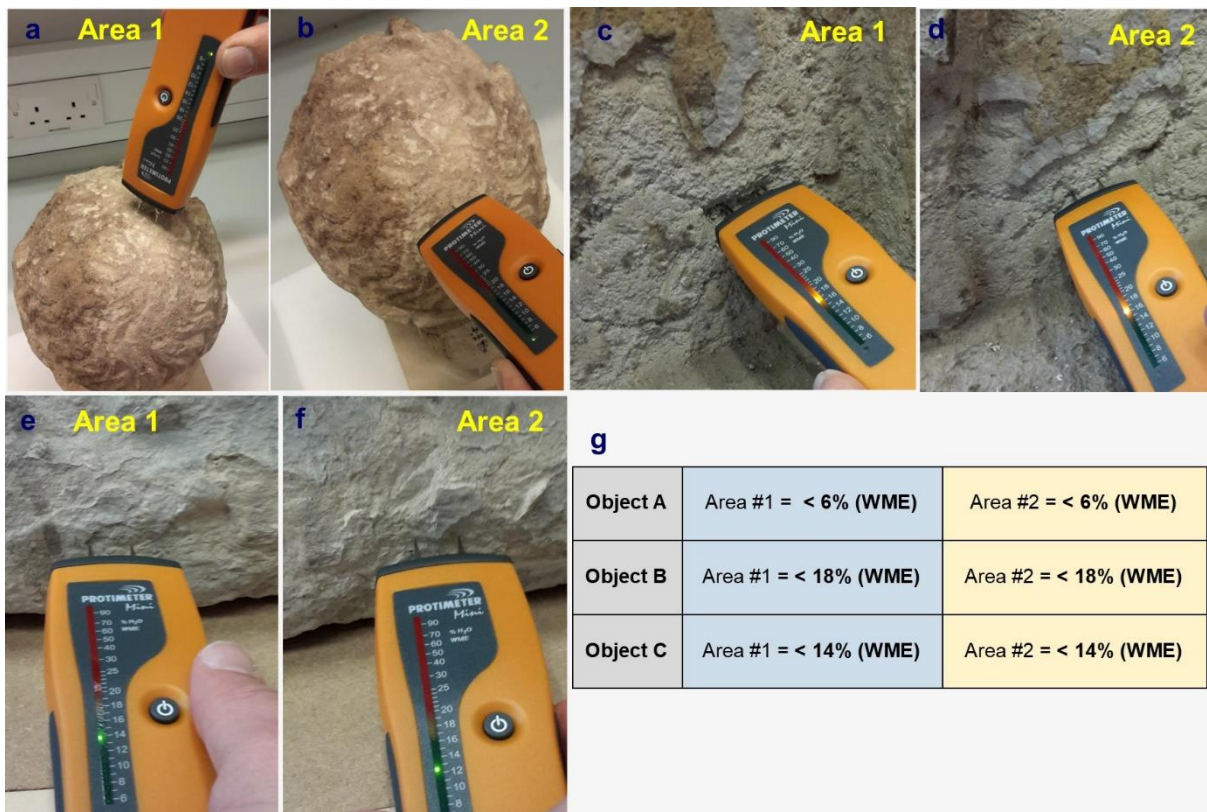


**Fig. A** Results of phenolphthalein tests carried out on cross-sections of fine-grained *Lavoux* limestone samples upon completion of treatments with steam cleaning (SC) and ultrasonic air humidification (UAH) at different periods, and nanolime (CaLoSil® 5g/L in ethanol).



**Fig B.** Wettability tests carried out on the objects A – C for  $T_p = 21^\circ\text{C}$  and  $RH = 40\%$ ; and proposed kinetic model based on the absorption and migration rates.





**Fig C.** Measurement of residual water on objects (a & b) A, (c & d) B, and (e & f) C with a Protimeter (BLD 2000 Moisture Meter). The results are expressed in % of Water Moisture Equilibrium (% WME).

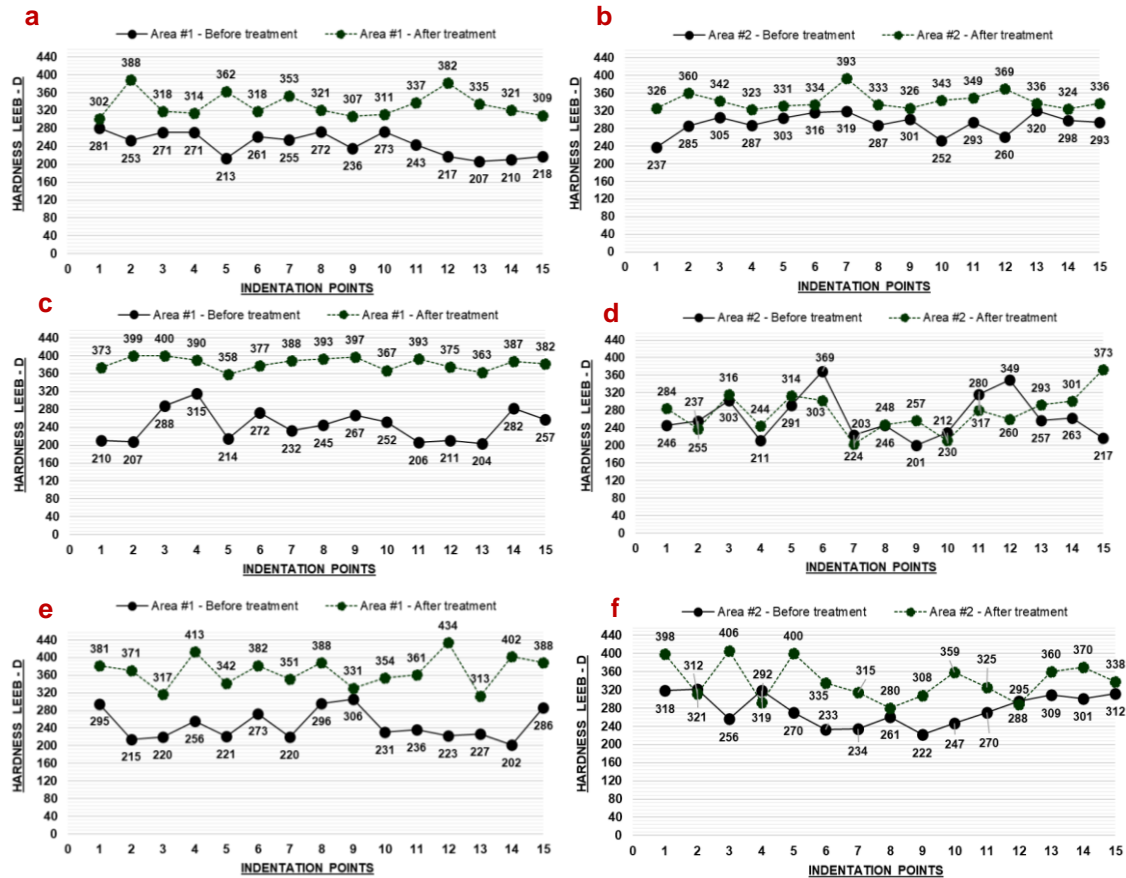


**Fig D. Conditioning and consolidation of objects:** (a) Object A wrapped in Cling Film® with (b) Area #1 left unwrapped; (c) steam cleaning in process and (d & e) object submitted to UAH; (f) Area #1 of Object C before conditioning with (g) steam cleaning and (h) after conditioning; (i) Consolidation of Object A with nanolime being brushed over a japanese tissue; (j & k) Object B consolidated with nanolime being brushed and injected, respectively; and (l & m) Object C consolidated with nanolime being brushed and injected, respectively.





**Fig E. Humidification and curing of treated objects:** (a & b) DIW sprayed over the treated Area #1 of the objects B & C; (c & d) making process of humidification pad using medical gauze swab and hydrogel; (e-g) application of humidification pads over the treated Areas # 2 of the objects A, B, and C, respectively; (h) external and (i) internal views of the curing chamber of the object A; (j-n) and (o-s) details of the curing chambers for the object B and C, respectively.



**Fig F. Surface hardness data** obtained upon completion of tests carried out on (a & b) Object A; (c & d) Object B; and (e & f) Object C