

## **Ancient Greek Kilns: Ceramics, Curves and Chronologies**

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Excavation of kiln sites usually generates excitement for their potential to refine chronologies based on ceramic typologies and to further study organization of craft production and ancient pyrotechnology. The archaeology of Mediterranean pyrotechnologies has benefited recently both from archaeological and scientific investigations. A dataset of over 450 ancient Greek kiln sites from Prehistoric to Byzantine date highlights the stability of design and operation, and the shared knowledge among many pyrotechnological crafts. The kilns vary in size and shape, but share a consistent technological form with an updraft, two-chambered design, consuming biomass as fuel, and able to attain temperatures of ca. 1000°C.

By the Middle Bronze Age ceramic kilns appear fully developed in their standard form. With 60 kiln sites from the Aegean Bronze Age, future research could address the production of the Early Helladic roof tiles of the House of Tiles, the firing structures for the Early Cycladic terracotta “frying pans”, and the products fired in the peculiar Minoan channel kilns. The number and size of kilns per workshop, as well as their geographical and chronological distribution, allow us to address effectively issues of spatial allocation, the size of workforce, the short-term cycle of production and retail with risk-minimization strategies and limited stockpiling.

Although the structure of a Greek kiln underwent little change in form or function throughout the millennia and is of limited assistance with dating, the fired clay walls of kilns and other pyrotechnological structures are ideal candidates for archaeomagnetic dating. An archaeomagnetic curve is currently being developed for Greece. The clay used in the construction of kilns and furnaces, when fired, can “lock in” the magnetic remanence direction and intensity of the Earth magnetic field at the moment of their last firing event. Archaeomagnetic dating is a non-destructive, low cost and quite effective method of dating archaeological structures. The sampling of several kiln sites in Greece and eastern Mediterranean has resulted in establishing accurate Secular Variation Curves (for direction and intensity) for many countries. The contribution of archaeomagnetism to archaeology is multi-faceted and can complement other techniques for constructing chronologies in Greece and the wider Mediterranean.