

QUALITY CONTROL OF MATERIALS IN ANCIENT GREECE USING NON DESTRUCTIVE TESTING METHODS

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Abstract

The NDT can be considered that was first started in the 19th century, but it was developed and established as scientific method (much later) only during the middle of the last century. Although the current way of testing using NDT methods was introduced during last decades for industrial applications, it was known and used for material testing and constructions in far antiquity in Greece.

Ancient Greeks, used strict specifications in their orders and also a well-organized quality control system, based on NDT methods using the five human senses, as can be confirmed by many archaeological findings. It was applied to almost all products (in those times) for the protection of the consumer as well as for the protection of the state from the illegitimacy and bad quality.

Based on historical and scientific information that the archaeological spade and the scientific research have brought in the light, we are led to the conclusion that the ancient Greeks, 25 centuries ago, knew and also applied the qualitative control in the materials they used. In the antiquity the destructive testing was not known. On the other hand, as it is also confirmed by many ancient Greek inscriptions, the NDT should be applied by subjective way, that is to say with the help of the five human senses (sight, hearing, touch, smell and taste). All these specifications belong to the same century, the time period in which in ancient Greece a high development of Greek civilization took place.

These inscriptions are engraved, mainly, in marble plates and many of them have been found in excavations that have been carried out in regions where the ancient Greek culture was developed.

In the present paper the most significant of them are presented:

1) the stele of Elefsis of the 5th B.C. century concerning the manufacture of bronze fittings to be used in the erection of the columns of the Philonian Stoa, a portico placed in front of the much older temple of Elefsis, the well-known Telestirion,

2) the regulation of Athens of the 4th century B.C. regarding the quality control of silver in general, and more specifically the Athenian silver currency,

3) the three inscriptions of Thassos of the 5th B.C. century concerning the quality control of wine and,

4) the inscription of Oropos of the 3rd B.C. century, concerns the testing of the damaged gold and silver objects of the holy temple of Amfiaraou of Oropou.

The conclusion is a message from the distant antiquity: the ancient Greeks used strict specifications in their orders and also strict quality control, because in the absence of control, the specifications have no value and the danger for illegitimacy is so serious that it becomes a threat to the society itself.

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