

STRUCTURAL IDENTIFICATION OF ANCIENT TIMBER ELEMENTS BY MEANS OF ND IN SITU TESTS

Innovations and Benefits - Species identification, mechanical characterization, evaluation of structural residual strength and evaluation of the preservation state of in situ ancient timber elements, also belonging to the historical heritage. 3D modelling and numerical analyses for the safety level of structural elements or structural systems. Expert advice in the selection of the intervention typology.

Use - Evaluation of the mechanical features and of the preservation state of timber elements in situ or in laboratory, by means of ultrasonic velocity and penetration depth measurement, execution of drilling resistance tests and thermal imaging camera.

Numerical analyses and proposal of interventions related to timber structures, even belonging to the historical heritage. Synergic collaboration with the Superintendent for Cultural and Artistic Heritage and the Local Governments.

Applications and ongoing Activities - Structural identification of an ancient timber structure located in Cento (FE) by means of ND in situ tests and numerical FE analyses.

Evaluation of the preservation state of the timber covering structures of Villa dei Misteri in Pompeii by performing visual investigations and ND in situ tests.

Structural identification and evaluation of the residual strength of the timber beams taken from the floors of the Montorio Castle (Monzuno), by means of ND in situ tests.

Destructive and non-destructive tests campaign carried out in the ENEA Laboratory (Brasimone Research Center), on the timber beams taken from the Montorio Castle (Monzuno).



Fig. 1 - Montorio Castle: Resistographic test



Fig. 2 - Pompeii "Villa dei Misteri": Tests with infrared camera

Characteristics: CUSTOM

Thanks to its flexibility, the service can be adjusted to different needs and contexts