

Characterization of materials by non-destructive testing. (G-CARMA)

Characterization of materials by non-destructive testing.

Need or problem that solves

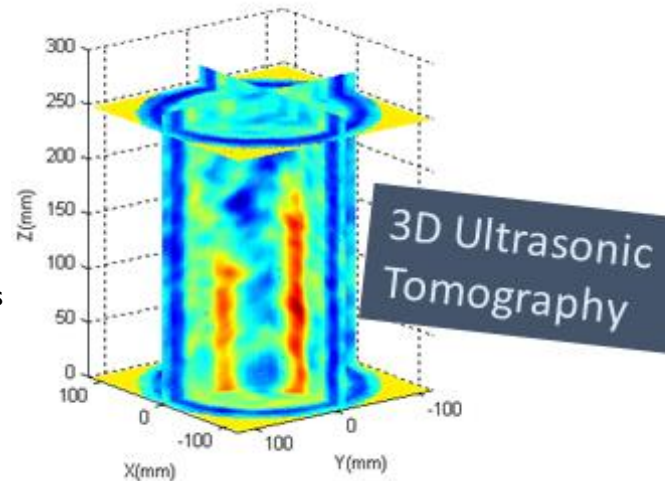
In this service, the characterization of materials can be carried out both in the manufacturing process and during its useful life once it has been put into service.

Materials to characterize: construction materials (any cementitious material such as cement paste, mortar or concrete), wood, stone materials, ferromagnetic materials, ice, among others.

Innovative aspects

Integrated services of:

- Ultrasonic characterization including 2D and 3D image.
- Design of automatic inspection systems.
- Design of wireless monitoring systems with multisensory networks.
- Characterization with georadar.



Equipment

- Ultrasonic equipment: Pundit, Tyco, and low and high frequency transducers.
- Ultrasonic imaging system for cylindrical specimens IMAUSHOR.
- GPR Mala, with a 1.6 GHz and 2.2 GHz antennas.
- Reflex 3D GPR software.
- Own differential pressure monitoring system, PressureNet.
- Two 8-channel monitoring systems IMC SARP MK2.1 from Álava Ingenieros.
- Own software for simulation of ultrasonic transmission and programming of WSN.
- Automatic accelerated degradation systems.
- Thermal conductivity meter.
- Climatic chamber.
- Concrete compression testing machines.
- Laser vibrometer PSV-400.
- 3D printers and associated software.

Contact

G-CARMA.

Instituto de Tecnologías Físicas y de la Información
"Leonardo Torres Quevedo".

José Javier Anaya Velayos.

jj.anaya@csic.es

www.itefi.csic.es/es/daend/g-carma/presentacion

KEYWORDS

- Georadar.
- Acoustic tomography.
- Wireless sensor networks.

POTENTIAL END USERS

Companies and institutions interested in the characterization of materials through non-destructive techniques for the restoration and conservation of cultural property.

TECHNIQUES

- Acoustic tomography.
- Wireless monitoring with sensor networks.
- Photogrammetry for documentation of materials and techniques.
- Information virtualization for 3D representation.
- Structural analysis.

