LABORATÓRIO NACIONAL DE ENGENHARIA CIVIL

UNIVERSIDADE NOVA DE LISBOA

CHARACTERIZATION TESTS FOR INSULATION BOARDS MADE FROM CORN COB AND NATURAL GLUES

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COST FP1303
Performance of bio-based building materials

CONCEPT

- Development of new solutions for building materials and products more environmentally friendly and efficient
- Use of local agricultural wastes

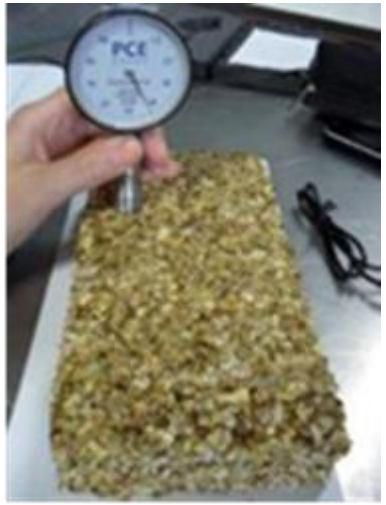
METHODOLOGY

- Manufacture of boards based on corn cob and natural glues with different compositions and processes: type of glue, dimension of the corn cob particles and features of the pressing process
- Characterization of the boards by physical and mechanical tests to assess their potential as thermal and acoustic insulation material to use as coatings or intermediate layer on walls, floors or false ceilings

SOME TESTS AND RESULTS

Thermal conductivity

Dynamic modulus of elasticity



Surface hardness (durometer and sclerometer)

Flexural resistance

Compressive resistance and resilience

These boards have potential as thermal (and acoustic) insulation material

They would be more adequate for application in dry indoor conditions (due to sensitivity in higher humidity environments and biological susceptibility)

THANK YOU FOR YOUR ATTENTION !