

**Roof tiles manufacture. Inter-relationships between raw materials selection, pre-treatment and processing parameters with microstructure and gelivity.
Resource and environmental impact optimization.**

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The project aims to define in detail the relationship between raw materials, formulation, firing process, and resulting microstructure (in terms of water saturation, pore size distribution, etc.) in roof tile production of the Cotto Possagno Industries. The resulting parameters investigated by an extensive experimental design approach will be related to the mechanical resistance of the tiles to freeze-thaw cycles, which is the major factor decreasing the durability of the tiles in temperate and cold climates.

The research will start analyzing the current production cycle and characterizing the recent production, though it is planned to expand the experimental characterization to the use of alternative materials in the light of circular economy and energy saving procedures.

