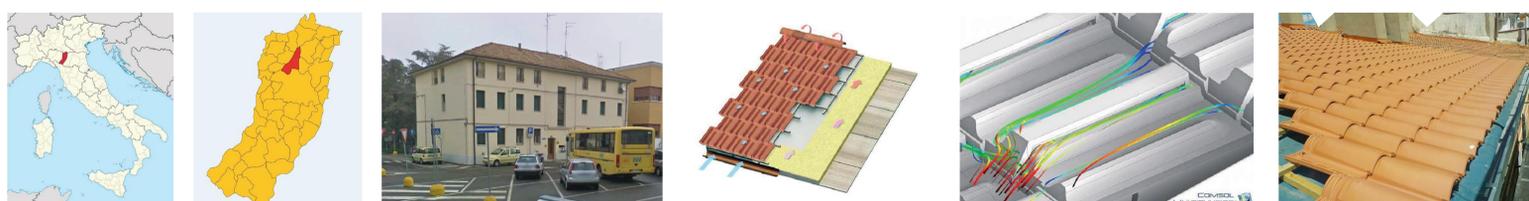


lifeHERO

TILE

High Energy savings in building cooling by **ROof TILES** shape optimization toward a better above sheathing ventilation



PROJECT FRAMEWORK

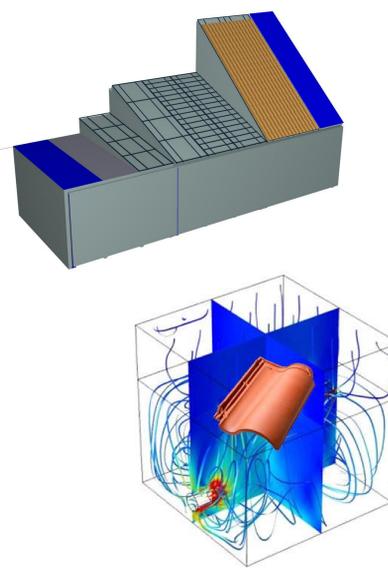
Life HEROTILE is supported by the European Commission through the Life programme with a grant up to 1.5 million euro under contract number LIFE14 CCA/IT/000939. The project started on the 1st August 2015 and has a duration of 3 years with a total budget of 2.5 million Euros. The research will facilitate the development and implementation of energy savings approaches, mainly at Mediterranean Region, and will contribute to climate change mitigation with technologies and systems suitable for being replicated, transferred or mainstreamed.

THE CHALLENGE

In Mediterranean regions the solar radiation in summer cause an overheating of the building envelope (roof and walls) and then of the indoor and the need for air-conditioning. Passive systems to limit solar effect mainly consist of ventilated facades and roofs. Roof is the most exposed element to solar radiation and this causes excessive heating of the attic and other rooms, so vented tiled roofs could be considered the best solution for passive thermal building insulation in hot and mild climates.

MAIN OBJECTIVES

- Realize two pilot plants to produce two new types of roof tiles (Marseillaise and Portuguese tiles) with a shape characterized by a higher air permeability through the overlap of the tiles, and then a better energy performances by passive disposal of the solar radiation through under-tile ventilation;
- Two real scale test buildings, with seven different roofs each, will be made to test new tile performances in two different location (Italy and Israel) and two demonstrator buildings located in Mediterranean regions (Italy and Spain) have been chosen to test and quantify benefits of new tiles;
- On the basis of experimental data, will be realize in addition a practical and simplified free-license software for architects and technicians – SENSAPIRO Software ENergy SAVings PItched ROofs, able to predict the energy performance of the same building in changing only the roof configuration.



EXPECTED IMPACTS

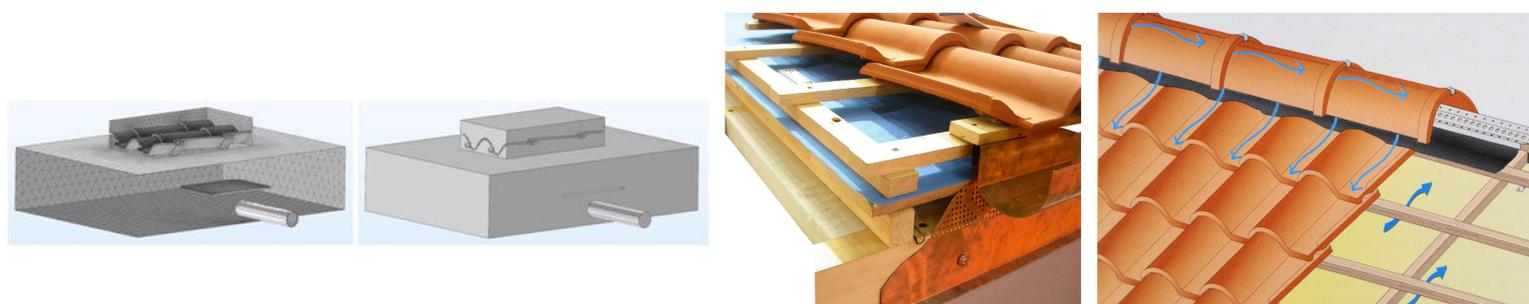
Considering that the tile types to re-design and produce in the pilot plants cover more than 60% of European roofs, LIFE HEROTILE will cover a good market share, above all in the Mediterranean basin Countries with 130 million of population in South Europe correspond to almost 5.2 billion of square meters of house space.

Reduction targets (South Europe) :

10% Greenhouse gas emissions - 50% Carbon footprint of building space cooling (in comparison with standard pitched roof) - 5% Air pollution - 5% Electrical power for air conditioning in urban area - 25% Maximum under-tile air temperature - 50% Specific cooling power.

COUNTRIES

Italy, France, Germany, Spain and Israel.



PARTNERS

