



Manufacturing process of laminates

Integrating VIP in a window façade system



# INNOVIP

## Consortium

### Coordinator

Forschungsinstitut für Wärmeschutz e.V. München (FIW München), Germany



### Project partners

Bavarian Research Alliance GmbH, Germany



Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V., Germany



Hanita Coatings RCA Ltd., Israel



ITeCons - Instituto de Investigação e Desenvolvimento Tecnológico em Ciências da Construção, Portugal



Laboratoire national de métrologie et d'essais, France



L'Urederra, Fundación para el Desarrollo Tecnológico y Social, Spain



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Nordisk Perlite ApS, Denmark



Oxford Brookes University, United Kingdom



SOPREMA, France



Technología Navarra de Nanoproductos S.L., Spain



va-Q-tec AG, Germany



## Project profile

**Project:** INNOVIP (Innovative multi-functional Vacuum-Insulation-Panels (VIPs) for use in the building sector)

**Funding programme:** The INNOVIP project receives funding from the European Union's Horizon 2020 research and innovation programme.

**Project number:** 723441

**Project duration:** October 2016 – September 2019

**Total budget:** EUR 5.9 million (EUR 4.9 million EU funding)

### Coordination & technical information

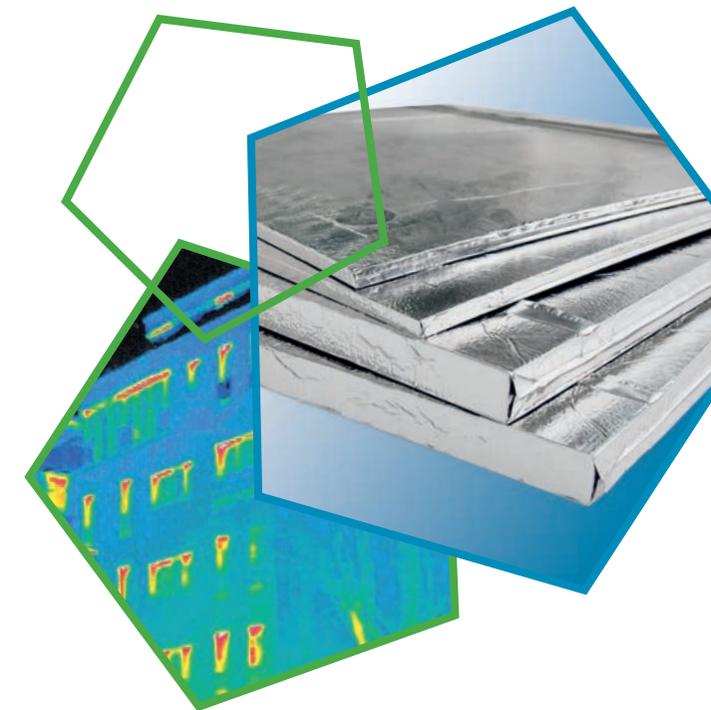
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Innovative multi-functional Vacuum-Insulation-Panels (VIPs) for use in the building sector



Credits: FIW München, Hanita Coatings, Nordisk Perlite ApS, va-Q-tec AG



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 723441



Perlite as the filler for vacuum insulation panels



Use of VIP for heat insulation on exterior walls



Panel assembly

## Efficient building insulation with vacuum insulation panels

Buildings account for a particularly large proportion of global CO<sub>2</sub> emissions (around one-third)<sup>1</sup>. As a consequence, the EU Commission's 2050 roadmap targets a reduction in the CO<sub>2</sub> footprint of private and office buildings in Europe by 80% compared to 1990 levels<sup>2</sup>. Effective insulation systems in buildings will play a key role in achieving these targets.

Vacuum insulation panels (VIPs) are particularly promising in this regard. Evacuated materials can be extremely good insulators (far better than their non-evacuated equivalents) and panels based on them offer highly effective and space-saving solutions. Compared with conventional insulating materials however, VIPs tend to be relatively costly and difficult to use. They also lose some of their exceptional insulation properties during service life and there is scope to improve their sustainability.

The EU project INNOVIP will progress VIP technology by addressing these key issues. The project will use innovative technologies and develop new materials, as well as improve production processes. Using a new type of protective envelope and alternative fillers – for example perlite – the INNOVIP consortium is aiming to make this highly-efficient solution more competitive.

<sup>1</sup>IEA "Transition to sustainable buildings" ISBN: 978-92-64-20841-2

<sup>2</sup>COM (2011) 112 final

## Objectives of INNOVIP

The EU project INNOVIP aims to achieve a fundamental improvement in vacuum insulation panels for building insulation. Particular attention will be given to efficiency, price and service life. The solutions developed within the project will be flexible and suitable to both new and existing buildings (either internally or externally). In the long term, it is anticipated that these solutions will contribute significantly to reducing building CO<sub>2</sub> footprints.

### The new VIPs are anticipated to offer the following features:

- ◆ Thermal performances improved by at least 25%
- ◆ Manufacturing costs reduced by 30%
- ◆ Service life increased to approx. 50 years
- ◆ Simplified handling and assembly
- ◆ Numerous additional features including anti-mould coatings, increased fire resistance and improved air quality in buildings
- ◆ Improved sustainability as a consequence of lower energy consumption throughout product life cycle and use of recyclable materials

## Benefits for society

### Market breakthrough for vacuum insulation panels

Conventional vacuum insulation panels are still niche products in part due to their cost. However, the more economical and higher-efficiency panels developed in INNOVIP will facilitate improved mass-market applications.

### Reduction in CO<sub>2</sub> footprint

The EU Commission is requiring dramatic improvements in the CO<sub>2</sub> footprints of buildings. Existing properties, in particular, are often constructed to poor standards of energy efficiency and require extensive upgrading. For example, some 40% of buildings in the pre-1960 European housing sector were constructed without any energy regulations.<sup>3</sup> INNOVIP products will be highly applicable to thermal refurbishments within this sector.

### Creation of new jobs

The research findings from INNOVIP should allow the creation of new jobs, primarily in construction companies and the skilled craft sector. The demand for skilled workers to construct new plants, satisfy the growth in production volumes as well as conduct research and testing will continue to grow steadily leading to an expected 5,000 new jobs throughout Europe in the next five years.

<sup>3</sup>Building Research and Information" 37(5-6):533-551 · November 2009

