ENERGY EFFICIENT, RECYCLED CONCRETE SANDWICH FACADE PANEL

ECO-SANDWICH

ECO-SANDWICH is a ventilated prefabricated wall panel utilising recycled of construction and demolition waste (CDW) and mineral wool produced using innovative and sustainable Ecose® technology for reduction of primary energy consumption in building stock. It tackles three major environmental problems: reducing greenhouse gas emission by energy efficiency of buildings, increased resource efficiency through the use of CDW in panel manufacturing and minimising the use of regulated chemicals like phenol and formaldehyde from the insulation material production process. The aim of the ECO-SANDWICH project is to modernise the production line as well as to develop marketing strategy for the introduction of a new, eco-innovative product. First application of the ECO-SANDWICH panels will be done at the university campus in Koprivnica. The project was submitted by a consortium which promotes research and development in private companies and research institutions. The replication of the project is foreseen in the South East Europe, new EU member states (Hungary, Slovenia, Bulgaria, Romania) and Croatian neighbouring countries (Bosnia and Herzegovina, FYR Macedonia, Serbia, Montenegro, Kosovo).

Benefits

ECO-SANDWICH uses recycled resources to create a product which decreases its environmental impact and increases energy efficiency of buildings.

Results

- The ECO-SANDWICH wall panels - will become a recognised construction system used to build very low energy houses on a large scale. - will be a scalable wall panel system that is sustainable and affordable for its end users throughout the life-cycle.
- Developed marketing strategy for the introduction of ECO-SANDWICH, an innovative, environmentally friendly and sustainable product will ensure the installation of - 75300 m2 of ECO-SANDWICH panels installed in Croatia - 630500 m2 of ECO-SANDWICH panels installed in replication market (South East Europe)
- When the predicted amount of ECO-SANDWICH panels are installed in Croatia, - 7328.20 t (16 % of concrete CDW) and 3664.10 t (23 % of brick CDW) of recycled crushed brick aggregates will be recycled.
- A performed life-cycle analysis indicated that by installing the ECO-SANDWICH wall system instead of wall panels with 10 cm EPS core insulation - 43 % of total energy used during 50 years is saved, while CO2eq emissions are reduced for 34
- Natural landscape will be protected by reduced CDW disposal and natural resource acquisition.
Partners and coordinator

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<td>SVEUCILISTE U ZAGREBU GRADEVINSKI FAKULTET</td>
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<td>BETON-LUCKO LTD</td>
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<td>KNAUF INSULATION INDUSTRIJA TERMICKIH AKUSTICKIH PROTUPOZARNIH IZOLACIJA DO</td>
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Budget

Overall budget: 925.104,00 € (EU contribution: 50,00 %)

In brief

Sector: Buildings and Construction
Duration: 01/09/2012 to 31/08/2015
Contract number: ECO/11/304438
Website: http://www.grad.unizg.hr/eco-sandwich

Tags:
- recycling
- textile
Media coverage

- **ECO-SANDWICH® Day: Energetska učinkovitost, održiva gradnja te korištenje recikliranih resursa u Republici Hrvatskoj** [6]
  Poslovni.hr - 08/05/2014
- **Stiže Eco-Sandwich za energetsku obnovu zgrada** [7]
  Poslovni Dnevnik - 19/03/2014
- **Lideri hrvatskog zelenoga gospodarstva** [8]
  Hrvatska radiotelevizija - 17/05/2013
- **Nagrade GREENOVATION 2013. liderima zelenog gospodarstva** [9]
  Večernji list - 17/05/2013
- **Nagrade GREENOVATION 2013. liderima zelenog gospodarstva, Poslovni.hr među dobitnicima** [10]
  Poslovni Dnevnik - 17/05/2013
- **Prijave za CIP Eko-inovacije ističu početkom rujna** [11]
  Poslovni Dnevnik - 15/05/2013
- **Stiže Eco-Sandwich za energetsku obnovu zgrada** [12]
  Limun.hr - 18/04/2013

Related projects

- [CIARM] [13] Construction Industry Apllications using Recycled Materials
- [EAMT] [14] ECO ALTERNATIVE MORTAR THERMIC
- [ECOWALL] [15] ECOWALL - NOVEL COMPOSITE CONCRETE INSULATED BUILDING MATERIALS OPTIMISED
- [INSULATFH] [16] Enhanced insulation in timber-frame housing using recycled materials
- [GREENPIPE] [17] Green trenchless drinking water pipe replacement
- [ECOPLASBRICK] [18] Innovative recycled plastic based panels for building field
- [REBRICK] [19] Market uptake of an automated technology for reusing old bricks


Links