



## ECOPLASBRICK

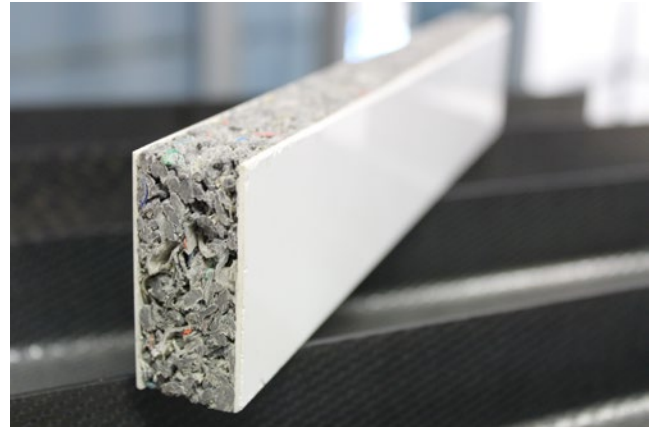
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### **INFORMATION ON THE ECO-INNOVATIVE SOLUTION PROVIDER**

The solution was developed within the EU Eco-Innovation program and finalised in 2014.

The partnership consists of the Italian Centro di Progettazione, Design e Tecnologie dei Materiali, Italy, and the partners, Pandora Group, Italy, Consorzio TRE, Italy, Motulab s.r.l., Italy, Acciona Infraestructuras S.A., Spain, Albanian Constructors Association, Albania.

### **SHORT DESCRIPTION OF THE ECO-INNOVATIVE SOLUTION**

ECOPLASBRICK is the first patented recycled plastic based sandwich panel suitable for the building sector. ECOPLASBRICK is made of a mixed plastic waste (normally destined for landfill or incineration) and polyurethane core with two skins of gres, aluminium, fibreglass, plasterboard or other materials. ECOPLASBRICK can be used for interior (raised floor, partition walls) and exterior (ventilated facades) purposes. The innovation consists of an optimized industrial manufacturing process in which plastic waste in the form of densified flakes and polyurethane precursors are mixed and moulded by compression moulding technology. The technology owner offers know-how on the production of the panels and the correct mix of materials so that the production can be implemented at any industrial site.

### **INDUSTRIAL SECTOR – MARKET SEGMENT AND ACTUAL APPLICATION IN INDUSTRY**

15-17 Construction

### **INDUSTRIAL CLASSIFICATION - NACE CODE;**

22 Manufacture of rubber and plastic products

## 1. DESCRIPTION OF ECO-INNOVATIVE SOLUTION

### Technical aspects of the eco-innovative solution

The core element of the new technology is the know-how in the production of the new panels offered by CETMA. The optimized industrial manufacturing process will be transferred and such know-how consists of:

- Manufacturing the panels without the need to purchase any special machinery. The production process is very simple (moulds manufactured or adjusted by Motulab). This mould allows the manufacturing of several panel sizes thanks to the relative movement of its parts.
- Considerable versatility with respect to the skins that can be used
- The thickness and the density of the panel can be adjusted depending on the final application, standard size 60x60cm. The panel can be manufactured in a very large size (up to 1x2.5 meters), good thermal and acoustic insulation properties.
- The core of the panel is partially made of mixed plastics (densified flakes and polyurethane precursors), originating from industrial and municipal waste such as polyethylen bottles, shoppers, packaging and yoghurt packaging. Typically this secondary raw material (waste plastic) needs to be collected (municipal collection system) separately or purchased from a waste management plant
- The outer skin may consist of different materials; further customization is possible thanks to many different polyurethane formulations. The panels will not corrode and require little maintenance, they are 100% water-proof, they are fire retardant and can be formulated to be fire resistant.

### Economic and environmental benefits of the eco-innovative solution

The cost of a new production line is around €500,000 with a production capacity of 8.,00 panels/year (60x60). However existing moulding machinery can be used without major investment in capital costs. Economic benefits depend on the cost of supplying the secondary raw-

materials, e.g. waste plastic, which can be purchased from a waste management company or waste collection system. Environmental benefits consist of substituting raw virgin plastic materials with waste plastics; no particular energy or water savings during processing compared to state of the art technology.

## 2. AVAILABILITY OF THE ECO-INNOVATIVE SOLUTION AND BUSINESS PARTNERSHIP

### Market readiness, Trade mark, existing market coverage, commercialization strategy

The solution is currently available in the Italian market from Motulab s.r.l and The Pandora Group .

There is no trade mark available.

### Requirements to adapt the solution to the local market and potential applications/market size

There are no particular infrastructure requirements, waste plastic availability is required.

### On-site after-sales services support and the technical assistance requirements

The technology owner can provide the following support:

- Sampling
- Technical support for the installation of ECO PLASBRICK panels for specific applications
- Technical information to companies interested in the implementation of ECOPLASBRICK production processes

### Targeted local business partners

Industrial producer of panels; construction industry (e.g. ventilated facades

### Type of local business partnership sought

Licencing