



Spin-off from the VUB Mechanics of Materials and Constructions Department.

Established in 2002.

### Milestones

- **2002:** Contract with VUB signed.
- **2004:** Capital increased by VUB BI<sup>3</sup>Fund.
- **2005:** PatStone Los Angeles established.
- Ongoing research to improve quality.

### Symbion NV

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### Building (in) the future

IPC, the new **"Inorganic Phosphate Cement"**, was developed after years of scientific research within the **Mechanics of Materials and Constructions Department** in the Faculty of Applied Sciences, under the impetus of Prof. Dr. ir. Jan Wastiels and Prof. Dr. ir. Georges Patfoort. This innovative material, which is traded under the name of "vubonite" or "IPC-Pro", is patent-protected. In 2002, with an eye on the industrial valorization of the technology, a collaboration was concluded between the Vrije Universiteit Brussel and the NV Symbion.

As a spin-off, Symbion has a **worldwide, exclusive license on the IPC technology**, with the right to grant sub licenses. This technology is traded under the brand name vubonite. Vubonite is an **ecological, inorganic, nonalkaline resin** that is prepared by mixing a powder and a liquid. The processing time can be adjusted and varies from a few minutes to approximately one hour. The result is a ceramic material with a threedimensional network structure that is strong, durable and fire-resistant.

The material is an **outstanding adhesive for a whole range of substances** and can be reinforced with standard glass fibres, among other things. Vubonite can therefore be used to construct light, high-quality composite constructions in the same way that polyester can, but without the latter's known disadvantages. See photo 1.

**No solvents** are used, the processing does not generate any noxious smells and the equipment can be easily cleaned with water.

Vubonite also exhibits **good resistance to external influences**, such as acid rain. The thermal processing point of the material is above 1000°C which means that many technical applications are possible for which asbestos was formerly used.

The vubonite material is completely **fireproof and incombustible**. No fire retardant additives are needed, thanks to its totally ceramic nature: vubonite has been awarded the best fire resistant Euroclass A1 for construction products and building elements following the new European fire standards (EN 13501-1). It melts only far above 1000°C. See photo 2.

**The industrial applications of the technology are innumerable**. Whenever resistance to high temperatures, combined with light, supporting structures, is required, vubonite enters the picture. Applications range from fire protection of weight-bearing structures to the manufacture of light, non-flammable structures for the transport industry, fire-resistant panels and components for induction ovens. Vubonite also has applications in the art world. See photo 3.



Photo 1: Newly developed impregnator machine which can impregnate several glass mats at the same time, having only a very small quantity of matrix "work in progress". Using a unique texture surface on the pressure rolls, the equipment has a production capacity of 400 m<sup>2</sup> per hour, and more.



Photo 2: The vubonite material is completely fireproof and incombustible.



Photo 3: Decoration of the main desk in the health centers of luxury hotels in Slovenia and Italy. © Ivan Kisovec.

**'Currently we are the only player on the market that produces an absolutely incombustible, stable and lightweight glass fiber composite that is environmental friendly as well!'**

Jan Vanherck, CEO