

Precast Concrete Façades Bring Buildings To Life

Precast construction technology represents Finnish high-tech know-how at its best. The country's professionalism in precast technology originates from its extensive application of this construction method. Testing innovative solutions and developing new products has been possible due to a solid home market. In addition to increasing the speed, cost effectiveness, and quality of construction, precast technology offers developers and contractors endless possibilities in terms of look and design.

Elematic, Finland's leading supplier of precast concrete production technology: plants, production lines and machinery has much to offer when it comes to precast concrete façade manufacture.

Constructions for Harsh Weather Conditions

Precast sandwich panels enable the strict requirements for thermal insulation to be met. Concrete structures have great insulation qualities, keeping the building warm in cold weather and cool when it is hot, stabilizing the moisture and temperature inside.

For the precast façade, a calculated age can be defined. In real life, and in the conditions that the material is designed for, a precast façade can last up to 200 years. Precast façades tolerate harsh weather conditions, including sub-zero temperatures combined with salt strain, and long rainy seasons.

Endless Possibilities with Different Surface Treatments

To complete the desired look on the four precast wall panel types — sandwich, plastered sandwich, inner layer, and cladding panels — there are virtually limitless possibilities for the surface.

The cement can be white or grey, and the color and size of the aggregate certainly make a difference. Different colors, pigments, and paints can be added. The shape and surface of the precast concrete moulds have also have an effect on the look - the mould can be made of timber, steel, plastic, rubber, or fiberglass with each material giving a unique finish.

Concrete facades allow for different surface treatments: wood or steel trowelling, rolling, brushing, and several types of washing can be carried out when the concrete is fresh. Precast walls with graphic concrete patterns (a Finnish innovation) can be manufactured by placing a printed membrane into the mould.

Polishing, hammering, acid etching, and sand blasting can be applied to hardened concrete. The precast walls can also be coated with plaster or paint, brick, ceramic tiles, or natural stone.

Eye for Architectural Details

In addition to the surface finish, there are several ways to give the façade a unique look. In plastered sandwich walls, the façade seams are not visible. Joints can be hidden by designing the positions of windows, balconies, and doors so that they break the lines, utilising the discontinuities. The joint form and profile can bring the desired look, and horizontal or vertical lines give the façade character.

With no limitations to the shape of the molds — even curved walls can be manufactured - an industrial building method such as precast concrete is superior to any other façade

construction when it comes to freedom of design choice. Elematic continuously shares knowledge in order to ensure that architects, designers, and the building industry around the world are aware of the effective ways to manufacture quality precast concrete facades with an outstanding look.

Some examples of successfully installed and functional façades include:

- A black precast wall inside with a surface shaped for an optimal acoustic experience in a music hall in Kristiansand, Norway
- Sandwich wall panels used as facades in wood drying plants with a relative humidity of 100% inside the building
- Massive wall panels used as acoustic barriers with a surface designed to absorb traffic noise

Elematic invests heavily into precast concrete research and new applications which enables the company to offer design software, machinery and automated solutions that can be tailor made to customer requirements. Technical and service support is offered via their 24-hour global online Help Centre. Customer support for South Africa and the rest of Africa is serviced from their Warehouse based in Dubai.