



project file

## Glassfiber reinforced plastics in watertreatment plant

Morlanwelz - Belgium

Water purification through a filter is a biological treatment method used for filtering heavily polluted substances . The waste water is spread over the filter bed , and passes through a porous, micro- bacterial coating . On the filter bed, the active micro- organisms fixate on the porous layer . The waste water is distributed evenly over the filter bed. At the same time the filter is ventilated and aerated. Because of this abundant ventilation on the top and bottom of the filter bed, the aerobic microbial flora will develop which results in a slow percolation of the filtered water. Thanks to this efficient oxidation, the waste water is filtered and purified .

For the water treatment plant in the municipality of Hainaut Morlanwelz (operated by the intermunicipal IDEA ) Vink realized in the spring of 2012 and in the autumn of 2013 a fine mesh filter bed with a 19 mm diameter ( 283 m<sup>2</sup> ) . The load requirements could be labeled as 'heavy ' : not less than 3000 kg / m<sup>2</sup> or 849 TON should be evenly distributed over the surface of the floor guaranteeing a minimum pass of 50 % .

The filter is located at 1m height and rests on concrete columns of 20 cm diameter. To meet these requirements , a structure of GRP profiles was mounted on top of the concrete columns . There upon, a GRP pultrusion grid ( Vikupul ) was placed . On this grid , 3m of filter material is distributed. Via a spray system, the water is distributed over the entire surface of the filter bed.

### Materials

The GRP pultrusion grids are composed of high-quality composite material and are extremely resistant to corrosion. Consequently, they were the perfect solution for this application in the water treatment plant of Morlanwelz .

