

## Company news

### TECTON GmbH built the special brick plant in St. Petersburg/Russia

The customer **OAO Pobeda – LSR**, one of the leading manufacturers of the building materials in Russia, decided to realize a high-tech plant for the production of clay pavers, facing bricks in various shapes, as well as special shaped bricks and split tiles. After consideration of technical solutions from different tender's participants, Pobeda-LSR decided to sign the contract with Tecton GmbH Keramikanlagen, which has offered the concept of combining the different technologies for the production of the clay paver brick, facing bricks including the accessories and the split tiles.

For the elaboration of the planning and manufacturing of the equipment, the long lasting experience and expertise of Tecton GmbH and his partners were of great use. All **Tecton GmbH partners** had big contribution during the realization of this project :

<b>Instalat b.v.</b>	Tunnel and shuttle kiln manufacturer
<b>United Symbol s.r.l.</b>	Handling technology and sorting, packing plant)
<b>CeramDry GmbH</b>	Chamber dryer, tunnel dryer, sanitary ware drying technology
<b>Muenstermann GmbH</b>	Manufacturer of the tunnel kiln and dryer car haulage system machinery,

The pavers are fired to a water absorption under 2 %. The firing temperature is different for the various clay mixtures and colors. The strength of the brick is over 70mPa. The products are mainly used for road and terrace construction for gardens, squares, villas, residential areas and municipal projects. They are quite popular both in the home market as well as abroad. Some types of bricks are designed to have an antique look. This appearance can be achieved by tumbling the brick after firing or by a thorough reducing atmosphere at the end of the firing zone.



#### Description of the plant

**Reference size: paver size 200x100x50 mm, fired weight 2.35 kg with a 5 mm chamfering.**  
**Capacity: 45 510 000 paver per year, or equal tons in various shapes and accessories**  
**Standard: GOST 530-2007 and DIN EN 1344**

**Production working time: 2 shifts of each 8 hours a day and 7 days a week**  
**Operators within the production plant: 6**  
**Total heat consumption for the reference size is under 2 000 kJ/kg-fired**

The production line includes all necessary equipment from clay mixture transport out of the clay preparation up to the packaging line for the finished product.

**Raw material:** The raw material, which is continuously supplied by the client at an appropriate moisture, is filled into the circular screen feeder. In this device steam is added to the mixture in order to obtain the right extrusion properties.

#### Extrusion/cutting

The extrusion line consists of 2 separate extrusion and cutting lines. One line is mainly for the shaping of paving bricks and different kinds of the facing bricks. The second extrusion line is developed for the production of split tiles and special shaped bricks. The split tile line is engineered in such a way that the dimensions of the split tiles can be quite different to those mentioned in the list of products. A combination of an universal and Multi-Wire cutters, including deep and shallow chamfering devices is installed.

At the extrusion line for paving and facing bricks, the sand blasting device as well as a composition of several texturing devices to treat the surface and texture of the bricks are installed. The different devices will allow Pobeda LSR to produce up to 15 types of different texturing bricks.

On the extrusion line for split tiles the texturing of the surface is done by special lateral conveyors with defined designs which allow a changing picture of the surface textures. A special cutter including chamfering device is installed here.

### Dryer handling machinery

The above mentioned extrusion lines feed one main dryer handling system with wet and dried sides. The fresh shaped products are placed on dryer frames of 2x2 m. This gives the flexibility to select the direction of the shapes in the dryer for an uniform homogeneous drying result.

Between dryer and loading station of the kiln cars 3 separate lines for the transport of the products are installed .

- One Line for the transportation of the dried brick's, which can be loaded on the kiln cars automatically.
- One Line for the transportation of the dried split tiles, which can be loaded on the kiln cars automatically.
- One Line for the transportation of the special shapes bricks, for the manual loading on the kiln cars.



### Glazing / Engobing / Setting

On the split tile line 3 different glaze cabins are installed. These cabins can change according to the treatments and requirements which should be applied. There are 2 separate kiln car setting machines over 1 track, one setting machine for loading of dried paving or facing bricks, the other one for split tiles.



**Hans Liefink**  
Shareholder of Tecton  
GmbH



### Tunnel kiln

The tunnel kiln – with low setting - is 156.60 m long and has a firing channel width of 6.70 m. At the entrance the kiln is equipped with an extra sluice. The firing channel height is 1.085 m and is designed for firing temperatures of 1200 degree Celsius. The firing equipment consists of:

15 groups of each with 10 high velocity burners in the preheating zone of the kiln / 16 groups of each with 19 burners of which the last 2 burner groups are additionally equipped for intense flashing and reduction firing.

The uniformity of temperature in the firing zone and Over the whole kiln section is <10 degree Celsius.

**Maurizio Manzini and Mehrdad Vasigh** Shareholders of Tecton GmbH



The preheating zone is equipped with a big amount of high velocity burners in order to obtain a very flat and smooth firing curve in the temperature interval between 750 - 900 degree Celsius.

A flat temperature curve in this section of the kiln guarantees that the organic components can be fully fired out of the products and no black cores will remain. Sufficient space as well as the required kiln car haulage technology is planned, in order to provide a subsequent installation of a shuttle kiln for the reduction firing for further special products, and for so called blue damping -firing, This is one of the specialty of Instalat b.v. A holding room is foreseen to store the dry brick loaded kiln cars during the night.

### Kiln car unloading, packing plant

There are 2 kiln car unloading machines over 2 separate tracks for the kiln car unloading of brick products and split tile products, including the sorting and packing lines. The packing line is consisting of silicon-spraying cabin, horizontal and vertical strapping machines, and plastic foil machine including wooden pallets feeder.

### Production Tracking System - Visualization

The whole production process including all necessary production data and dryer and kiln car tracking system is visualized and logged on a central Operator PC in the main control room.