Refractory Systems for the Ceramic Industry
Wall, roof and tunnel kiln car systems

for tunnel kilns

Tunnel kiln wall
A well-insulated wall system is an essential condition for the economical operation of the tunnel kiln. The optimum kiln wall is as thin as possible, providing effective insulation and composed of large-size units.

High wages demand short construction times and therefore large-dimensioned, lightweight units which can be assembled quickly on site.

Tunnel kiln car
The kiln car, due to the constant heating and cooling, is the component in the tunnel kiln exposed to the most severe stresses. In BURTON tunnel kiln cars all decisive demands are taken into account:

- lightweight, energy-saving construction and material selection
- long service life
- Airtightness of car interlock and labyrinth

Low weights help to save energy costs up to 30%.

In consultation with the customers BURTON develops computer-optimized systems. According to the problems arising individual and patented tunnel kiln solutions are available.

Tunnel kiln suspended roof
The decisive factor for a good roof is its airtightness. In the overlapping unit layout of the suspended roof BURTON has made an outstanding contribution to technical progress. A modern tunnel kiln suspended roof today has to satisfy high demands:

- low weight for inexpensive construction
- good insulating effect despite low construction height
- large-size construction units in dry-pressed or cast design for rapid assembly of an airtight suspended roof
- use of optimum materials for corrosive kiln atmospheres such as sulphur, salt etc.

DIN EN ISO 9001 certified since 1994
The insulating course is applied.

The patented "Universal Border Block" of BurcoLight is installed.

The car core is filled with a high-quality insulating material and levelled.

The BURTON lightweight construction systems permit the completion of the tunnel kiln car in the shortest possible time. The assembly is easy, maintenance presents no problems and is inexpensive.
The reduction of energy costs is a very acute problem at the present time. It is extremely important to keep energy consumption under control and at a minimum. This is particularly required in the case of tunnel kiln cars because of their continual heating and cooling. With the development of the new BurcoLight qualities BURTON has taken account of these requirements.
Energy saving in tunnel kiln cars

by the new

BurcoLight qualities

- **low raw density** of ~1.3 to 1.5 kg/dm³
  thus resulting in a smaller load imposed on
  the chassis (lower border blocks approx. 35 %
  less in weight)
- **low thermal conductivity**
- **lower energy costs,**
  **up to ~30 % less** (depending on the type of
  tunnel kiln car and the tunnel kiln temperature)
- **lower undercar temperatures**
  due to the improved insulating effect
- **low thermal expansion**
  of 0.33 to 0.35 % at 1000 °C (DIN 51045)
- **excellent thermal shock resistance**

Opportunities for the applications of BurcoLight:
- for renovations of the car fleet
- for re-equipment in the lower border zone and for
  cover tiles in areas with low applied load Burcotop
  125 H can be substituted for BurcoLight H
- highly suitable for short periods of operation
Kiln furniture

Optimum kiln furniture ensures uniform firing and hence optimum product quality. BURTON offers you suitable designs for industrial practice for the most economical and scrap-free production.

The development of the most up-to-date CAD technology enables individual requirements by customers to be taken quickly into consideration.

The modern production technologies permit lightweight, thin kiln furniture of uniform wall thickness for stress-free, rapid heating and cooling, which is an essential condition for a long service life.

The dry pressing method enables high dimensional accuracy, a homogeneous texture and good hot bending properties to be obtained. The manufacture of large production quantities is possible in a short time.

**Dry-pressed and plastic kiln furniture for the ceramic industry**

- Draught hole blocks
- Viaduct blocks
- Support structures for side firing
- Support blocks and perforated slabs

Austral Brick, Australia | Side-fired tunnel kiln car with patented cordierite setting beams

Kiln car structure with supports and perforated slabs for the firing of vitrified clay pipes
Tunnel kiln car systems and kiln furniture for the firing of clay roofing tiles

- U-cassettes / Ribbed cassettes
- Mono-cassettes
- Setting frames for fast firing
- SiC systems
- Setting slabs and perforated slabs
- Patented loadbearing beams
- Supports and support pipes

Nibra, Großsammensleben | Tunnel kiln car for H-cassettes

H-cassettes in pressed design

Röben Works, Brüggen | Tunnel kiln car for single-layer firing

Ribbed U-cassette in dry-pressed design

Creaton AG, Wertingen | Tunnel kiln car with ribbed U-cassettes

Silicon carbide as kiln furniture for fine and heavy clayware

H-cassettes for the firing of clay roofing tile DS5

Jessenberger, Unsleben | Tunnel kiln car with SiC loadbearing beams

Smooth U-cassette

Creaton AG, Wertingen | Tunnel kiln car with ribbed U-cassettes
## Technical Data

<table>
<thead>
<tr>
<th>Quality</th>
<th>BURTON S60 HW</th>
<th>BURCOTOP 125 HS</th>
<th>BURTON 40 HW</th>
<th>BURTON S 60 T</th>
<th>BURCOTOP LIGHT 13/25</th>
<th>BURCOTOP LIGHT 14/25</th>
<th>BURCORIT 20 W</th>
<th>BURCORIT 20 B</th>
<th>BURCORIT 30</th>
<th>BURCORIT CM1</th>
<th>BURCOTOP WT12</th>
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<td>Mineral Content</td>
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<td>Cordierite, Mullite</td>
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<td>Cordierite, Mullite</td>
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<td>&lt; 0.40</td>
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<td>Thermal Conductivity at 200°C/WmK</td>
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<td>1000°C/WmK</td>
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<td>≥ 200 mm</td>
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<td>&lt; 100 mm (+/- mm)</td>
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<td>&lt; 200 mm</td>
<td>+/− 1.5 mm</td>
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<tr>
<td>&lt; 150 mm (+/- mm)</td>
<td>1.3</td>
<td>1.5</td>
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<td>(Mono and U-cassettes have separate tolerances)</td>
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