

## Application Story

### Light-Weight Kiln-Car

Location: England  
Installation: 25 August, 2008  
Operating Temp: 1,560°C  
Energy source: Gas

The customer uses a 2m<sup>3</sup> periodic kiln to sinter its products. The kiln has one kiln-car with top (hot face) area of 1.43 m<sup>2</sup>.



The project included replacement of the inner insulation of the kiln-car, leaving the traditional insulation on the circumference.

The solution includes a combination of **Lite-Cell 170 pellets** (loose pellets) for the back insulation and a 50mm layer of **Lite-Cell 170 A2** boards, with overlapping lips, as hot-face.

The whole installation process was extremely fast and took about one hour.

### Results

After cycle modifications, the energy savings reached 30% and the sintering cycle time is now shorter by 15%.

The energy savings by itself makes the **ROI** of this project **shorter than 9 months.**



## Technical Information

	Old Design	New Design	Savings
<b>Top layer</b>			
Material	Heavy bricks	Lite-Cell 170 A2	
Classification	1,650°C (class 30)	1,700°C	
Density	3.06 kg/ltr	0.45 kg/ltr	
<b>Back insulation</b>			
Material	Light-weight bricks	Lite-Cell pellets	
Classification	1,540°C ( class 28 )	1,600°C	
Density	0.89 kg/ltr	0.12-0.14 kg/ltr	
<b>Total insulation weight</b>	~ 700 kg	~ 400 kg	~ 300kg / ~ <b>43%</b>
<b>Turnaround – including unloading and loading</b>	28.5 hours	24 hours	4.5 hours / <b>16%</b>
<b>Burners “ON” duration (average)</b>	18.5 hours	12 hours	6.5 hours / <b>35%</b>
<b>Gas consumption per cycle (average)</b>	360 m <sup>3</sup>	250 m <sup>3</sup>	110 m <sup>3</sup> / <b>30%</b>
<b>Energy consumption per cycle (average)</b>	3,960 kWh	2,970 kWh	1,210 kWh / <b>30%</b>

