

Carbowall System

DESCRIPTION

Alkegen's Carbowall System is an engineered solution, offering a panel system which has been designed for lining the convection zones of chemical and petrochemical furnaces. The solution is applicable to furnaces such as oil heaters, reformers and pyrolysis units. It has been developed for new units, retrofitting existing equipment or for repairs. The system consists of customized rigid panels made from high purity lightweight fibers that fit together to line the furnace. The panels are coated for exceptional erosion resistance making them ideal for high gas velocity areas.

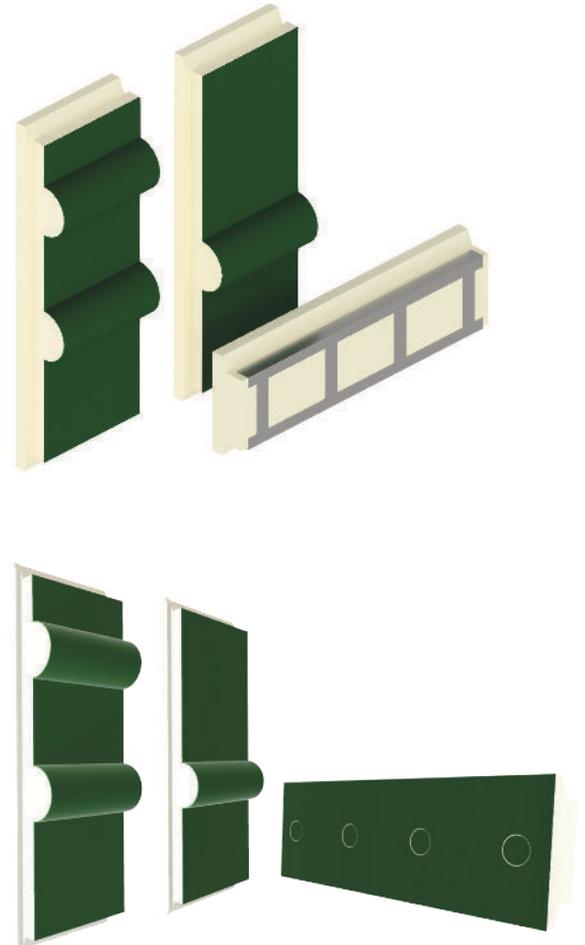
It is designed in such a way that it can be installed from the external side of the furnace without the need to remove the existing internal piping. One of the primary advantages of our engineered system include the reduction in thermal losses resulting in significant energy savings.

Carbowall System provides additional clear advantages when compared to conventional products, including excellent thermal shock resistance, fast heat up, a significant decrease in downtime, and as a lightweight solution reducing maintenance cost and risk. All designs are done according to each project. For fixing schemes and details, please contact Alkegen.

MIX

The Carbowall System consists of rigid panels and beams made from a mixture of Alkegen fibers together with organic and inorganic binding agents. This mixture of fibers means that shrinkage at high temperatures is extremely small and also that the panels have uniform density throughout their thickness.

Due to the great mechanical resistance and the high rupture modulus, the Carbowall System can be used in areas where there are high gas velocities and risk of erosion. The system can be easily cut, drilled or machined, facilitating their installation.



Product Information Sheet



Carbowall System

PHYSICAL PROPERTIES

Color	Beige
Temperature Class	1260 °C (2300° F)
Melting Point	1760 °C (3200° F)
Nominal Density	450 kg/m ³ (28 pcf)
Typical rupture modulus	15.1 x 10 ⁵ N/m ²

The Temperature Class of Fiberfrax products is determined by the criterion of irreversible linear change and not by the melting point

THERMAL CONDUCTIVITY

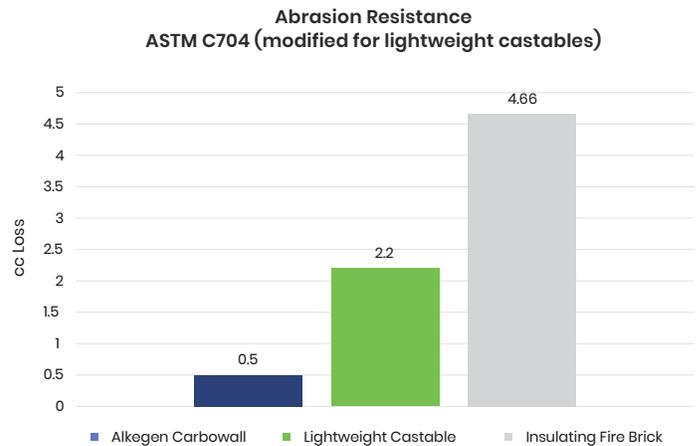
	W / m . K	BTU.in/h.ft ² .F
@ 200 °C (392 F)	0.049	0.34
@ 400 °C (752 F)	0.068	0.47
@ 600 °C (1112 F)	0.094	0.65
@ 800 °C (1472 F)	0.130	0.90
@ 1000 °C (1832 F)	0.170	1.18

LINEAR RETRACTION

Soaking regime	24 h
1000 °C (1830 °F)	2.5%
1260 °C (2300 °F)	4.5%
Loss to fire	6 a 8%

STRAIN STRESS

Compression (as received)	After 24h @ 1260 °C (2300 °F)	Deformation
3.6x10 ⁵ N/m ²	1.6x10 ⁵ N/m ²	5%
5.0x10 ⁵ N/m ²	2.2x10 ⁵ N/m ²	10%
6.3x10 ⁵ N/m ²	2.3x10 ⁵ N/m ²	20%



- Carbowall tested vs. incumbent materials (IFB & LW Castable).
- All samples were fired to 700 °C (1300 °F) for 3 hrs.
- ASTM C704 modification (18% calibrated air pressure for the nozzle & 25 grams of SiC)

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