High Thermal Insulating and Resisting Ceramics Furnace Wall for Industrial Furnaces

**Features**

Replacing conventional furnaces with THERMOTECT WALL™ enables to reduce the amount of heat loss through walls for reduced fuel consumption. Our THERMOTECT WALL™ technology can be also applied to areas prone to physical and chemical damage, to which refractory ceramics fibers (RCF) could not be applied. Thus, it is a promising solution with potential for wide-range applications.

**Concept or Summary**

THERMOTECT WALL™ is a furnace wall with excellent thermal insulation and heat resistance property that can be applied in a wide temperature range from 800 to 1700 °C. The wall uses special raw materials utilizing recycled raw materials from our manufacturing plants and does not contain RCF, which is listed as Category II Substance in the Ordinance on Prevention of Hazards Due to Specified Chemical Substances* in Japan.

THERMOTECT WALL™, a high thermal insulation ceramics furnace wall developed by AGC Ceramics, a consolidated subsidiary of AGC Inc. Group has been awarded the Director-General’s Prize (in the Product and Business Model Category) at Grand Prize for Excellence in Energy Efficiency and Conservation in 2015 (sponsored by the Natural Resources and Energy Agency).

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*Source: JASE-W Japanese Smart Energy Products & Technologies
https://www.jase-w.eccj.or.jp/technologies/index.html
**Effects or Remarks**

Efficiency of energy saving (trial circulation for industrial furnaces of each field)

<table>
<thead>
<tr>
<th></th>
<th>Present</th>
<th>THERMOTECT WALL™</th>
<th>Rate of reduction (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum reforming furnace</td>
<td>1,057</td>
<td>1,057 × 29%</td>
<td></td>
</tr>
<tr>
<td>Glass furnace (small size)</td>
<td>484</td>
<td>484 × 14%</td>
<td></td>
</tr>
<tr>
<td>Glass furnace (large size)</td>
<td>2,342</td>
<td>2,342 × 21%</td>
<td></td>
</tr>
<tr>
<td>Aluminum rapid melting furnace</td>
<td>1,207</td>
<td>1,207 × 48%</td>
<td></td>
</tr>
<tr>
<td>Preheater for cement manufacturing</td>
<td>18,460</td>
<td>18,460 × 30%</td>
<td></td>
</tr>
<tr>
<td>Steel reheating furnace (skid pipes)</td>
<td>17,574</td>
<td>17,574 × 26%</td>
<td></td>
</tr>
<tr>
<td>Steel reheating furnace (wall)</td>
<td>2,734</td>
<td>2,734 × 25%</td>
<td></td>
</tr>
<tr>
<td>Steel reheating furnace (roof)</td>
<td>3,322</td>
<td>3,322 × 25%</td>
<td></td>
</tr>
</tbody>
</table>

Amount of heat loss per m² (W/m²)

- Enables long-lasting energy saving with its excellent thermal resistance, corrosion resistance, and thermal insulation properties.

**Installation in Practice or Schedule**

**Domestic**

See below for examples of cases where THERMOTECT WALL™ is applied.

**Application example for steel industry**

Where THERMOTECT WALL™ is used:
The walls, roof and skid pipes of a reheating furnace

- Reducetion rate of heat loss (compared to those using conventional materials): 25-29%

**Application example for glass industry**

Where THERMOTECT WALL™ is used:
Regenerator, crown of melting tank, etc.

- Reduction rate of heat loss (compared to those using conventional materials): 21%

- High temperature glass furnace excellent in corrosion resistance with alkaline gas, providing long-lasting thermal insulation prop.
- Replacing refractory ceramics fibers, THERMOTECT WALL™ prevents deterioration of thermal insulation performance over time to provide energy saving performance.

Contact: AGC Ceramics Co., Ltd., New Business Group
Tel: +81-3-5442-9182 Fax: +81-3-5442-9190
http://www.agcc.jp/