Pillard NovaFlam®
Rotary kiln burner

Premium firing technology for the cement industry

- Easy to use and to maintain
- Eco-designed burner, tailor-designed for each customer
- Improved clinker quality
- High combustion efficiency with a high ASF rate up to 100% fluff
- Proven and cost-effective technology
Pillard NovaFlam® is Fives’ latest generation of multi-channel burners for the cement industry.

Understanding cement plant challenges

Based on a long experience in designing and supplying ultimate combustion systems, Fives provides high performance solutions for the cement industry. Tailor-made to each kiln and process, Pillard NovaFlam® optimizes both plant operability and performances. It has been installed in more than 500 plants worldwide.

| Characteristics |
|------------------|-----------------|
| Fuels            | Coal, petroleum coke, anthracite, lignite, heavy oil, diesel oil, natural gas, alternative solid fuels (plastics, wood chips, sawdust, animal meal, fluff...), waste oils, solvents |
| Output range     | from 10 MW to 200 MW |
| Primary air data | Case by case from 4 to 8% flow rate, at 150 mbar to 250 mbar pressure |

Some proven references (burner change only)

<table>
<thead>
<tr>
<th>Plant nr.1</th>
<th>1,500 TPD kiln</th>
<th>Germany</th>
<th>+4% production</th>
<th>+5MPa early strength</th>
<th>up to 100% solid AFR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant nr.2</td>
<td>5,000 TPD kiln</td>
<td>Turkey</td>
<td>+5% production</td>
<td>-30% sulphur volatilization</td>
<td>100% high sulphur pet coke</td>
</tr>
<tr>
<td>Plant nr.3</td>
<td>6,500 TPD kiln</td>
<td>USA</td>
<td>+4% production</td>
<td>-3.7% kiln specific consumption</td>
<td>+2MPa early strength</td>
</tr>
<tr>
<td>Plant nr.4</td>
<td>2,800 TPD kiln</td>
<td>Philippines</td>
<td>&lt;800mg/Nm³ NOx</td>
<td>-4% kiln specific consumption</td>
<td>+25% clinker compliance</td>
</tr>
<tr>
<td>Plant nr.5</td>
<td>2,800 TPD kiln</td>
<td>USA</td>
<td>+4.6% production</td>
<td>&lt;650mg/Nm³ NOx</td>
<td>+2MPa early strength</td>
</tr>
</tbody>
</table>

Pillard NovaFlam® innovative design ensures:

— Efficient introduction of secondary air into the flame
— Intense and compact flame
— Optimized consumption of cold primary air
— Safe, precise and replicable manual flame adjustment with the swirl setting device

Engineered Sustainability®, sustainable design by Fives

Fives designs technologies of today to meet your environmental goals of tomorrow.

The commitment of Fives is to provide technologies that combine operational excellence and high environmental performance. The Engineered Sustainability® brand focuses on technologies that have been subject to:

• Life-cycle analysis of the environmental impacts,
• Systematic analysis of the impacts and means of improvement to make the best economic and environmental selections,
• Tests to prove tangible and quantifiable benefits.

Engineered Sustainability® assures customers that their investment in Fives is part of a sustainable way in their environmental strategy.

www.engineered-sustainability.com

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