

## Thermal Regenerator Cleaning

### Why melt out of blocked Regenerator?

- So that the furnace can «breathe» again
- To reduce fuel costs
- To avoid the need for an unscheduled furnace repair



The problem of blocked regenerators is not new to the Glass Industry. It is widely accepted that plugging of checkers in regenerator furnaces happens as furnaces aging and can have very significant detrimental effects on furnace efficiency resulting in increasing production costs.

The specific energy consumption in furnace between 4-6 years of campaign life can increase by 5-15% due to blocked regenerators. Furnaces producing soda-lime glass, where sodium components vapourize from the melt surface resulting in the formation of sodium hydroxides. Some particles are carried over by combustion air/flue gases. At the time sulphur dioxide (from burner fuel and batch) form.



Both gases leave the furnace and cool as they pass down the checker pack and react which leads to the condensation of sodium sulphates which partially stick to the surface of the refractory. Over time this builds up and reduces the cross section/area of the regenerator.



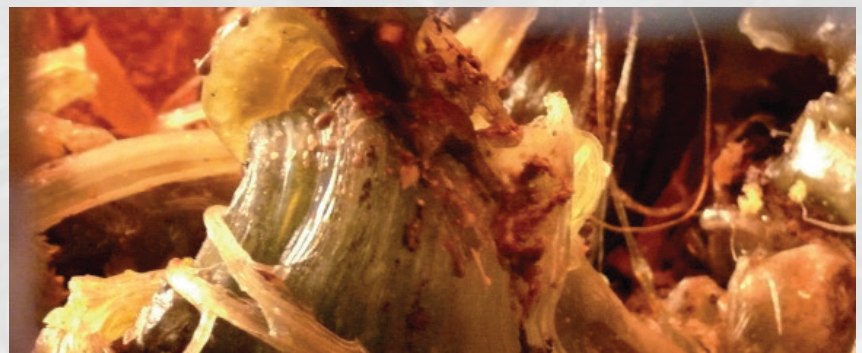
**With this the furnace performance is effected by:**

- The reduction of available exhaust cross section/ area = higher furnace pressure
- Corrosion or mechanical attack to the refractory during sublimation
- Due to the lower heat conductivity of deposits, heat transfer into refractory/checker and into the cold combustion air is reduced, therefore requiring additional energy from the burner to achieve the melting temperature.

Instead of extending the reversal cycle, the Hotwork method consists of installing high velocity burner on the base of the regenerator. Our method is a tried and proven effective process, applying additional heat from the bottom. Sulphates melt become liquid in excess of 850°C and will start to melt and run down to the bottom of the regenerator, where they can be collected and later on removed. The operation can be carried out on single or multiple chambers at the same time, while our highly experienced engineers will continuously adjust the melting rate in cooperation with the furnace operator to avoid any influence on the production. [This method has been successfully carried out on hundreds of regenerative furnaces.](#)

## ECONOMIC AND TECHNICAL BENEFITS OF THERMAL REGENERATOR CLEANING

- If clogging of regenerators are not addressed in time, the will worsen. The rate of deterioration will accelerate in time.
- Deposits will mechanically attack and erode the refractory, which may lead to the premature replacement of checker pack.
- Due to the reduced heat transfer of regenerators, a regenerator cleaning is economically feasible, since it can reduce the specific energy consumption by up to 10%



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