

Case Study- Glass Manufacturing

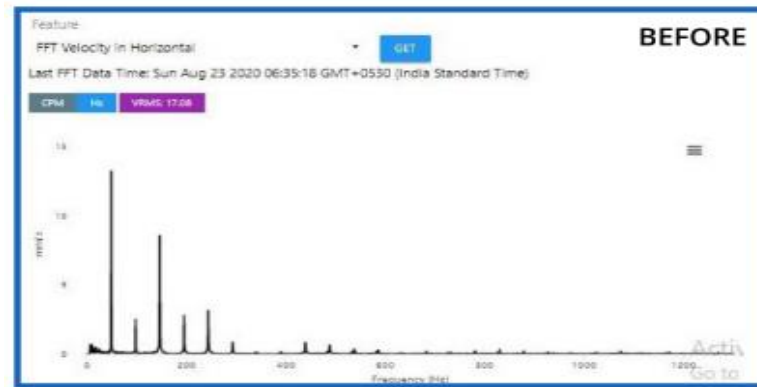
A major solar glass manufacturer deployed a digital reliability solution to optimize the glass annealing process in the Lehr oven.

Business Case-

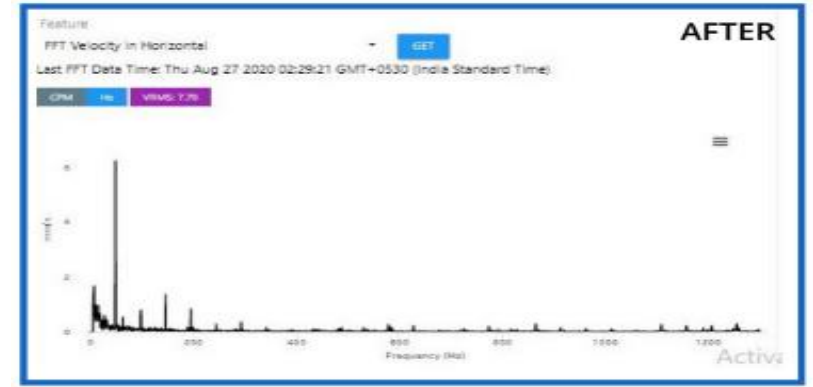
Annealing is a critical process in glass manufacturing, that takes finished glass products from 1500°C through a temperature gradient for systematic cooling. An annealing kiln or Lehr is used to cool down glass to 350°C over rollers and then with cooling fans bring it down to room temperature. Rotating looseness, misalignment, and bearing failures in cooling fans can disrupt the entire process and result in unplanned downtime.

Challenges-

- Loss of production hours due to equipment shut-down
- Misalignment & looseness issues



Synchronous harmonics observed at DE fan bearing



FFT Spectrum amplitudes drastically reduced after maintenance

Solution Deployed -

By deploying a remote diagnostic and condition monitoring technology, the plant maintenance team was able to identify potential breakdowns with 100% accuracy, much in advance of the actual failure. The Fast Fourier Transform (FFT) analysis revealed increased vibrations, indicating rotational looseness in cooling fans disrupting the temperature gradient in the Lehr oven. The fan bearings were in need of change & realignment. Lehr activity was successfully restored & hours of unplanned downtime was avoided through focused maintenance.

Business Impact

6+ Hours
of unexpected downtime saved