



Case study

REFRACTORY INDUSTRY

END TO END PLANT AUTOMATION (TURNKEY)

The customer is a leading MNC in the refractory industry and was setting up a green field Tap Hole Clay Plant in India. The plant produces TAR clay bricks that is used in furnace tap holes, in the metals and alloys industry.

Some of the raw material mixes used in TAR Clay come from the customer's own upstream refractory plant, where the batching and mixing was also automated by Autosys.

In the TAR clay plant, Autosys provided a complete turnkey solution, except for the Muller mixer and extractor which was bought directly by the customer.

The powder raw material mix is fed in to the plant from a 1000 KG Jumbo Bag (Transported from the upstream plant). The material from the bag is automatically drawn and taken through skip hoist to the weighing system. After weighing the material is fed in to a paddle mixer to make the mix homogenous. From the paddle mixer, the materials are fed in to the muller mixer. Here resin, solvent and TAR are added as per recipe. These materials are pumped from storage tanks through special purpose pumps, controlled by valves and measured by mass flow meters.

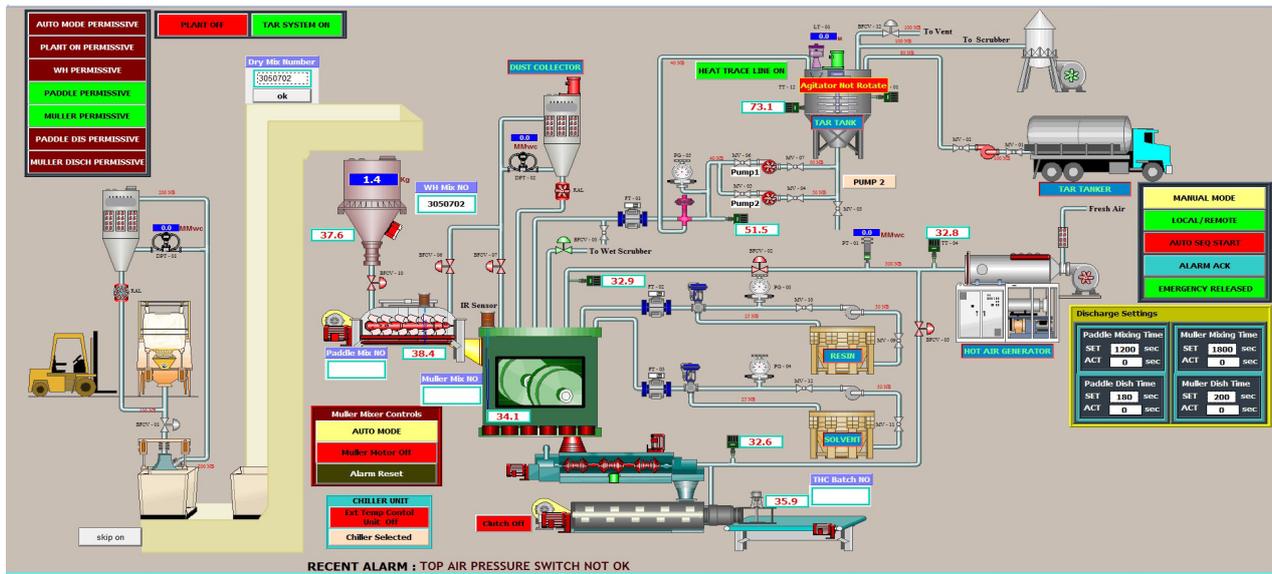
The TAR in the agitator tank is maintained at a particular temperature and the TAR is continuously kept in circulation, so that the TAR can be fed easily in to the muller mixer for each batch.

The whole plant is automated using Rockwell – AB PLCs and SCADA software.

The output of the muller mixer flows in to the extractor and brick cutter. The cutting pulses are also controlled by the PLC. The output bricks are packed manually.

10,000 TPA TAP HOLE CLAY PLANT

TAP HOLE CLAY OVERVIEW



High Lights

Spring Loaded
Jumbo Bag Loading
Station

Raw Material
Weighing system

Resin and Solvent
Handling system (with
Tanks, Pumps and
Piping)

30KL Tar Handling
System (with
Agitators, Heating
system and
Circulation Pumps)

Material
extraction
system

Paddle Mixer &
Muller Mixer

Hot air generator
and ducting

Skip Hoist

PLC based control
system, Control Panel
and SCADA Software

Dust
Extraction
system

Level & Pressure
Transmitters,
Temperature &
Proximity Sensors,
Mass flow meters
and Pneumatic Valves



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