**FTP Model – FLUIDTERM – PETCOKE FIRED**

**STANDARD SUPPLY**

* 1 Set Thermic fluid heating coils made of ERW boiler quality tubes
* 1 Set De-aeration cum expansion tank with level switch
* 1 Set Thermic fluid circulation pump with motor
* 1 No. Control Panel with Control Wiring
* 1 Set Induced Draft Fan:
  + Centrifugal fan along with motor, base frame & belt drive assembly
  + Inlet damper
* 1 Set Forced Draft Fan:
  + Centrifugal fan along with motor & base frame
  + Inlet damper

**INSTRUMENTS, CONTROLS AND SAFETIES:**

* Digital Temperature gauges at inlet & outlet of TFH
* Temperature gauge for flue gas outlet
* On / Off selector switches & Indicating lamps for all motors
* Alarm for Abnormal Operating conditions

**SAFETIES**

* Differential pressure switch to indicate /cut-off fans if differential pressure/flow is less.
* Low Level of thermic fluid in De-aerator tank shall indicate / alarm / cut-off Fans and would stop the combustion.
* Electrical interlock so that thermic fluid circulating pump failure shall cut-off fans and would stop the combustion & give alarm.
* Higher temperature of thermic fluid at outlet header shall cut- off fans and would stop combustion

**INSTRUMENTS**

* Pressure gauge to show thermic fluid pressure at coil inlet & outlet header
* Differential pressure switch in hot thermic fluid outlet line
* Level gauge in de-aerator cum expansion tank
* Level switch in de-aerator cum expansion tank
* Temperature gauge to measure temperature of thermic fluid at coil inlet & outlet

**ADDITIONAL ITEMS**

* Combustion system consisting of following:
  + Secondary air system with nozzles & damper
  + Screw feeder with gear box & motor
  + Variable Frequency Drive (VFD) for feeder
  + Fuel spray nozzle with damper
  + SS nozzles for fuel firing
  + Bed plate for nozzles
* Air Pre-heater:
  + Shell & Tube type Air pre heater
  + Ash discharge hopper
* Pollution Control Equipment
  + Cyclone dust collector
  + Ash discharge hopper

BATTERY LIMITS

* Thermic Fluid : Inlet / outlet flange on the outlet header
* Flue Gases : Outlet of main unit, inlet and outlet connections of

air pre-heater, cyclone dust collector and ID fan

* Electricity : Control panel & terminals of motors / instruments
* Thermic Fluid : Inlet / outlet of thermic fluid pump, expansion tank

and Main heater coils

* Fuel : At the inlet of furnace / screw feeder
* Ash : Outlet of equipments / furnace

**EXCLUSIONS:**

* Chimney and Flue gas ducting
* Civil Works and foundation
* Thermic fluid and its filling arrangement
* Process & Inter-connecting instrumentation, piping & valves
* Thermic fluid & cooling water piping
* All Refractory material & labour for furnace
* Fire doors & ash doors, rotary air lock valves
* All insulation wherever required
* Power Wiring up-to terminal points of Motors
* Fuel Preparation, Handling and Firing System
* Ash Collection & Disposal System
* Anything not specifically mentioned above