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## AFBC BOILER



**LLOYDS<sup>®</sup>  
ENGINEERING  
WORKS**

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# SALIENT FEATURES OF LLOYDS ATMOSPHERIC FLUIDIZED BED COMBUSTION BOILER

## BEST COMBUSTION EFFICIENCY

### Technical aspects required to accomplish

- Selection of Fuel Nozzles & Air Nozzles
- Proper excess air with a split
- Free board Combustion due to over bed firing
- Better Residence time

### Lloyds Design Considerations

- For proper spread to have excellent contact of air and fuel
- Split to primary and secondary air to minimize the unburnt carbon loss
- Wider and Tall Furnace

## BEST BOILER EFFICIENCY

### Technical aspects required to accomplish

- Less un burnt carbon
- Less Dry Flue gas exit loss
- Less leakage

### Lloyds Design Considerations

- Due to best combustion, higher residence time.
- By maintaining optimum gas outlet temperature
- Gas tight enclosure machine welded membrane wall on both end

## HIGHER AVAILABILITY, EASE OF OPERATION & LESS MAINTENANCE

### Technical aspects required to accomplish

- Bed coils with higher pitch
- Studded Bed coil
- Air Nozzles

### Lloyds Design Considerations

- Bed coils with higher pitch to avoid erosion
- SS studded bed coil to eliminate erosion
- SS tip Air nozzles





# SALIENT FEATURES OF LLOYDS ATMOSPHERIC FLUIDIZED BED COMBUSTION BOILER

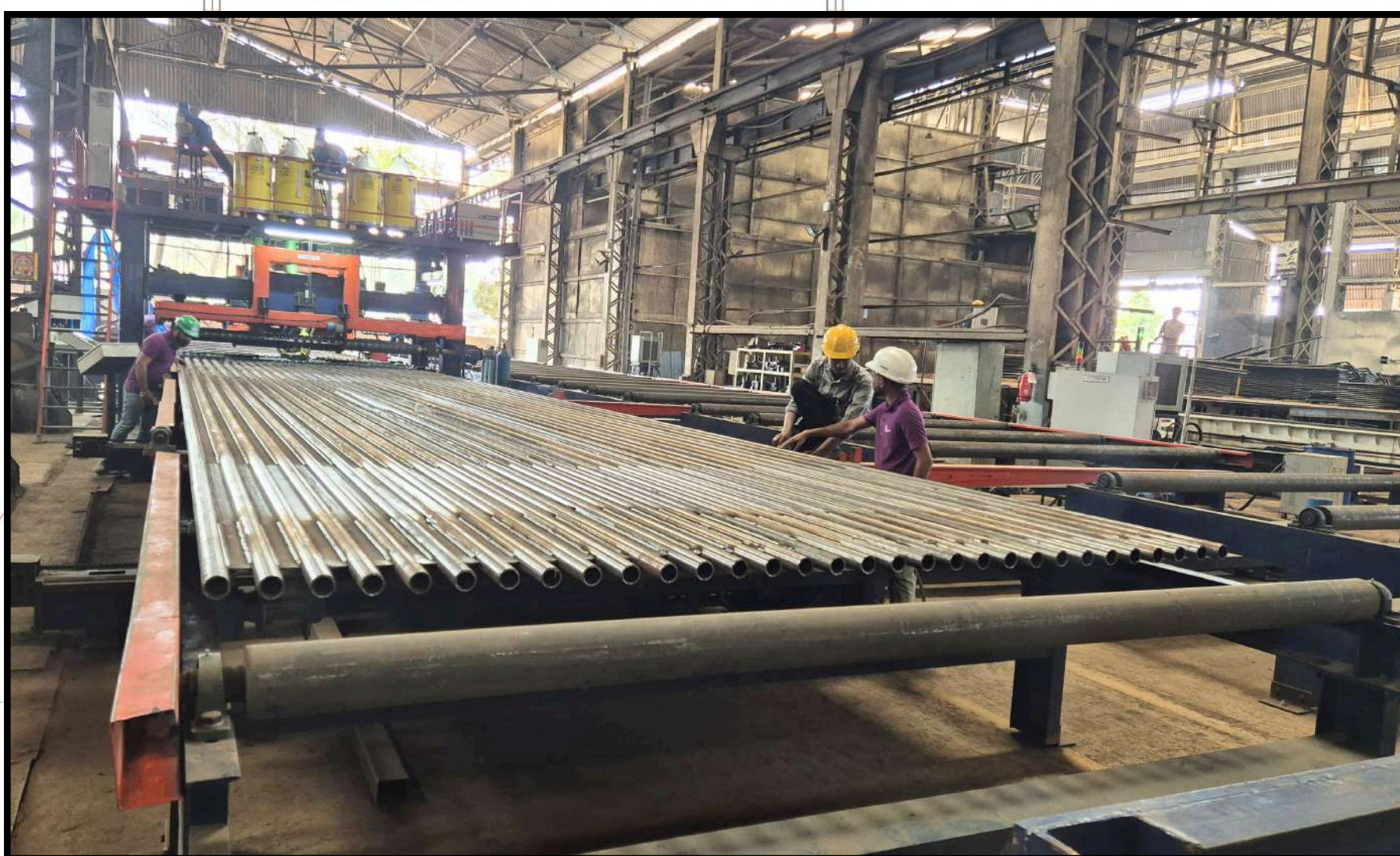
## LONG LIFE & ROBUST DESIGN

### Technical aspects required to accomplish

- Optimum Velocity profiles
- Higher thickness & Superior material
- Less Erosion

### Lloyds Design Considerations

- Wider pitch on SH coil
- SH tube thickness and material selection
- 'SS' lining for Hoppers
- Higher refractory thickness



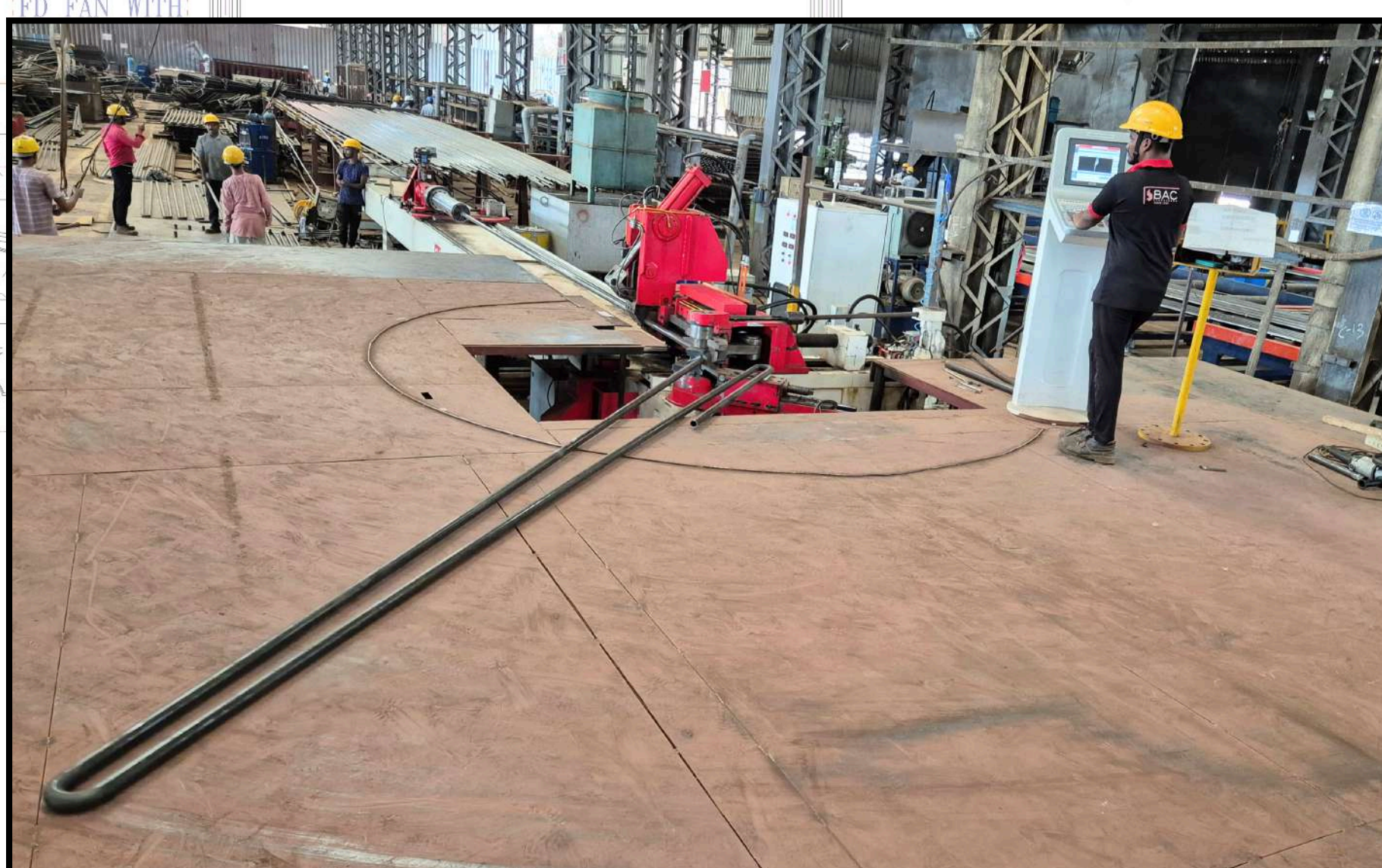
## BETTER TURN DOWN

### Technical aspects required to accomplish

- Thermal design
- Auxiliaries Sizing

### Lloyds Design Considerations

- Selection of No. of compartments
- Higher DB plate pressure drop
- SH heating surface area
- Selection of mass velocity
- Auxiliary Selection





# SALIENT FEATURES OF LLOYDS ATMOSPHERIC FLUIDIZED BED COMBUSTION BOILER

## SALIENT FEATURES

### Technical aspects required to accomplish

- Steam quality up to 99.99 % to improve the life of Turbine
- Better Steam water flow Circulation
- More suitable for fuel having higher ashes & lower GCV

### Lloyds Design Considerations

- Primary and secondary screen system
- Appropriate Drum water holding capacity and Steam space loading
- Providing proper No. of Cyclones
- Proper inclination of bed coil for better mass velocity to avoid DNB
- Circulation calculation to size Downcomers & Risers
- With Optimum Bed temperature and Furnace Bottom design

## OPEN BOTTOM HOPPER DESIGN (FUEL BED)

### Technical aspects required to accomplish

- Suitable for multi fuel like Char, Dolo char, Washery rejects, Rice husk & Coffee waste husk
- Low Sox

### Lloyds Design Considerations

- Proven design with continuous bed ash draining even for large sized particles
- By addition of proper quantity of lime stones at appropriate level



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