



ACTIVE CARBON INDIA PRIVATE LIMITED

Moisture Removal from Raw Material using Hot Air before Entry into Kiln

SUMMARY OF THE OPTION

Active Carbon India Ltd., with a plant capacity of 1500 tons/year, is a leading manufacturer of granular activated carbon prepared from coconut shell charcoal by using steam activation technique. The plant operates two rotary kilns in parallel which are considered to be the heart of the carbon activation process. The rotary kilns are fired by furnace oil.

The feed (raw material), which is used for production of activated carbon, contains about 20 per cent moisture and approximately 350 kg/hr of this feed is fed into the Kiln to produce activated carbon. The Team was of the opinion that there is scope for reduction of moisture in raw material to the kiln from the existing 20 per cent to about 8 per cent.

Removal of moisture in feed by hot air generated by a steam coil in a fluidised bed system before being fed into the kiln to reduce moisture in feed by about 8 per cent. It was envisaged that after connection of the flue gas paths of Kiln 1 & 2, steam generation would be around 900 –950 kg/hr and the total requirement inclusive of driers is 600-710 kg/hr. On an average about 250 kg/hr of steam would be excess. (Implementation of this option has resulted in excess steam to the tune of 320 TPH) It was then initially envisaged that part of this excess steam could be utilized for drying of feed by generating hot air through steam coils and blowing hot air through a wet feed fluidized chamber. It was estimated that the moisture removal to the tune of 12 per cent (i.e from 20 per cent to 8 per cent) would be achieved.

This option was not taken up by the management of the Active Carbon India Pvt. Ltd. for implementation. In fact this was one option which had specially caught the interest of ACIL and they had gone ahead in right earnest to identify a supplier of a suitable fluidized bed dryer design for this purpose. While a couple of suppliers did respond they were not able to come up with a prototype and also were unable to agree to a mutually agreeable terms of contract. This option however is likely to be pursued when the opportunity arises.

KEY WORDS

India, Chemicals, Furnaces and refractories, Raw material drying, Moisture

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