

APPLICATION BULLETIN

BACKGROUND/ CHALLENGE

As coal is burned it produces a two types of noncombustible mineral residue: bottom ash (or slag) remains in the furnace and fly ash rises with the flue gases. Before exiting the stacks with the flue gases, fly ash can be collected using pollution control equipment such as electrostatic precipitators or baghouses.

Flyash has pozzolanic properties which are useful in concrete, land reclamation and soil improvement. A large coal-fired power plant was searching for a cost-effective method of making a sellable product and recycling the fly ash as an alternative to storing it at the plant or dumping it in landfills and ash ponds. Market demands of fly ash specified a size of 45-microns (325 mesh) so the plant needed to consistently control the fineness of fly ash particles and separate out larger and smaller sized particles.



STURTEVANT® PERFORMANCE

Sturtevant operates a full-service testing facility to verify results and to aid in the specification of the correct air classifying machine. After testing of the coal-fired power plant's fly ash, Sturtevant determined that its Side Draft Air Classifier with the ability to separate fly ash particles in the 100- to 400-mesh (150-38 micron) range would best meet the plant's specifications.

EQUIPMENT RECOMMENDATIONS

SIDE DRAFT AIR CLASSIFIER

MODEL	HP	AIR FLOW VENT (CFM)	FEED RATE (TPH)	APPROX. WEIGHT		HEIGHT		DIAMETER		MIN. CLEARANCE	
				(LBS)	(KG)	(FT)	(MM)	(FT)	(MM)	(FT)	(MM)
20	5 – 7.5	3,000	4 - 12	2,100	953	7' 2"	2184	3' 5"	1041	2' 6"	762
30	7.5 – 10	9,400	10 - 40	2,800	1270	13' 3"	4039	5' 2"	1575	3' 4"	1016
40	20 - 30	15,300	20 - 65	3,500	1588	14' 0"	4267	6' 1"	1854	3' 4"	1016
50	30 - 40	23,500	30 - 100	7,000	3175	15' 6"	4572	8' 1"	2464	3' 4"	1016
60	40 - 50	35,300	45 - 150	14,000	6350	16' 0"	4877	9' 6"	2896	4' 3"	1295
70	50 - 60	38,000	60 - 190	14,600	6622	17' 0"	5182	13' 5"	4089	4' 3"	1295
80	60 - 75	56,000	75 - 240	15,000	6804	22' 1"	6731	13' 6"	4115	4' 3"	1295
90	75 - 100	64,000	95 - 300	29,000	13154	24' 0"	7315	14' 3"	4343	4' 11"	1499

Measurements are for general reference only. Please consult dimensional drawings for exact measurements.

Larger sizes are available, for a complete list see the Side Draft Product Bulletin.

SUMMARY

The Side Draft matched the plant's specifications perfectly, allowing them to successfully market fly ash and create a new profit center. Beneficiation also reduced disposal costs of fly ash that might otherwise end up in landfills, saving the plant money.

Not only does recycling fly ash reduce disposal costs, but there are other environmental benefits to recycling fly ash including reducing the demand for virgin materials that need quarrying and substituting fly ash for materials that are energy-intensive to create such as Portland cement.