

IMERYS, CORNWALL

MAIN CONTRACTOR:

ACWA Services Ltd

INDUSTRY:

Minerals

DATE OF CONTRACT AWARD:

June 1995

CONTRACT VALUE:

£231,000

ACWA CONTRACT NO:

A0242



Plate scrubbers for dust abatement

INTRODUCTION

Plate scrubbers for dust abatement and to recover heat from dryer exhaust gases.

DESCRIPTION

Two purpose-built wet scrubbing systems for the Par Works of Imerys (formerly English China Clays International plc) – a leading producer of high quality fillers and coatings for some of the world's largest paper manufacturing industries.

Both systems are fully integrated with the production processes, using clay slip as the scrubbing medium to clean and control gaseous emissions before discharge to atmosphere. The ACWA AIR scrubbing systems also provides additional benefits by recovering energy and valuable product from the waste gas stream.

China clay is produced by drying clay slurry and recovering the cooled, solidified residue. Within these processes, one ACWA AIR Scrubber, (4100 mm diameter x 8050 mm high) cleans gases discharged from the drying process, while the other, (3400 mm diameter x 7170 mm high), cleans emissions from the cooling system. To effectively remove airborne dust from both these exhausts, the design of each scrubbing system includes a venturi slot plate, a target tray and a tangential vane mist eliminator.

In both drying and cooling processes, exhaust gases enter the base of the scrubber and pass to the lower humidifying section where they are saturated with clay slip by an integrated spray system. Cooled and saturated, gases pass upwards through the venturi slot plate and target tray, and are scrubbed again by clay slip flowing across the dust collection surfaces.

The venturi slot removes most of the fine dust, while the target plate provides an effective means of heat transfer (for gas cooling). From the target plates, clay slip – which is concentrated by evaporation of water into the hot flue gas) gravitates to the collection tank and is either fed back to the filtering/drying process or recirculated as the scrubbing medium. After passing through a mist eliminator, cleaned gas leaves the top of the scrubber and is discharged into atmosphere.

Heat from the hot exhaust gases discharged from the drying process, is recovered in the clay slurry, allowing it to be filtered more easily when returned into the filtering/drying process.

ACWA Services Ltd
ACWA House
Keighley Road
Skipton
North Yorkshire
BD23 2UE

Tel: 01756 794794
Fax: 01756 790898
E-Mail: acwa@acwa.co.uk
Web: www.acwaair.co.uk