

MINERAL BENEFICATION SOLUTIONS



Conveyer & Ropeway Services Private Limited



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CRSPL has shown the way of a Pithead Washery capable of Washing Coal at the mine end and leave dirt the behind and save transportation of ashes laden in Coal. CRSPL uses a wet technology operating with self generated slurry as media. In collaboration with a British firm, the technology was first incorporated at a mine at Dhanbad under S&T Grant from Govt. of India and proved to be successful.

CONVEYOR & ROPEWAY SERVICES PVT LTD (CRSPL) deals in

1. Coal Washing Plant
2. Manganese Ore Washing Plant
3. Limestone Washing Plant

Coal Washing Plant with Natural Medium

Natural Plant medium consisting of coal fines generated in Washing Unit has been found to be most cost effective in processing, and separate ash in ROM coal

The coal fines are generated from ROM feed coal.

These Natural medium Washing Units are most cost effective method, processing ROM coal for industrial use.

The technology is backed by a British process design. The first plant of this technology was implemented under Science & Technology (S&T) Grant, in Lodna Colliery, BCCL, Dhanbad, through CMPDIL, Ranchi, in 1991, on subjection of stringent performance test of difficult coal of Jharia coalfield. Performance through test was found satisfactory.

Subsequently, a number of plants on this technology were built and found fully successful for both coking and non-coking coal.

The plant uses 4 separating functions in the equipment:

1. BARREL
2. CYCLONE
3. DEWATERING SCREEN
4. SIEVE BEND

Advantages

Coal is improved by washing and separating, which generate the following advantages

1. Better calorific value
2. Lower ash content
3. Lower sulpher content, if applicable

The plant provides the following benefits

- Low capital expenditure
- Low gestation period
- Low water and power consumption
- Low running cost
- High efficiency
- Robust modular design
- Quick assembly easy to move
- Extensive product range
- Low power use
- Minimal manpower
- Less pollution

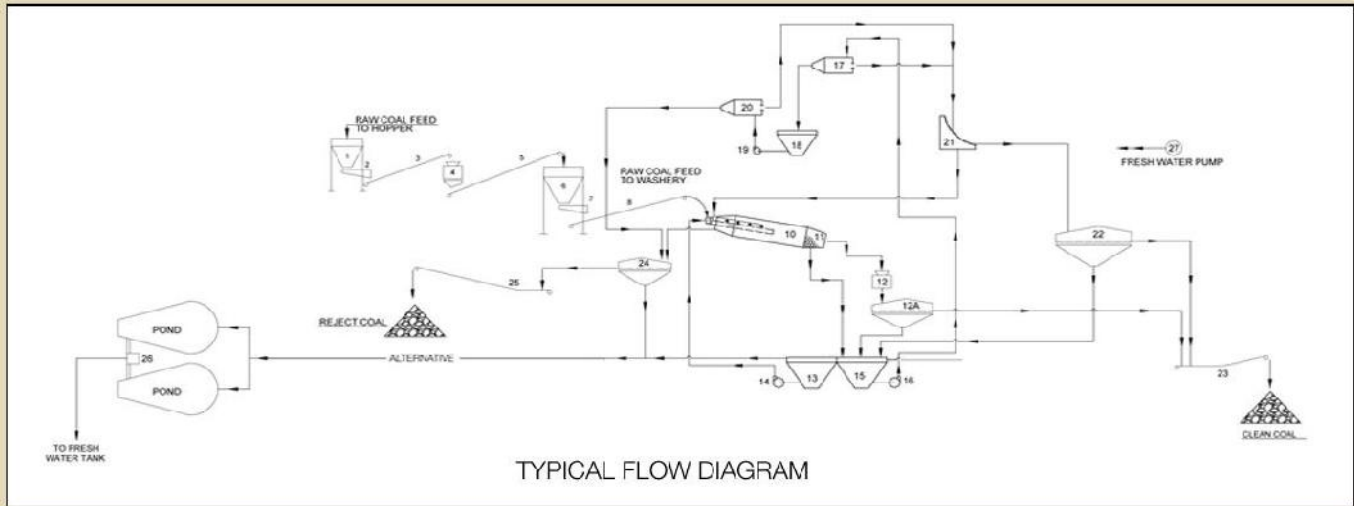


CRSPL has developed a Combined Natural Media & Dense Media Washing Plant to accept a wide variety of input coal as also to achieve an Organic Efficiency to the level of 95-96%. Each circuit is in modular form, effectively dovetailed and integrated in a limited place.

PROCESS

A Barrel-cum-Cyclone Plant functions in three stages – Barrel, Cyclone and Dewatering in Sieve Bends, followed by hi-speed Vibratory Screen. Raw material and water are fed inside the Barrel at top end. The water mixed with the fines present in coal forms the media having specific gravity (SG) range 1.0 to 1.3. the internal scroll of barrel, which is placed at an angle form a vessel in which the material rolls and tumbles effecting a jiggging action. The SG of media and dynamic effect out of rotation of the Barrel develop an effective range for separation at 1,5 to 1.8 SH. and causes the lighter particles to float and heavier sink, which come out from the top end.

Lower end of the Barrel is fitted with a conical Screen through which smaller fraction of the “Float” and media pass through, and then pumped in a set of Cyclones for further processing in a SG range from 1,1 to 1,3. Floats from the Cyclones are dewatered and stocked as “Cleans”.



TYPE OF PLANTS OFFERED

Barrel-cum-Cyclone Plant

Capacity range 25 – 300 TPH

This type of plant is ideally suited for reducing ash in low grade coal for

- (i) Power Sector,
- (ii) Sponge Iron Units,
- (iii) Cement plant etc.



Barrel only Washing Plant

Capacity range 25 – 300 TPH

Capable of handling high extraneous ash, reduction of which can be in the region of 10-12%



Cyclone only Plant

Capacity range 15 – 30 TPH

Particularly suitable for small consumers like

- (i) Cookeries and
- (ii) Small size Sponge Iron Plant.

The design is simple and involves low investment, which are the main attraction.



Slurry Treatment Plant

Capacity range 10 – 15 TPH

Mainly used for outgoing slurry in Barrel-cum-Cyclone Plant.

Also can be used for improvement of slurry quality from large ponds in Coal Beneficiation Plant



PERFORMANCE

Plant is capable of reducing the ash level in feed coal to about 14-15% and is efficient to achieve 90-93% of "Theoretical Yield" obtainable from laboratory test. The "Rejects" produced can be utilized in power generation using FBB technology and thus, the User having captive power plant may get an almost "Zero" loss plant. Alternatively, the rejects may be used by consumer having Brick Kiln, etc.

ENVIRONMENTAL IMPACT

The process is wet technology, hence generate no dust / dirt except at the material transfer point for water sprinklers are provided to arrest air borne flying particles. The slurry which blades out of the plant, is accumulated in a set of concrete lined slurry ponds, from where the settled coal fines are reclaimed for commercial use while the water is pumped back to the circuit. In this way, the circuit is closed.

Design and installation of Coal Washing Plants

S.No.	CAPACITY	TYPE OF PLANT	CLIENT	Year
01	120 TPH	Barrel-cum-Cyclone	CMPDIL	1991
02	120 TPH	Barrel-cum-Cyclone	Diamond Cements	1993
03	25 TPH	Barrel-cum-Cyclone	Chain Impex Ltd	1994
04	15 TPH	Cyclone only	Shree Shyam Coal Co. Ltd	1995
05	120 TPH	Barrel only	Diamond Cements	1995
06	15 TPH	Cyclone only	Maa Parvati Coke Industries	1997
07	15 TPH	Cyclone only	S.K.Coal & Coke (P) Ltd.	1997
08	25 TPH	Cyclone only	Brahmdeo Sinha & Co. (Hard Coke)	1998
09	15 TPH	Cyclone only	Shivam Coke Pvt. Ltd	2001
10	25 TPH	Cyclone only	BLA Industries Ltd., Mumbai	2001
11	25 TPH	Barrel – cum - Cyclone	Akash Coke Industries Pvt Ltd	2002
12	20 TPH	Cyclone only	Surya Coke Pvt. Ltd	2003
13	25 TPH	Cyclone only	Sadguru Ispat Pvt. Ltd	2004
14	125 TPH	Barrel-cum-Cyclone	SMC Power Generation Ltd	2004
15	50 TPH	Barrel-cum-Cyclone	Jai Balaji Jyoti Steels Ltd	2008
16	50 TPH	Barrel-cum-Cyclone	Shri Ramrupai Baiji Steels Ltd.	2005
17	50 TPH	Barrel only	Shiv-Shakti Steel (P) Ltd	2005
18	10 TPH	Slurry treatment Plant	Akash Coke Industries	2005
19	25 TPH	Barrel-cum-Cyclone	Shree Dwarka Bee-Hive Plant (P) Ltd.	2005
20	50 TPH	Conversion of Cyclone Plant of 25TPH to Barrel-cum-Cyclone Plant	BLA Industries Ltd.	2005

About Conveyor & Ropeway Services Pvt Ltd

Conveyor & Ropeway Services Pvt Ltd, an ISO 9000: 2001 certified company is into the business of safe alternative aerial transport. CRSPL was promoted in the year 1975 by a visionary, Mr Shekhar Chakravarty, as the Technical Counterpart of erstwhile Indian Ropeway Engineering Company, which achieved the distinction of constructing the first Aerial Ropeway in India.

Mid-eighties onward, the company became deeply involved in design, construction and installation of Passenger Ropeways and some of them are even being operated on Build-Own-Operate-Transfer (BOOT) basis. In 2001, CRSPL management took control over Eresco Ropeways Limited, London, UK. CRSPL till date have successfully executed over 100 projects in India & Abroad, having Clients in Public as well as Private Sectors. With over 150 dedicated staffs, CRSPL team boasts of highly qualified Engineers having experience more than 30 years in Material handling System and international exposure, which helps in providing Concept to Commissioning under one roof. CRSPL has six offices across India, with their own R&D wing and manufacturing unit.

The company, as part of its expansion programme, further extended its activities in the field of Coal Beneficiation. CRSPL has installed and commissioned Coal Handling Plant, Sand Winning Plant & Ore Crushing & Screening Plant. The Modular Coal Washing Plants installed, based on a unique British Process Technology, have been proved to be more responsive to reduce high ash content in Indian coal.

CRSPL has also successfully taken up development of the world's first Non-Linear Ropeway for a 2nd Tier Alternative Urban Commutation, CURVO. The system is completely emission free and is also eco friendly.



For further information please contact

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