

Belt conveyors Strategic Plan

Objective:

This plan encompasses a set of maintenance and adjustment actions for belt conveyors operating in ArcelorMittal Tubarão site to ensure that all belt conveyors operate properly, not allowing particulate matter emission and the accumulation of materials on the ground.

An assessment will be carried out taking into consideration the material transported, the reference technology recommended for each case, as well as the physical condition of existing equipment and controls. The actions will be divided by operational areas, and detailed in study schedules and engineering definitions, aiming to the implementation of improvements in the operational areas within a time limit of 60 months to conclude the whole plan.

Current Conditions:

- The belt conveyor system at Tubarão has operating procedures (SSPAD/DOC MIX) and are registered in our Maintenance Information System (SISMANA/SAP/Maximo);
- All belt conveyors at Tubarão are covered according to original design, except where it is not applicable (for instance, the belt conveyors located in areas of moving equipment);
- All belts conveyor at Tubarão are provided with cleaning devices (scrapers, cleaners and seals), according to their original design;
- ArcelorMittal Tubarão is equipped with emission control systems such as exhaust dedusting in the transfer of materials, dust suppression system and chutes fitted with sealing systems.

Assumptions:

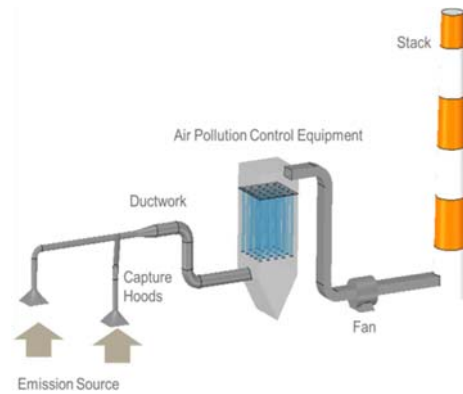
- Equipment in the handling process to be assessed: covers, transfer chutes, trays, side containment, transfer towers, enclosure and collecting systems;
- Benchmark technologies to be considered in the engineering studies: new design for belt cover, enclosure for conveyor systems and transfer towers, exhaust dedusting systems, spot filter (cartridge), suppression system, capture hoods;
- Maintenance and safety aspects will be taken into consideration in the definition of technical solutions so as to minimize impacts on equipment and people;
- The company site will be divided by area for the preparation of the plan: Sinter Plant, Conventional Coke Plant, Heat Recovery Coke Plant, Blast Furnaces, Steel shop, Internal Infrastructure (Briquetting, Processing Plants and Power Plants);

- Later, with the breakdown of the plan, technical solutions will be detailed by type of material handled in each area according to the general time schedule proposed.

Benchmark Technologies:

The benchmark Technologies referred to below, will be studied in the engineering phase so that the best available alternative is used for each improvement case:

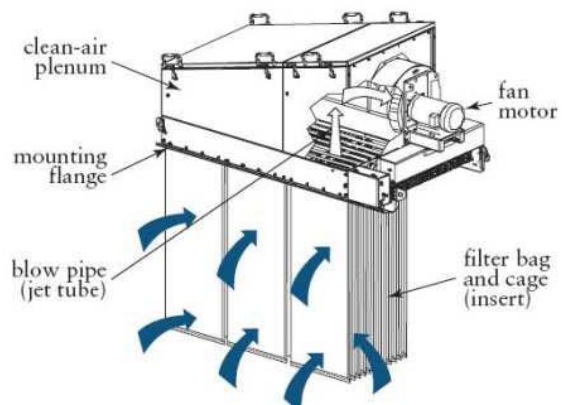
- Exhaust Dedusting System:



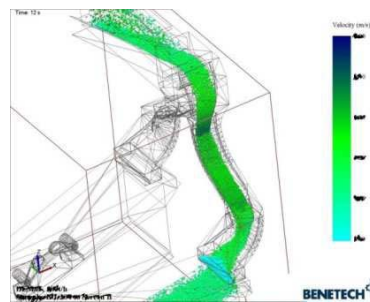
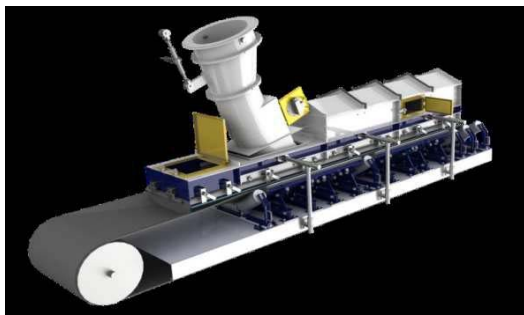
- Dust Suppression System:



- Spot Filters (cartridge):



- Improved chutes:



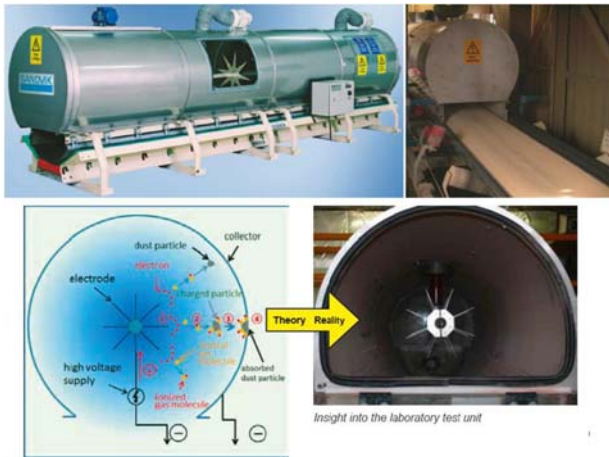
- New Design for Belt Covers:



- Enclosure of Belt Conveyors:



- Capture/Electrostatic Hoods:



Schedule:

For the preparation of the schedule the areas were prioritized according to the transfer volume on the existing belt conveyors, as well as operational interferences for the implementation of solutions.

The actions referring to the belt conveyor system and to the transfer specified in the report sent to IEMA by ArcelorMittal Tubarão, are not part of the schedule below as per example:

- The enclosure of coal transportation belt conveyors C5601 and C5602 in the stretch over the final effluent in the Coal Yard. Time limit: 12 months;
- The enclosure of coal and coke transportation belt conveyors BC332A and 215 in the stretch over Praia Mole Creek. Time limit: 12 months;
- Installation of material contention devices in the existing belt conveyors over RB23 channel. Time limit proposed: 22 months.

		Duração	Início	Término	2018												2019				2020				2021				2022				2023			
					T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4				
0	Plano Estratégico Correias Transportadora	1302 di	21/09/18	19/09/23																																
1	1 Início do Programa	0 dia	21/09/18	21/09/18																																
2	2 Sinterização	1302 di	21/09/18	19/09/23																																
3	2.1 Estudo / Engenharia	48 mese	21/09/18	31/08/22																																
4	2.2 Contratação / Implantação	48,8 mes	16/09/19	19/09/23																																
5	3 Coqueria Convencional	1028 di	21/09/18	31/08/22																																
6	3.1 Estudo / Engenharia	36 mese	21/09/18	05/09/21																																
7	3.2 Contratação / Implantação	36 mese	16/09/19	31/08/22																																
8	4 Coqueria Heat Recovery	642 di	18/07/19	03/01/22																																
9	4.1 Estudo / Engenharia	12 mese	18/07/19	12/07/20																																
10	4.2 Contratação / Implantação	24 mese	14/01/20	03/01/22																																
11	5 Aciaria	814 di	20/03/19	03/05/22																																
12	5.1 Estudo / Engenharia	20 mese	20/03/19	09/11/20																																
13	5.2 Implantação	30 mese	15/11/19	03/05/22																																
14	6 Plantas de Beneficiamento de Coprodutos	1002 di	15/11/19	19/09/23																																
15	6.1 Estudo / Engenharia	24 mese	15/11/19	04/11/21																																
16	6.2 Contratação / Implantação	34,8 mes	09/11/20	19/09/23																																
17	7 Altos Fornos	874 di	13/05/20	19/09/23																																
18	7.1 Estudo / Engenharia	24 mese	13/05/20	03/05/22																																
19	7.2 Contratação / Implantação	28,8 mes	08/05/21	19/09/23																																