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Research & Engineering Center
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REPORT OF TRIP TO TURNER BROS.
ASBESTOS CO., LTD.
REPORT NO. 2 OF 2
PRODUCTION FACILITIES

Fibre Used

Fibre is brought by ship to Liverpool or Manchester where, due to scare articles in British newspapers about health hazards, there have been labor difficulties in unloading. The fibre is brought in railway cars to Rochdale where a long conveyor carries the bags to the warehouse. The warehouse is multi-story and fibre is piled quite high on each. There is now about 18 months supply.

Most of the fibre was from Southern Rhodesia, although they told me that due to political problems they will not be able to get any from that source after February. The fibre from Southern Rhodesia was in jute bags and designated C and G1 and C and G2. I also saw some Bell 3T700 and Cassiar AA and AC. I saw a small amount of No. 1 Crude.

As I recall, they are having trouble continuing train delivery and are going to truck delivery at a considerable savings in freight cost.

Fibre Preparation for Textiles

As described in my previous report, the fibre is charged onto a turntable and a batching conveyor until 1500 lbs. is accumulated. Some of the batch contains reworked waste material. There is a waste treatment system that takes yarn that is reject, cuts it up and opens it in a hammer mill (Miracle mill).

The entire batch is dropped into a drum mixer of their own design. The mixer is about four feet in diameter and about 10 feet long. Two batches an hour can be mixed.

Through the shaft of the mixer a solution of a textile oil and water is sprayed into the fibre batch. The solution 4% by weight of the fibre batch. Thus, 60 lbs. of solution containing 30 lbs. of oil and 30 lbs. of water are added.

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After the predetermined time cycle, doors on the mixer automatically open and drop the mixer contents to a live bottom bin below.

The bin has a grate on bottom with heavy bars spaced about 3-1/4 inches apart. A shaft with spikes attached moves back and forth pulling fibre from the grate openings. Two such shaft assemblies cover the bin bottom as they traverse back and forth. I have a drawing of the spiked attachment to the shaft.

The bin was developed in cooperation with the Redler conveyor people. Original designs caused many problems which have been corrected.

From the bin the fibre drops onto a vibrating conveyor which in turn feeds a Redler conveyor. The Redler conveyor maintains a hopper above a textile type feeder full of fibre. The Redler lifts the fibre from below the live bottom bin to the fibre feeder located above a Canadian-type fibre willow. The willow is on the same elevation as the bottom of the live bottom bin. A low pressure air system conveys the willowed fibre to a cyclone located on an upper level. The cyclone feeds a Redler conveyor which carries the fibre to four feeders each feeding one rotary screen. The Redler conveyor keeps the feeders full. The fourth feeder must be run somewhat under capacity because there is no storage in this system.

The feeders above the screens are Williams-Tathams units.

The fines from the screening operation are discarded. The fibre retained on the screen drops to the floor below, where it is bagged in zippered, nylon-reinforced, PVC bags.

At Hendley-Green they installed a Redler conveyor system to take fibre from the live bottom bin to feed 40 cards. It forms a complete loop around a work area about 150 ft. wide by 300-400 ft. long. The Redler conveyor is simply a series of steel scrapers pulled by a chain running in a rectangular box. The box has holes on bottom for dropping out the fiber into a chute above each card. It had been thought that as the chute filled, the conveyor opening would stop feeding and fibre would be carried to the next card. This concept worked well for four cards but not for any larger number. They have had to add slide dampers below the Redler at each card. These must be manually opened and closed.

The chute from the Redler drops the fibre onto a small slat conveyor. This conveyor starts and stops when a swinging gate below is pushed sideways by the fibre when the feeder to the card is full. As the feeder empties, the swinging gate starts the slat conveyor and feeds fibre to the card feeder. When the feeder is full, the swinging gate is pushed aside and a microswitch stops the slat conveyor.

The system is not considered completely successful due to the need for a man opening and closing the gate valve under the Redler, high maintenance of the conveyor, and the ability to feed only one blend.

Cards

The card feeder feeds the fibre into a weigh hopper which accurately weighs the fibre onto a fibre feed conveyor. After the fibre, cotton is introduced in the form of a lap. The lap is very carefully prepared on machines that have several stages of picking and felting. The weight is also automatically controlled across the width of the cotton lap.

The carefully controlled lap, fed into the card, assures uniformity of cotton content in each foot of yarn. They couldn't understand how we could insure such uniformity without feeding lap into the cards.

The remainder of the finisher and breaker cards looked very similar to ours except that both cards were in line instead of side-by-side. Also they use tape condensers instead of ring doffers.

The apron conveyors are made of chrome leather.

Card Capacity

At Hendley-Green, I was told the cards make 75-90 lbs. per hour of yarn. The same must be true at Rochdale. They have four fibre preparation systems - each with a capacity of 3,000 lbs. per hour. There are 103 cards. If each card produced 90 lbs. per hour, three fibre preparation systems would handle the production with one as stand-by.

Spinning and Doubling

As mentioned in my previous report, practically all spinning and doubling is done on flyer-frames. A few ring frames are available for finer cut yarns. I don't know whether their system of measurement is the same as ours, but they told me they regularly made 70 cut yarn. They also told me that they had once made 200 cut yarn.

Looms

At Rochdale, there were 170 looms weaving cloth. They tried shuttleless looms but don't consider them satisfactory for asbestos cloth.

At Hendley-Green, I saw cards, flyer frames and looms working on crocidolite yarn and cloth. The operations looked dusty and unsafe.

At Hendley-Green, numerous looms were making thick cloth consisting of several plies held together with a binder thread. The binder thread was lubricated by an oil solution. The thick material, as much as 3/4 inch, are used for brake linings. Some looms were weaving a spiral cloth which was falling in circles around a mandrel. This cloth is used for clutch facings.

Rubber and Belting Shop

A rubber shop at Hendley-Green had two No. 3 Banburys - one driven by a 425 HP and the second by a 250 HP motor. From the Banbury they drop the rubber onto a sheeting mill. The slabs are attached to a conveyor and run through sprays to prevent adhesion of piled slabs. The slabs are run back and forth hanging from a trolley conveyor near the roof to give them some retention time for cooling. The slabs were carried back down to the mill operator for piling.

A rubber extrusion process, set-up very much like the one in Manville, was in use. A strip cut off a rubber mill was automatically feeding an extruder.

Flat conveyor belting and V-belts were made in this same shop.

Miscellaneous

I formed several impressions that are probably old news to people used to dealing with Europeans but new to me.

The English are quite formal in their business dealings. In the week I spent at Rochdale, I reached a first-name basis with only one man, although all my contacts were exceedingly cordial.

They are much more position-conscious than we are. There were several dining rooms at Rochdale for various levels of plant personnel. The men's rooms were similarly segregated. One bathroom I used was marked for managers only. Individual towels on hooks with the man's name on the hook were provided.

The men I met at Turner Bros. were quite a competent group. I was favorably impressed with their knowledge of the operations and their air of assurance and cordiality.

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