

full length rubber covered agitator. From an overflow at the top the chlorinated stock drops to a rubber lined pump which re-elevates it to the first bleachery washer.

All washers are identical in size namely, 16 ft. long X 8 ft. in diameter. However, some are rubber covered to resist corrosive action of bleaching agents utilized in this additional purification phase. The washers are drop leg type and are equipped with pneumatically loaded forming extraction and press rolls as well as hydraulically operated oscillating high pressure cleaning showers.

The chlorinated stock held by vacuum to the 1st washer face wire is pressed, washed with hot water, repressed to remove as completely as possible soluble chlorinated products of lignin left after cooking. Caustic soda solution of definite strength and predetermined volume is metered by rotameter as are all other bleach plant solutions, then added to the disintegrated pulp web. Direct steam injection is performed with the pulp and soda mixture in its passage through a double tier high density mixer so as to ensure complete homogeneity of treatment.

This hot causticized pulp drops into a tile lined steel plate tower 14 ft. in diameter by 40 ft. high, where extraction, solution and additional reactions occur. After sufficient retention time, the high density stock is diluted at the base of the tower and by means of twin screw conveyors is transferred to a dump or dilution chest where further white water is added prior to pumpage and again before entering 2nd washer vat. This system of handling is identical in all subsequent stages with stock and water flows etc. being remotely controlled from the operating floor at individual console cabinets for each stage.

After washing on the 2nd. washer, calcium hypochlorite solution is added to the stock web just prior to re-pulping, then through another double tier high density mixer to the hypochlorite tower. All towers used for bleach liquor reactions are made of tile lined concrete and are of the same overall dimensions as the 1st caustic tower. The bleach liquor decolorizes some impurities, reacts with others and those which are solubilized are washed out by means of hot water showers on the 3rd washer. To the warm pressed sheet is added caustic soda solution before proceeding to the 2nd extraction tower, where somewhat similar treatment and equipment is employed as is the 1st caustic stage.

The next stage is the second hypochlorite but in this case and in the next stage ~~if also required the~~ bleaching agent is sodium hypochlorite.

In the last stage concentrated sulphuric acid is added to the stock the volume being measured by rotameter to effect a certain degree of acidity prior to final washing ahead of bleached pulp storage chests.

The bleached pulp is passed through a consistence regulator before entering each of two tile lined stock chests for dryer machines.

Throughout the bleachery to effect economy in water consumption utilization is made of countercurrent washing to a great degree. Water however from the 1st stage due to degree of contamination is severed while 2nd stage water is partly consumed as shower water on the drumblers.

Calcium hypochlorite is made up batchwise from milk of lime and chlorine. Decantation and washing of sludge is performed to obtain clear bleach liquor and effect savings on chlorine and lime usage.

Sodium hypochlorite is continually manufactured in a pyrex absorption tower (packed with pyrex rings) by the action of chlorine gas on caustic soda solution.