Cost Cutting

Reprint 106

Modern Size Preparation Speeds Cooking Time... Cuts Costs

Reprinted with Permission from Textile Age, September, 1955 'Southern Print Cloth Mill Realizes Big Advantages' (Staff Prepared)

Preparation of size in approximately one-third normal cooking time plus a substantial saving by the replacement of thin boiling starch with pearl starch, is being realized by a large Southern print cloth mill with the aid of a Norcross Sizeometer.

Cooking time is now down to 17 minutes as against 1-1/2 hours under the old system. Savings by being able to utilize pearl starch amount to $0.60 per 100 lbs. and are expected to hit $3,600 on an annual basis. This is being accomplished by the mill in question on an operation involving one Cocker stainless steel cooking kettle and two Cocker high speed slashers. Warps are being run at 90 yards a minute and from 10 to 11 cookings take care of between 36 and 40 warps per two shifts.

One man takes care of the operation of the kettle and in addition, assists with the work in the slashing room. Prior to this installation, the mill had to employ one man full time with the operation of two kettles.

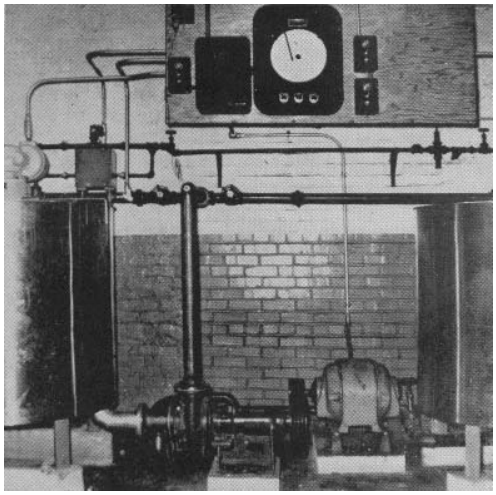
Actual operation consists of the following: Meter is set and 155 gallons of water are automatically pumped into the kettle. 200 pounds of Penick & Ford pearl starch is added plus 5 pounds of #120 Tex-size compound, 15 pounds of #511 compound and a small amount of Rohm & Haas Rhozyme La. The entire batch finishes at 207 gallons and is immediately pumped into storage where provision is made for 400 gallons. The mill does not cook its size too far ahead of actual use for if it is held too long and the temperature should drop, the mixture would start to gel. The size is held in storage at 210°F and arrives at the size box on the slashers by gravity feed at 208°F. The mill is averaging between 13 and 13-1/2 per cent pick up at 90 yards per minute on the slashers.

Viscosity Control Is Accurate

The complete Norcross system at this mill covers the preparation of the size by cooking and mechanical agitation under the control of a Viscometer so that each batch is finished accurately to the same viscosity. In actual operation, a pump withdraws size from the lower end of the cooking kettle and discharges it into a pipe mixer within the cooking kettle. Steam is also discharged in this mixer so that the size is agitated and actually cooked under pressure. Pressure that is built up in the mixer by the combined effect of the steam and the pump provides the advantages of pressure cooking and also extrudes the size from the mixer into the cooking kettle through orifices which further break down the size globules.

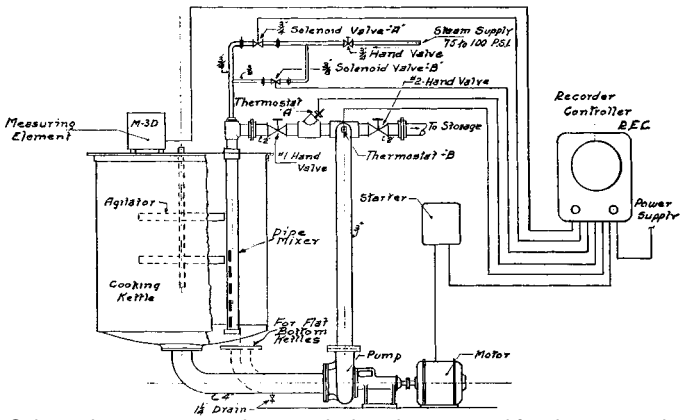
Once the ingredients are loaded in the kettle, the start button on the Viscometer is pressed. The Viscometer then completely controls the entire process, turning off the steam and stopping the pump when the size is finished to the correct viscosity.

Prepared size is then pumped quickly to storage kettles at the rate of 400 gallons per minute. This is done by opening one valve and closing another and then turning the switch to the position to manually operate the pump.



Typical sizeometer installation. A platform is used between the two kettles from which the Recorder and controls are accessible to an operator. Platform was removed in taking this picture in order to show the pump and motor.

The mill has found that complete automatic control provides uniformity that cannot be obtained with manual or time control equipment which does not take into consideration the variations that exist in the ingredients used in preparing the size.



Schematic arrangement shows typical equipment used for size preparation with the Sizeometer.

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