

Scapa Dryers, Inc.



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PAPER MACHINE CLOTHING

December 22, 1977

United Merchants and Manufacturing, Inc.
1407 Broadway
New York, New York 10018

Dear Sirs:

It was with considerable interest that we read the article by Razmic S. Gregorian and Chettoor G. Namboodri in the October 1977 issue of Textile Industries on the subject of foam application.

We manufacture dryer felts and fabrics for paper machines. To many of these fabrics we apply a resin coating of the epoxy-polyamide family. At this time the resin is applied from an aqueous emulsion and it would obviously be advantageous to us, according to the article to apply this as a foam finishing process. Not only might this prove to be beneficial from an energy saving point of view, but a more rapid drying operation would assist in keeping the resin where it is most necessary. For example on certain styles of fabric the resin tends to run to the cross over points of the warp and weft, rather than stay on the yarn itself.

This letter, therefore, is intended as an initial enquiry for further information on the foaming agents currently available and any thoughts you may have on their possible application to our process briefly outlined above. Should you consider that you have a foaming agent which may be of use to us in our process, we would be grateful for a sample in order to carry out our own laboratory evaluations.

We would mention that any information given regarding our resin formulation and method of application is confidential and we trust you will respect this confidentially both now and in future discussions.

We look forward to hearing further from you, but if in the meantime you wish to discuss any particular item in more detail before considering sampling, please call the writer.

Yours sincerely,
SCAPA DRYERS, INC.

W. T. Westhead
Technical Manager



WTW/iy

CC: Mr. H. J. Mark, Jr. A SCAPA GROUP COMPANY

SCNA 29359

Air In, H₂O Out in Wet Processing

UM & M has developed techniques using air instead of water as the primary medium in bleaching, dyeing, printing, and finishing. Foams are getting priority attention, although sprays also show promise

In an article on energy conservation in **TEXTILE INDUSTRIES**, Senior Editor Stanley M. Suchecki noted that, "Water consumption and energy consumption are often inseparable; if you reduce water usage, you will invariably cut down steam consumption and simultaneously reduce the volume of effluent for treatment." He further reported, "The wet processing industry, including bleaching, dyeing, printing, and finishing, consumes about 55% to 60% of the total energy consumed by the industry."

United Merchants & Manufacturers, Inc., for the last several years has been concentrating on developing wet-processing techniques which use air instead of water as the primary diluent.

Foam Technology Comes First

Initially, two methods were evaluated—liquid sprays and foams. While both methods showed considerable promise, the decision was made to concentrate on developing the technology based on foams. In certain applications, a coupling of the two processes yields benefits not realizable by either individually.

In foam finishing, the process consists of mechanically foaming a suitably formulated finish mixture or dye formulation, applying the foamed composition to the fabric on conventional equipment such as a knife over roll coater or a horizontal pad, and then causing the foam to collapse before subjecting the fabric to drying and fixing operations. The main advantage of the process lies in the fact that the wet pickup by the foam finishing and dyeing process is usually less than half of that obtained by a traditional padding operation.

Foam wet processing methods are currently being used by United Mer-

BY RAZMICKS GREGORIAN
and
CHETTOOR G. NAMBOODRI
United Merchants & Manufacturers

chants plants for the application of various finishing agents such as resin finishes and softeners to a variety of fabrics. The Valchem chemical division of United Merchants has introduced to the textile industry, under the trade name of Valfoam, a group of finishing reagents which has been evaluated successfully at several plants. In all cases, reduction in energy consumption on the order of 30% to 50% has been reported.

In cases where the ability to drive off water was the rate-determining step, two- to three-fold increases in production rates have been achieved when a foam finishing system was substituted for the traditional pad-dry-cure finish system. The higher production rates naturally result in a significant reduction in the processing cost of the fabric.

In addition to the already commercialized finishes, pilot-plant trials have been run in which water-repellent and soil-release finishes have been applied to a variety of fabrics including acrylic sliver knits and nylon upholstery fabrics. Phosphonium-based flame-retardant finishes have been applied to cellulosic substrates and ammoniated without an intervening drying operation. Initial results show considerable promise.

A method for fixing phosphonium-based systems with foamed concentrated aqua ammonia instead of gaseous ammonia is under investigation. Initial results look quite interesting.

Foams in Dyeing

The use of foams in other continuous wet-processing operations

such as bleaching, dyeing, and printing has also been evaluated. The continuous dyeing of nylon carpets with acid dyes shows considerable promise. Pilot plant runs demonstrate that good dyeings can be obtained at wet pickups as low as 30% to 50%. Fixation is obtained after a steaming time of 2 to 4 minutes in an atmospheric steamer. The carpet picks up little or no water in the steaming operation.

Since in the majority of cases good to adequate crock fastness is obtained without an afterwash, a very significant saving in water and energy consumption is realized. Polyester carpets have been dyed with



Pilot plant range foam coating head

United Merchants & Manufacturers Inc.

1467 Broadway

New York, N.Y. 10018

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"Gaston County makes as good a dyeing machine as you'll find on the market. And their service is great."



Everybody in the industry knows we make a superior product. But not everyone knows we offer superior service. Tom Page knows.

Tom, who is Superintendent of Dyeing and Finishing at Greenwood Mills' Edisto plant in Orangeburg, S.C., has used our jet equipment for over seven years.

"I don't have a lot of trouble like my friends who use other machines", Tom says. "My Gaston County equipment runs and runs."

"But when I do have trouble, their service people are always efficient, always ready with a good solution."

"And I like their attitude. There's a Gaston man here now, working on a conversion.

Ever since he came, he's jumped in to help me solve other problems."

No matter what kind of service our customers need, what they need most is simply this: to keep running. Profitably.

That's why we provide a group of highly dependable mechanics, plus a team of technicians which includes processing specialists. Experienced engineers. And skilled instrument men.

Like Tom Page, some of the most successful names in the industry depend on Gaston County.

So can you.

Tom Page depends on Gaston County.



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Circle No. 31 on Inquiry Card

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