



## Case Study

Morarjee is a leading player in the premium cotton shirting fabric and high fashion printed fabric segments. Morarjee's subsidiary company, Integra Apparels and Textiles Limited, specializes in readymade garments. Both companies sell their products globally and are extremely quality conscious.

### Background

Finished fabrics are washed in a print washer, which carries out a multi-stage washing process. First the fabric passes through a bath of caustic solution, which is alkaline in nature, followed by a bath of acetic acid to neutralize the alkalinity in fabric, and finally into a rinsing bath. The acetic acid bath solution needs to be maintained at a precise pH level for optimum fabric washing and also to prevent damage of the fabric texture.

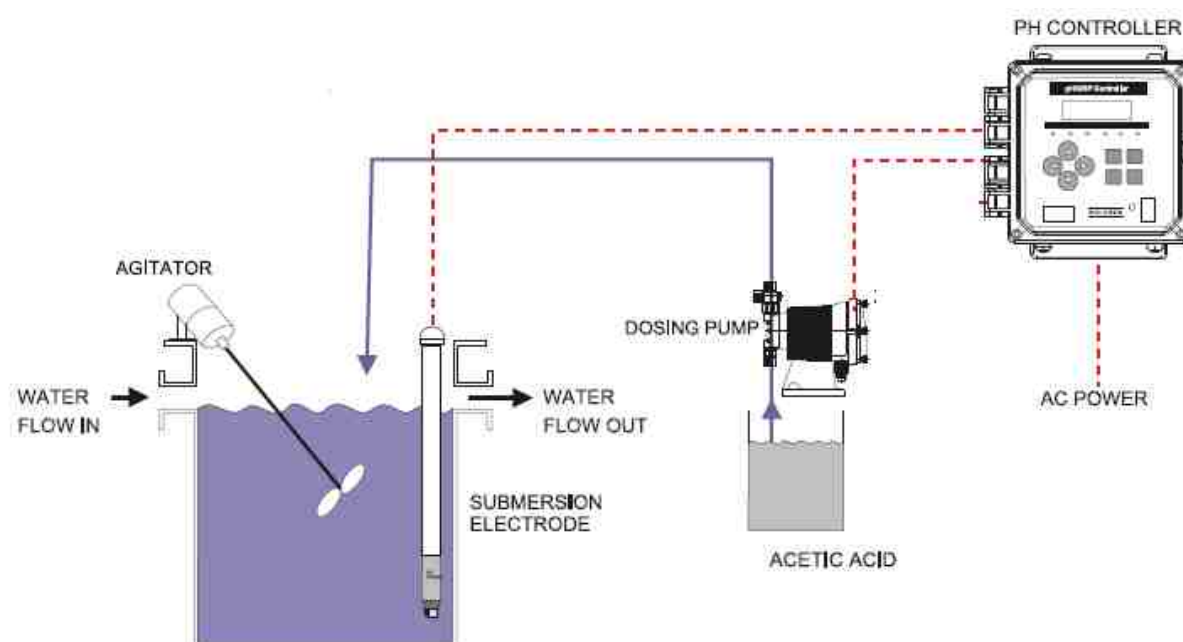
### Challenge

The critical part of the whole process is maintaining the permissible pH level of the acetic acid washing solution in the bath consistently and accurately based on different fabric characteristics and reactions. The usual practise by the plant operators is to measure the pH value of acetic acid bath manually and then add chemicals to get the desired recipe. It is however very difficult to maintain a consistent pH level by this method. Manual operation also leads to:

- Process and production delays
- Inaccurate recipes
- Improper cleaning of fabric
- Extra man-hours
- Wastage of expensive chemicals

### Solution

After a comprehensive study of the system, A.T.E. suggested an integrated solution based on a Walchem "online" pH controller WPH410 with an inline pH sensor which continuously senses and measures the pH levels of the solution in the bath, and a bellows pump, all mounted on a single skid. Accordingly, the controllers operate the dosing pump/s to dose the required measure of chemicals proportionately into the bath so as to keep the pH values at the desired level. The total process of measuring and dosing is fully automated.



Flow diagram of dosing system



Walchem Controllers

## Result

With the Walchem automated process, Morarjee Mills has been able to gain following benefits:

- Consistency of fabric quality
- Accurate online chemical dosing
- Maintaining of precise pH value of acetic bath solution recommended for each type of fabric
- Saving of expensive chemicals
- Increase in productivity
- Fully automated operation without any manual intervention

Naturally, Morarjee Mills is fully satisfied with the results after the installation of the Walchem controller, and this also shows the way forward for other mills for ensuring consistent fabric quality.