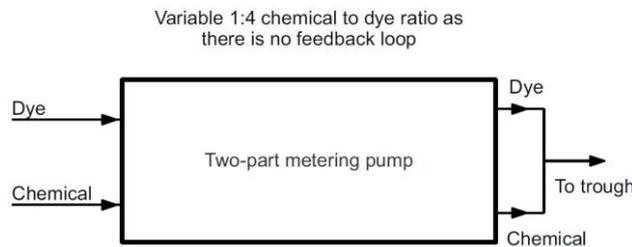


## Application note

### A.T.E.'s continuous dosing system to eliminate variations in CPB dyeing

#### Problem

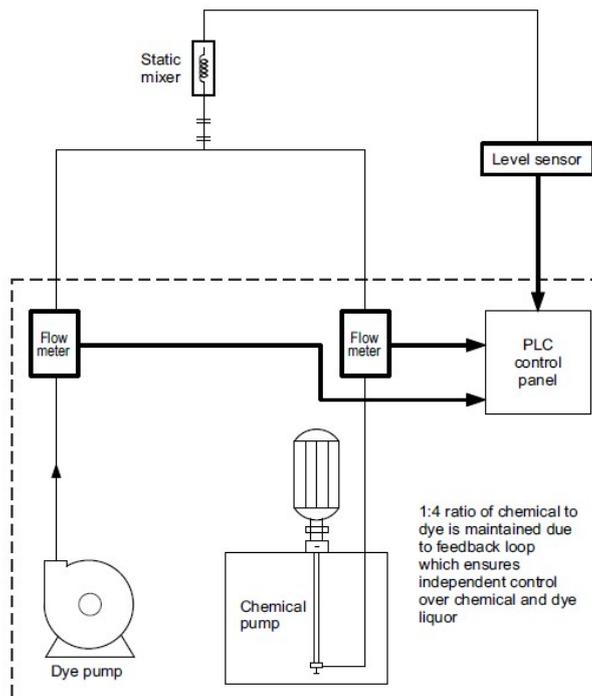
In the cold pad batch (CPB) dyeing process, it is vital to maintain the exact 1:4 ratio of chemical to dye to produce a dyed fabric that is uniform in tone and hue. Conventional systems designed to maintain this 1:4 ratio consist of a two-part metering pump in which the colour and chemical are dispensed based on the total liquor replenished into the trough. However, due to the absence of a feedback loop, it is not possible to consistently maintain the chemical to dye ratio of 1:4, affecting the fabric in tone and hue and leading to depth variation along the length of the fabric dyed.



Two-part metering pump diagram

#### Solution

A.T.E.'s continuous dosing system eliminates this variability in the chemical to dye ratio through tight synchronisation between the two pumps with the help of a PLC and feedback from the flow meter.



Continuous dosing system diagram

As shown in the diagram above, both the dye and chemical pumps are regulated through a feedback system that receives real time input from individual flow meters. Thus, the ratio is kept constant by controlling the speed of the chemical pump with help of a VFD (variable frequency drive) that is in sync with a dye pump. Even a small change in the flow of the dye pump is sensed and the chemical pump will act quickly to keep the ratio constant.

**Benefits:**

- Level sensor feedback from the trough ensures **that there is no overflow of liquor**
- **No manual intervention required;** pumps are automatically regulated as long as the dosing station or the fabric transport is switched on
- Actual dosing feedback is received from the flowmeters and is compared and corrected continuously with the set point threshold, **thus ensuring consistent dyeing results**