

# CASE STUDY

## Paper Machine #3 of a Kraft Paper Company in Ho Chi Minh City, Vietnam



### Problem

- Heavy steam loss
- High SSC of ~ 2 T/T
- Manual steam pressure control
- Paper overheating and breakage
- Low condensate recovery factor

### Objective

- To prevent live steam loss and properly utilize flash steam
- To optimise paper machine speed and capacity
- To maximise condensate recovery factor
- To reduce SSC to 1.9 T/T

### Solution

Forbes Marshall carried out a detailed study of the plant, determined areas of concern and redesigned the entire steam system. Following changes were implemented in the new design

- SteaMon vortex flowmeter for steam flow monitoring incorporated
- The 26 MF dryers were divided into 06 thermal groups, with 06 individual pressure control stations and PID-based control valves
- Steam header for thermal groups equipped with compact module thermodynamic trap, air vent, pressure gauge and piston valve
- Each of the MF dryers equipped with a complete single orifice float trap based steam trapping solution
- Separate flash vessels to optimize flash steam recovery at pre-section and post-section
- Multivalve steam operated condensate pump MV55 to pump hot condensate

### Benefits

- Significant reduction in SSC - committed was 1.9 T/T; actual SSC after implementation is 1.3-1.4 T/T
- Accurate steam metering
- Improved paper quality
- Increase in daily and monthly paper yield
- Flexible operation
- Safer and cleaner site
- 90% condensate recovery factor, with no additional electricity costs