Textile Industry
Steam and Process Control Solutions
Textile Industry

Textile (dyeing and printing plants) are energy extensive industries. In the face of rising costs and increased competition, efficient utility management is a major focus area in the textile industry.

For over 70 years, we have partnered the industry in providing solutions in control instrumentation, energy conservation and environmental monitoring. Our teams of the finest engineers are dedicated to serve the process industry across diverse sectors. World class manufacturing facilities and technology enable us deliver quality solutions globally. Our unique complimentary expertise in steam engineering and process control enables us engineer customised systems that improve manufacturing processes, conserve energy and are environmentally sustainable.

Specific Energy Consumption Norms

<table>
<thead>
<tr>
<th></th>
<th>SFC (NG)</th>
<th>SFC (Coal)</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Best Plants</td>
<td>Average Plants</td>
<td>Worst Plants</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Cotton Blend</td>
<td>0.5</td>
<td>0.7</td>
<td>1.1</td>
<td>1.02</td>
<td>1.43</td>
<td>2.2</td>
</tr>
<tr>
<td>Polyester</td>
<td>0.35</td>
<td>0.62</td>
<td>1.03</td>
<td>0.75</td>
<td>1.26</td>
<td>2.1</td>
</tr>
<tr>
<td>Hosiery ( Mercerised Cotton)</td>
<td>0.42</td>
<td>0.78</td>
<td>1.36</td>
<td>0.85</td>
<td>1.6</td>
<td>2.65</td>
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</tbody>
</table>

*Above values are based on our survey across the industry segment
SFC (NG) = Nm³ of NG / Kg of cloth; SFC (Coal) = Kg of coal / Kg of cloth

Our association with the textile industry over the past seven decades enables us to map specific energy consumption. Our tailored solutions deliver improved plant efficiencies.
Improving Steam Systems in the Textile Industry

Next Practices
6%
Heat Recovery from Dye Liquor and Effluent

Optimising Efficiency
6%
Boiler sequencing and load management
Boiler Efficiency Monitoring
Liquor Ratio Control
Moisture control on Drying ranges
Capacity Utilization
Steam Metering

Stopping Wastages
16%
Right steam pressure and steam quality
Efficient steam trapping
100% recovery of recoverable condensate and flash steam
Temperature controls
Proper direct steam injection system at reduced pressures
Arresting leakages

Energy Services for the Textile Industry
Forbes Marshall provides services to help build reliable, energy efficient utility systems for the process industry thereby achieving new benchmarks.

1. Basic and Detail Engineering
2. Project Management
3. Steam System Design Hazop
4. Cogen Feasibility and Engineering
5. Stress Analysis
6. Process Energy Optimisation with Automation
7. Steam System Training
8. Energy Audits
9. Safety Audits
10. De-bottleneck Audits
11. Energy Management System Audits
12. Steam System Management
<table>
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<th>Text</th>
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<tr>
<td>Leading Textile Plant in West India</td>
<td>“We have a zero downtime steam system for over 5 years of operation with sustained levels of specific steam consumption. Forbes Marshall products for our steam system have enabled the plant to operate at highest levels of productivity and energy efficiencies.”</td>
</tr>
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<td>Leading Textile Plant in West India</td>
<td>“Forbes Marshall condensate recovery solutions have helped us to achieve and sustain a condensate recovery factor of 90% and specific energy consumptions of 1.1 kg of coal/kg of fabric.”</td>
</tr>
<tr>
<td>Leading Yarn Dyeing Plant in North India</td>
<td>“Forbes Marshall’s engineering design and products have helped us to benchmark our plant with an SFC of 0.5 kg product/ kg pet coke.”</td>
</tr>
<tr>
<td>Leading Textile Plant in Sri Lanka</td>
<td>“We have increased the productivity level by 30% with reduction in steam utility cost by 40%. With energy audit suggestions from Forbes Marshall, we have switched over from steam purchase model to a new fully automatic biomass boiler. We are currently achieving S:F ratio of 4.5:1 on husk with stable pressure output and zero downtime.”</td>
</tr>
<tr>
<td>Leading Textile Plant in Egypt</td>
<td>“We are recovering 100% condensate from our dyeing unit with Forbes Marshall’s condensate recovery system with sustained Condensate Recovery Factor (CRF) of 84%”</td>
</tr>
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<td>Leading Textile Plant in Bangladesh</td>
<td>“We have revamped our steam system based on recommendations from Forbes Marshall. As a result of arresting leakages in the distribution network by replacing float traps and installing a condensate pump, we have achieved a 17% reduction in the boiler fuel bill. Installation of a Waste Heat Recovery Boiler has further reduced the boiler fuel consumption by 8%.”</td>
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