

# PT Sadhana, East Java, Indonesia

## NDC's complete TM710e moisture-temperature measurement system enables PMD plant to control blend quality with highest accuracy

PT Sadhana has teamed up with NDC Technologies for the supply of on-line moisture and temperature measurement for the new PMD plant in East Java, Indonesia. The new PMD is designed to manufacture bespoke cut rag blends for Sadhana's growing number of customers across Asia and the Middle East. With this in mind, the 12 ton per hour line has excellent flexibility for processing both light and dark lamina and, of course, stem. The processing equipment includes a mix of drying and casing technologies to produce blends with excellent flavor characteristics, while offering the highest expansion capabilities for both lamina and stem.

The main characteristics that set Sadhana's PMD apart is the option to run small or large operations, depending on customer demand, and to be able to change from plain flue cured blends to fully cased American blends seamlessly. In addition, the PMD was designed to run on an automated dry weight basis to achieve the highest accuracy in blending, flavoring and drying. It was clear that accurate and stable moisture measurement was essential for this strategy to work. Central to this strategy was the choice to use the TM710e tobacco sensor from NDC.



### Installation Considerations

Besides the operational ability to use the TM710e for process control there were installation considerations for Sadhana, like most tobacco companies, relating to the use of multiple sensors across a factory environment where ambient conditions can vary considerably. One of the most obvious concerns is the ability to operate in highly variable humidity conditions; after all, the key function of the sensor is to measure the moisture in the tobacco, not the changing moisture vapor in the surrounding air. As the predominant on-line moisture measurement method, NIR (near infrared) is an optical technique; so, the various ambient lighting conditions must not affect the sensor performance. Furthermore, variable tobacco flow rate encountered during run in and out (especially with short operations) can lead to variations in bed depth and height. These conditions must not affect the moisture measurement.

Taking NDC's policy of supplying fit and forget solutions, each and every sensor is identical and ready to use - right out of the box. Sadhana has been able to simplify and standardize all 15 moisture measurement installation points without worrying about issues of ambient lighting, humidity, temperature or tobacco bed height.



## Operational Strategy

From the control room, operators are able to manage moisture data from 15 on-line TM710e sensors. The TM710e sensors are all connected to Sadhana's PLC networks to enable process control. In addition, they are integrated into NDC's GaugeToolsXL software for measurement visualization, calibration and diagnostics.

Already, Sadhana has processed over 100 different blends for different customers and clearly a complete solution for the management and control of the sensors, fully integrated with the factory PLC systems, was seen as key factor in choosing NDC.



## Quality Assurance Strategy

In the factory control room, QA staff use NDC's GTXL software to confirm settings for new blends and manage existing blends. NDC has focused attention on minimizing sensitivity to the natural tobacco variations and the proven repeatability of the TM710e measurement allows Sadhana to use the existing product calibration, invariably with no change necessary.

When a Sadhana customer places orders for a new blend, QA staff and operators have adopted NDC's Best Practice Strategy to get up and running with an accurate stable measurement as quickly as possible. Through their expert knowledge, staff characterize any new blend in terms of tobacco grades, casings and humectants applied and then choose product calibrations from existing blends, as the most likely candidate. The usual on-line sampling, for cross checking with the chosen laboratory method, is facilitated through the TM710e sample function. The product calibration is then validated using GaugeToolsXL software.



## Reduced Cost of Ownership and Maximum Return on Investment

Summarizing Sadhana's choice of the TM710e, the key success factors are:

- ▶ NDC's TM710e is known to be used globally as a standard for on-line measurement
- ▶ The TM710e, devices and software smoothly integrate with the tobacco processor's plant
- ▶ Stable and repeatable measurement - unaffected by changes in the ambient conditions
- ▶ Proven commitment to excellent support for the tobacco industry, both globally and locally

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