Standard for reliable sampling

Valmet Nove

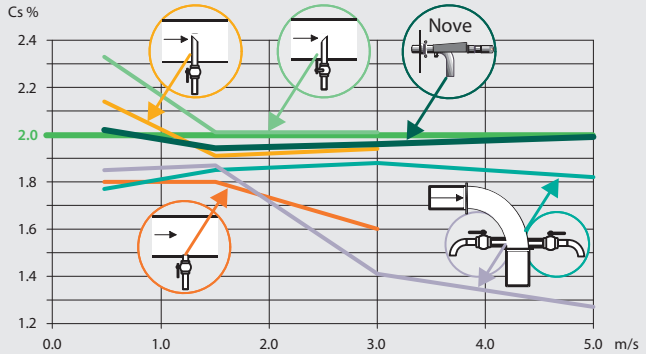
Over 30,000 consistency samplers for furnish management

Reliable sampling is one of the greatest challenges in consistency control. In the 1980s this problem was studied in extensive customer tests. Development work based on the results of these trials created a new, revolutionary sampler. Today, Valmet Consistency Sampler (Valmet Nove) and Valmet High Consistency Sampler (Valmet Nove H) are the "de facto" standard samplers in numerous pulp and paper mills around the world.

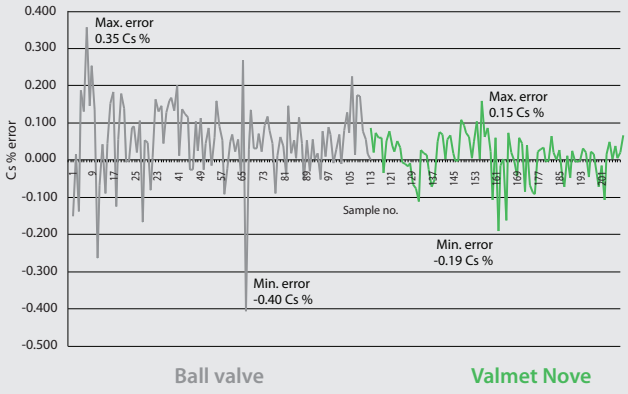
The three crucial challenges in sampling are repeatability, representativity, and safety. Ball valves are commonly used for sampling. However, mill experience and several independent performance tests have demonstrated that ball valves are not a good choice: the consistency of the sample tends to be lower than the actual process consistency. The reliability of sampling is also impaired by many factors: water layer along the pipe wall, ow rate variations, the in uence of testers, process and temperature, splatter, plugging, etc.

High repeatability

An independent university study showed that it takes no less than eleven ball valve samples to reach the same con dence level as with two samples provided by Valmet Nove. Varying process conditions as well as human factors have a considerable e ect on sampling with ball valves. In contrast, Valmet Nove is insensitive to ow variations and reduces variations caused by operator skill and sampling practise. Consistency samples are the only standard when calibrating consistency transmitters and evaluating their operation. Poor sampling complicates and slows down the calibration procedure. It also compromises the correlation and lowers operator con dence, thus requiring more frequent testing and follow-up. In addition, process optimization is based on reliable measurement and controls. Therefore, all actions that contribute to better consistency control are worth the investment. This is why Valmet Nove is the sampler of choice for thousands of users.



The gure illustrates the ow dependence of di erent type of samplers. The Valmet Nove sampler is the only one with high repeatability over the wide ow range.



This trend shows the di erence in mass-balance calculation using a ball valve (grey) and the Valmet Nove sampler (green). Over 50% better result was achieved using the Valmet Nove sampler.

Standard deviation
0.10 Cs %
Average 0.05 Cs %

Standard deviation
0.06 Cs %
Average 0.01 Cs %

Never forget safety

There are also other methods than ball valves commonly used for sampling. There are poppet valves with a very large opening, and multi-turn plug valves which not only yield a less than representative sample but provide inconsistent results, as they are greatly in uenced by the tester. As is the case with ball valves, safety should be a major consideration when trying to operate these valves.

The high process temperatures and pressures can make sampling dangerous, when conventional valves are used for sampling. The piston stroke of the Valmet Nove is adjustable, providing exactly the required ow rate for each application. Moreover, the sample ow terminates where the sample can be handled without unnecessary risk. The Valmet Nove has been designed to take representative samples safely.

Representative sample

Sampler performance must not be a ected by variations in process conditions. It must also allow installation in the best possible location for optimum calibration. The ideal construction of the Valmet Nove sampler and its back ushing feature combine to ensure representative sampling year after year.

For all pulp grades

Safety of operation and non-plugging sampler head construction were leading considerations in the development work, and accessories such as the MUKI sample collection pot ensure easy and safe sampling even in di cult applications (e.g. digester blowline).

Intensive research and development work for the bene t of our customers has made the Valmet Nove sampler family the market leader in pulp and paper processes. The delivered samplers are solid proof of our success in this challenging area.

Smart sampler

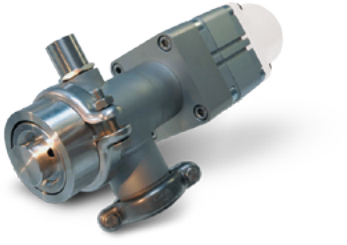
Consistency transmitters are getting smarter all the time, and this opens new possibilities for closer communication between the transmitter and sampler. Today's Valmet Nove samplers can be equipped with an open/ close detector which enables automatic synchronization of the sampling operation: the transmitter reads when a sample is taken, and stores the measurement result for later analysis or calibration. This function contributes to superior consistency management and process control.

Valmet Nove S22P

Valmet Nove T22M

Valmet Nove S22M

The Valmet Nove sampler is suited for screened pulps up to 8% Cs.



At higher consistencies (up to 18% Cs) and unscreened pulps, the patented Valmet Nove H is the sampler of choice.

Valmet Nove with pneumatic operation, example installation

1. Manual switch for sampling
2. Sampler open/closed detection (option)
3. Back ushing water valve
4. Flushing valve
5. Funnel

For more information, contact your local Valmet office. www.valmet.com

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