WoodClassifier

WoodClassifier to identify soft to hardwood mix ratio

Glue reduction and optimized production management in MDF/HDF and particle board production.

Soft and hardwood need different amounts of glue to achieve a defined board quality. But, in many plants the real mix of the two wood classes is unknown due to processes in the wood yard, storage, etc.

Often, materials are stored in silos but it is unknown, whether the silos are really filled with one wood class only. Thus, the exact ratio between hard- and softwood is often only estimated. As a result, mixtures are common and the mill has to adapt to this.

But, as soft and hardwood need different amounts of glue, plant operators often use additional glue to be on the safe side. Saving glue is the target of WoodClassifier.

APOS addresses exactly this point with its WoodClassifier product, which is an extension to APOS ModularNIR and can be used with single or double sensor systems. APOS WoodClassifier allows recognition and visualization of the mixture ratio. The data can be transferred to the plant control system. The plant control system in a next step allows either optimized use of glue and/or an optimized mix of the wood qualities (e.g. by automatically adjusting the speed of screws emptying the silos).

Figure: Screenshot WoodClassifier (single sensor system, double sensor possible)

APOS has adapted the APC (APOS Prediction Calculator) and has created calibrations for common wood types, using many hundreds of wood chip samples and hundreds of further mixed samples.

The information of various wood types is included in the near-infrared spectrum and are analyzed by APOS analytics software APC. Interferences (such as noise, scattered light, surface influences, temperature) are eliminated by APOS' APC to achieve stable results under all typical environmental conditions.

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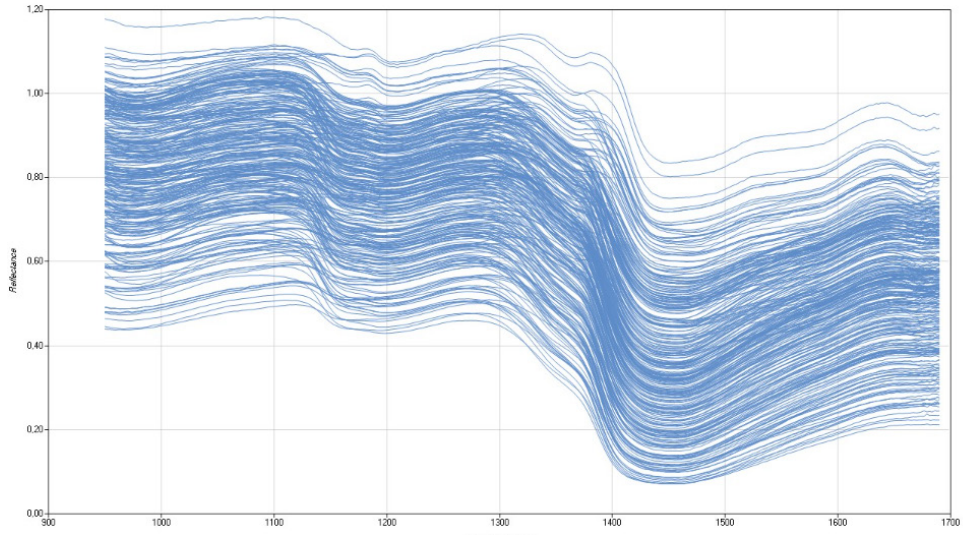

Figure: NIR-spectrum chip mixture

APOS recommends to use a measurement location prior to the digester as measurement of the wood class on wood chips leads to much more reliable results than measurement on the fiber. Also, measurement before gluing gives the chance to adjust the gluing based on the information of the wood mix.

Water content/moisture measurement can be done by the same system in parallel and can be used to optimize the throughput in the digester!

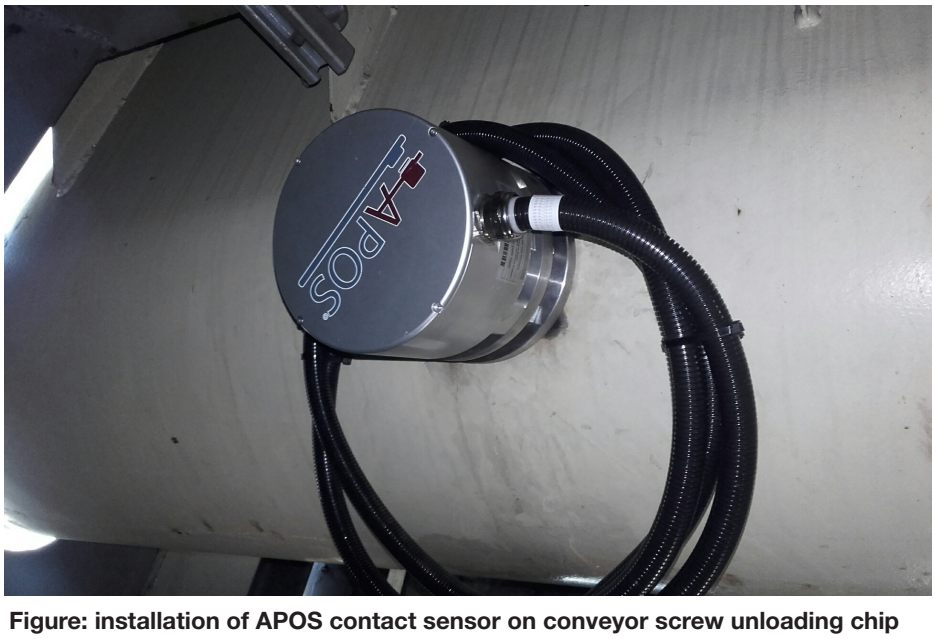

Figure: installation of APOS contact sensor on conveyor screw unloading chip silo in MDF production

WoodClassifier needs APOS' ModularNIR product as the system basis. Measurement of other parameters is possible. The measurement speed of < 1sec does not change by the number of parameters. All the hardware flexibility regarding number and type of sensor (distance or contact measurement) as determined by ModularNIR can be implemented.

More questions? Please contact us any time to discuss further!