



Application Notes

MOISTURE IN TOBACCO – MEASUREMENTS IN THE PRIMARY

Moisture % is critical throughout the whole tobacco process, from green leaf threshing to primary processing; it affects not only smoking quality, but also storage properties, “filling properties”, tobacco wastage and machine ability.

Primary Processing Plant

Different grades of tobacco are treated, blended and cut into “rag” to achieve a homogeneous final blend with good filling power and minimal wastage. The varying tobacco types undergo different processes on route to the final blending cylinder. The treatments include: conditioning, casing, toasting, re-ordering, rolling, cutting, expansion and drying, and nearly all require the product to be at an optimum moisture % prior to or post treatment.

Air cured lamina line, Burley: DCC (Direct Cylinder Conditioning) – casing – cylinder – toaster - re-orderer - leaf blender – cutter – dryer - final blender

Flue cured lamina line, Virginia: DCC-leaf blender-cutter-dryer-final blender

Stem line: DCC-cutters-expansion-dryer- final blender

Expanded tobacco: DIET process-final blender

Add backs: Reconditioning Sheet process-final blender

Measurement Locations

1. Exit Strip Conditioners; moisture distribution is very uneven, measurement recommended for trending purposes only.
2. Exit Stem Conditioners
3. Exit lamina cutters
4. Exit cut lamina dryers
5. Exit stem rollers
6. Exit stem cutters
7. Exit stem expansion process (WTS)
8. DIET line
9. Reconstituted sheet
10. Shorts (reclaimed from scrap cigarettes from manufacturing process)

Gauge Installation

Product flow should be continuous, and of sufficient bed depth so that the transporting medium is not seen by the gauge.

Pass height tolerance is such that if the gauge is mounted perpendicular to, approximately 8 inches from the tobacco, readings will remain unaffected by changes in the bed height.

A vortex air cooler is required if ambient temperature is $> 120^{\circ}\text{F}$ in the gauge location.

In all instances, the best location is one where there has been recent mixing of the tobacco (i.e. after free fall) to gain the most representative moisture reading.

Measurement Performance

Measurement	Range	Typical Accuracy
Cut lamina	20-30%	0.4%
Cut lamina (exit dryer)	12-18%	0.3%
Whole stem	20-30%	0.5%
Cut rolled stem (exit cutters)	15-30%	0.3%
Water treated stem	35-50%	0.5%
Water treated stem	10-30%	0.3%
DIET	3-15%	0.2%
Recon. sheet	12-20%	0.4%
Shorts	10-15%	0.3%