Glossary of Terms Continuous Weighing

Aerated - A condition whereby a dry material entraps air and can cause the material to “flood” or “flush” through the feeder. Often caused when the material is Allowed to free-fall or is pneumatically transferred.

Agitator - A device used to promote the flow of materials inside a hopper. Usually Installed above the metering screw in Volumetric and Loss-in-Weight Feeders to prevent bridging and rat-holing.

Angle of Repose - The angle created between a horizontal surface and the sloping line of a pile of material, when it is poured onto the horizontal surface (usually tested by Pouring material through a funnel) – see also Surcharge angle.

Auger - A device for delivering material out of a Volumetric and Loss-in-Weight screw Feeder (also see metering screw).

Belt Weigher - See “Conveyor Belt Scale”.

Bridging - A condition whereby material “arches” over a hopper outlet and material stops flowing.

Bulk Density - The weight of material for a given volume. Usually expressed in terms of kg/litre, kg/m^3 or lbs/ft^3.

Calibration Chain - A device which consists of one or more strands of roller chain which is restrained on a belt above the weighing system. The belt is run and the chain simulates material loading. The weigh system can be then calibrated.

Capacity (Rate) - The maximum throughput of a feeder, or conveyor, expressed Volumetrically (m^3/hour), or mass (kg/min or kg/hour).

Capacity (Volume) - The capacity of a hopper expressed in litres, m^3 or ft^3.

Compaction - A condition whereby material compresses or hardens when under load. Usually associated with fine cohesive powders.

Conveyor Belt Scale- A device which is installed into a conveyor to measure the mass rate and Mass total passing over the conveyor. Also known as “Belt Weighers” and “Weightometers”.”Belt Scales”

Idler - A device which consists of one or more rolls which supports the belt on a Conveyor.

Integrator - An electronic device for integrating belt loading and belt speed signals to produce mass rate and mass total readings.

Load Cell - A device, which converts mechanical load or force into an electrical signal.

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Loss-In-Weight Feeder (Batching) - A device which discharges material based on weight. Discharges material Until the set point is achieved.

Loss-In-Weight Feeder (Continuous) - A device which discharges material based on weight loss over a given time. The feeder compares the weight loss per second/minute and compares it to the required set point. The controller automatically adjusts the Feeder Speed to increase or decrease the output.

Lump Size - The physical size of the material particles to be fed i.e. length x width x height.

Refill - On loss-in-weight-feeders, the hopper will need to be refilled when material reaches a low level, usually by an overhead hopper or screw conveyor.

Stringers - A term which describes the conveyor structure that supports the idlers and belt on a conveyor.

Surcharge Angle - Similar to the Angle of Repose, however measured on a moving horizontal Conveyor with a belt speed of typically 90 metres/min.

Tacho - Short for Tacho Generator./Tachometer. Originally used as a Belt Speed Sen Scales and Weigh Belt Feeders. The term is still used, however they have been replaced by Digital Encoders.

Troughing Angle - Refers to the angle of the side rolls on a conveyor idler. Typical angles are 20^0, 30^0, 35^0 and $45^{0.}$.

Turndown Ratio - The ratio between the maximum and minimum throughputs possible for a particular feeder. Typically expressed as a ratio like 5:1 or 10:1.

Volumetric Feeder - A device for metering out material by means of screw, vibration or belt. Not supplied with a weighing system, and output is varied by use of a Variable Speed drive controller.

Weigh Belt Feeder - A device which consists of a conveyor with an in-built weighing system, which measures and controls the mass rate of material passing over it. Varying the belt speed controls the Rate.

Weigh Conveyor - A device which consists of a conveyor with an in-built weighing system, which measures the mass rate of material passing over it. Belt speed is constant.

WeighFrame - The mechanical component of a Belt Scale which is installed into the conveyor and supports the idler(s) and belt.

Weightometer - See “Conveyor Belt Scale”.