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Technical Bulletin ***TB -0011***

Calibration of Injection Systems

Calibrating the feed rate on a reagent injection system is necessary to ensure proper operation of the feed system. Generally, reagent is fed into the duct work of a foundry baghouse system at a given add rate to stabilize the heavy metals within the particulate matter collected. In order to verify proper equipment operation, regular calibrations of the feed unit are taken. Calibrations show if the equipment is feeding the proper amount of product, potentially allowing a problem to be found prior to generating a bigger problem further down the line.

To perform a calibration, the reagent is collected as it discharges from the feeder for a specific period of time. The material is then weighed and a calculation can be made to figure out the feed rate in lbs/hour. For instance, in the YouTube video we show 152 grams of product is collected over 20 seconds. We then multiply 152 x 3 to get the amount of product in a minute (456g) and then multiply that number by 60 to get the amount of product in an hour (27,360g). In order to convert the grams to pounds we divide the final number by 454 (there are 454 grams in a pound) to get the feed rate on this unit of 60 lbs/hr.

Treatability testing identifies the needed add rate for a specific system. This is typically calculated on a percent by weight basis. We then work with the customer to calculate the total dust generation and calculate the add rate % in pounds per hour. During startup we take dozens of calibrations to verify we are getting the proper add rate, sometimes adjusting vibrator settings and/or auger speeds to optimize this. Once dialed in, we suggest the customer check the calibration of the unit regularly. Doing this consistently allows you to verify the feeder is operating correctly and avoids a potential problem with the generated waste.

*Search YouTube: Proper Feeder Calibration Method for Video

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