



Electronic Truckload Scales

Prepared for
Bureau of Highway Construction
Division of Transportation Infrastructure Development

Prepared by
CTC & Associates LLC
WisDOT RD&T Program
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Transportation Synthesis Reports (TSRs) are brief summaries of currently available information on topics of interest to WisDOT technical staff in highway development, construction and operations. Online and print sources include NCHRP and other TRB programs, AASHTO, the research and practices of other state DOTs, and related academic and industry research.

REQUEST FOR REPORT

WisDOT's Standards Development Section is considering the use of electronic truckload scales for aggregate loads hauled to highway construction sites. Automated weighing and ticket printing could save employee time and add efficiency to record keeping. RD&T was asked to gather information on the availability and costs of such scales, as well as their durability and calibration requirements.

SUMMARY

Sophisticated truckload scales offer the ability to weigh tares, print tickets, manage data, and work without on-site scale personnel, all within a portable framework. Mettler-Toledo, Kanawha, and Snead Management Systems are three manufacturers offering such products, each with optional levels of automation that permit truck drivers to enter information and weigh loads at outdoor terminals without the assistance from gravel pit or construction site personnel. All of the systems employ software packages that allow manipulation of data for various information management needs and all have optional barcode ticket printing for end-of-the-day scanning. Scales can be transported via flatbed trucks and require concrete or asphalt foundations at the weigh site. Durability seems to be for decades or more, but warranties vary. Calibration need only be conducted semi-annually, and can be contracted out with apparent ease.

Unfortunately, not one of these manufacturers was able to cite state transportation agencies that use their products. Users have been limited to construction firms and gravel pits. Alternative technology may at some point be affordable via weigh-in-motion systems such as those used at highway weigh stations, but such systems prove significantly more expensive than the scales described below.

METTLER-TOLEDO

Mettler-Toledo's 7562 Full-Frame Portable DigiTOL TRUCKMATE Truck Scale offers LED readings, software, printable tickets, and barcode ticket printing capability. Installation at a site with a prepared foundation includes calibration and takes about eight hours.

- Cost. \$30,000 for 60-foot scale and barcode printer; software (OverDrive, with standard interfaces, \$2,600-\$6,000 for use with multiple scales) and foundation (in most applications, a beam slab) not included.
- Warranty. Five years on scale, repairs included.

- Calibration Details. At installation, tests with incremental weights added to scale; this scale expects an accuracy to within 20 lbs; calibration can take 30-120 minutes; cheapest route is to contract out for \$400-\$500; installation plus calibration at each site is roughly an 8-hour process if foundation is already prepared.

Contact Dennis Steeves, Mettler-Toledo Account Manager for Wisconsin, 262-633-9417 (o), 262-930-0317 (c), dennis.steeves@mt.com. Note that Mettler-Toledo also manufactures weigh-in-motion systems currently unsuitable for uses queried.

KANAWHA

Kanawha sells a portable scale system that offers LED readings, software (called WeighMaster), printable tickets, and barcode ticket printing capability. The manufacturer predicts a 20-year-plus life for the Unbridge Heavy Duty Portable Truck Scale, a 70-foot structure. Installation at a site with a prepared foundation includes calibration and takes about eight hours.

- Cost. About \$32,875, including calibration and installation. Software plus options like a scale-side terminal for after-hours use costs another \$17,900.
- Warranty. Lifetime for scale, one year warranty on software.
- Calibration Details. Similar loading tests as with Mettler-Toledo, typically assigned to a local contractor. Recommended at least twice per year. Calibration takes up to two hours, and installation can be one, sometimes two days.

Contact: Mike Blake, Technical Sales, 800-955-8321, 304-546-1811 (c), mblake@kanawhascales.com. Note that Kanawha also manufactures weigh-in-motion scales, currently unsuitable for uses queried.

SNEAD MANAGEMENT SYSTEMS

Snead Management offers a product called PAWS, for Portable Automatic Weighing System. PAWS can be operated by delivery drivers, offers LED display, database management software, ticket printers, and barcode ticket printers. Snead assisted an Ellburn, Ill. gravel pit in setting up a permanent scale system that offers the features of the scales above. To read, go to <http://www.sneadco.com/aggman12020000.html>. Contact Gail Stolzenburg, 281-558-9999 or gail@sneadco.com.

MORE INFORMATION

National Stone Sand and Gravel Association, Wash. D.C. See buyer's guide, look under Equipment, Service and Product Locate for "Scales," <http://www.nssga.org/memberinfo/directories.htm>. This offers a complete list of scale manufacturers. The three above were recommended by Steve Lenker, Vice President of Operations, 703-525-8788 or slenker@nssga.org.