



# On-Board Weighing Systems

## BUREAU OF WEIGHTS & MEASURES

PO Box 8911  
Madison, WI 53708  
608-224-4942  
datcp.wi.gov

## RESOURCES

More information on applicable Wisconsin laws can be found at these links:

### Wis. Stat. 98

<http://docs.legis.wisconsin.gov/statutes/statutes/98>

### Wis. Admin. Code ATCP 92

[docs.legis.wisconsin.gov/code/admin\\_code/atcp/090/92](http://docs.legis.wisconsin.gov/code/admin_code/atcp/090/92)

### NIST Handbook 44

<https://www.nist.gov/pml/weights-and-measures/publications/nist-handbooks/handbook-44>

### Licensed Service Company Listing

<https://datcp.wi.gov/Documents/WeightsMeasuresServiceCompanyListing.pdf>

### Municipality Weights and Measures Programs

<https://datcp.wi.gov/Documents/MunicipalWMPPrograms.pdf>

## On-board weighing systems

On-board weighing systems are mobile scales that have been integrated into a vehicle, such as a flatbed truck or semi-trailer. They can be used for weighing Liquefied Petroleum Gas (LPG), animal feed, livestock, garbage, or any other bulk product that is sold by weight.

NTEP-approved on-board weighing systems are considered “Legal for Trade” devices in Wisconsin. These mobile devices must comply with the requirements in Wisconsin Statute chapter 98, Wisconsin Administrative Code chapter 92, and NIST (National Institute of Standards and Technology) Handbook 44. They may also be periodically inspected by a DATCP Weight and Measures Inspector.

## Minimum loads

NIST Handbook 44 section 2.20 UR.3.1 lists the recommended minimum loads for on-board weighing systems, seen in the table below. Large errors might result when weighing very light loads.

**NIST Handbook 44: Recommended Minimum Load**

| Mobile Scale Capacity | Value of Scale Division (d or e*) | Recommended Minimum Load (d or e*) |
|-----------------------|-----------------------------------|------------------------------------|
| ≤ 30,000lb            | All**                             | 20                                 |
| > 30,000lb            | All                               | 50                                 |

\*For Class III devices the value of “e” is specified by the manufacturer as marked on the device; “e” must be less than or equal to “d.”

\*\*A minimum load of 10 d is recommended for a weight classifier marked in accordance with a statement identifying its use for special applications.

**UR.3.8. Minimum Load for Weighing Livestock.** – A scale with scale divisions greater than 2 kg (5 lb) shall not be used for weighing net loads smaller than 500 d.

## Level requirements

NIST Handbook 44 section S.2.4.1 requires on-board weighing systems to operate within tolerance when the weighing system is tilted up to and including 5% rise over run in any direction from a level position and rebalanced. If the accuracy of the system is affected by out-of-level conditions normal to the use of the device, the system must be equipped with an out-of-level sensor that inhibits the weighing operation when the system is out of level to the extent that the accuracy limits are exceeded.

## **Maintenance of the scale**

NIST Handbook 44 section 1.10.G-UR.4.1 requires on-board weighing systems to be properly maintained, including the required accuracy. The owner of the scale must maintain and calibrate the system as often as necessary to meet this requirement regardless of the location, weather, or other environmental conditions.

## **Required documentation for bulk deliveries**

Vehicles delivering bulk commodities sold by weight to an individual purchaser must retain and deliver to the purchaser a duplicate delivery ticket with the following information:

- Name and address of the vendor
- Name and address of the purchaser
- Net weight of the delivery expressed in pounds
- Gross and tare weights of the delivery if the net weight of the delivery is derived from determination of gross and tare weights.

For milk picked up at farms, only the identity of the vendor and the net weight need to be stated.

Upon delivery, the duplicate delivery ticket must be provided to the purchaser. If the purchaser carries away the purchase, the ticket only needs to state the number of pounds of commodity delivered. If the commodity is weighed by the purchaser, the purchaser must provide a delivery ticket to the vendor. (Wisconsin Statute § 98.22)

## **Periodic testing by Weights and Measures Inspectors**

NIST Handbook 44 section 1.10.G-UR.2.3 requires on-board weighing systems to have a means for inspectors to apply appropriate weight loads to meet minimum test load requirements. In the case of a liquid-tank type vehicle, straps over the top of the tank will not be considered acceptable for testing in Wisconsin. If special rigging is required for testing, the rigging must be onboard the vehicle when in use so that the system may be tested if the need arises.

Owners must also be prepared to provide a lift truck or similar device to move 500lb and/or 1,000lb field standard test weights in the event of the need for a test by an inspector. (NIST Handbook 44 section 1.10.G-UR.4.4)

Some municipalities in Wisconsin operate their own Weights and Measures programs and may require annual testing and licensing for weighing and measuring devices used in areas of their jurisdictions. A list of these municipalities can be found here:

<https://datcp.wi.gov/Documents/MunicipalWMPPrograms.pdf>

## **Required annual testing—mobile livestock scales**

On-board weighing systems with a weighing capacity of 5,000lb or more used for the commercial weighing of livestock must be tested annually by a Wisconsin licensed service company. The owner of the scale must submit the test report to the Department of Agriculture, Trade and Consumer Protection within 30 days of the test. If the scale is found to be inaccurate it cannot be used until it is serviced and corrected by the service company. (Wisconsin Administrative Code § ATCP 92.30(7))

A list of Wisconsin licensed service companies in your area can be found here:

<https://datcp.wi.gov/Documents/WeightsMeasuresServiceCompanyListing.pdf>