

# Determining Accuracy Class For Hopper Scales

*Last Revision: January 26, 2012*

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 [NIST Handbook 44](#)  
Sec. 2.20 Scales, Table 3  
and Table T.1.1.

## Background

Individual hopper scales can fit into two different categories for accuracy class (III or III L) depending on which criteria they meet. As such, the minimum number of scale divisions allowed is determined based on the accuracy class which corresponds to each individual device tested. This policy serves as a guide to determine the accuracy class of an individual hopper scale.

## Reference

### Marked Hopper Scales

Table 3. Parameters for Accuracy Classes in NIST HB 44, Sec. 2.20. Scales [Nonretroactive as of January 1, 1986], shows the minimum number of scale divisions for **MARKED** hopper scales.

Class III L hopper scales are all hopper scales other than grain hopper scales. For class III L hopper scales, “the value of a scale division for crane and hopper (other than grain hopper) scales shall not be less than 0.2 kg (0.5 lb). The minimum number of scale divisions shall be not less than 1000”. Tolerances for Class III L hopper scales are referenced in T.N.3.1. Maintenance Tolerance Values (Table 6) and T.N.3.2. Acceptance Tolerance Values of NIST HB44, Sec. 2.20. Scales. [Note: T.N.3.4. Crane and Hopper (Other than Grain Hopper) Scales. – The maintenance and acceptance tolerances shall be as specified in T.N.3.1. Maintenance Tolerance Values and T.N.3.2. Acceptance Tolerance Values for Class III L, except that the tolerance for crane and construction materials hopper scales shall not be less than 1 d or 0.1% of the scale capacity, whichever is less. (Amended 1986)].

Class III hopper scales are hopper scales used for weighing grain. For class III hopper scales, “the minimum number of scale divisions for a Class III Hopper Scale used for weighing grain shall be 2000”. Tolerances for Class III hopper scales are referenced in T.N.3.1. Maintenance Tolerance Values (Table 6) and T.N.3.2. Acceptance Tolerance Values of NIST HB44, Sec. 2.20. Scales.

### Unmarked Hopper Scales

Table T.1.1. Tolerances for Unmarked Scales in NIST HB 44, Sec. 2.20. Scales, shows the tolerances for all **UNMARKED** hopper scales.

For all unmarked hopper scales (other than grain hopper), use the tolerances for Class III L hopper scales referenced in T.N.3.1. Maintenance Tolerance Values (Table 6) and T.N.3.2. Acceptance Tolerance Values of NIST HB44, Sec. 2.20. Scales.

For unmarked grain hopper scales (listed under “All other scales” in Table T.1.1.) where  $n > 5000$ , the Minimum Tolerance is  $0.5d$  or  $0.05\%$  of scale capacity, whichever is less. The Acceptance Tolerance is  $0.05\%$  of test load. The Maintenance Tolerance is  $0.1\%$  of test load.

For unmarked grain hopper scales (listed under “All other scales” in Table T.1.1.) where  $n \leq 5000$ , the tolerances are referenced in T.N.3.1. Maintenance Tolerance Values (Table 6) and T.N.3.2. Acceptance Tolerance Values of NIST HB44, Sec. 2.20. Scales.

(Note:  $n =$  number of scale divisions)

*Effective Date: January 28, 2010*