Specifications and Tolerances for Field Standard Weights
(NIST Handbook 105-1 Class F, Revised 1990)

Effective January 1, 2000

These specifications and tolerances are minimum requirements for standard used primarily to test weighing devices.

Key words: Field standard weights; specifications; test weights; tolerances; weights and measures inspection.

Introduction

A Class F field standard weight (after this, simply called "weight") is intended to be used primarily to test commercial weighing devices for compliance with the requirements of NIST Handbook 44.¹ Class F weights may be used to test most accuracy class II, III scales, all scales of class III L or III, and scales not marked with a class designation.

A weight shall be verified to be within tolerance prior to use. The within-tolerance status of a weight shall be rechecked as often as regulations or circumstances require, especially when damage to it is known or suspected.

General

These specifications apply to new weights placed in service after the publication of this standard; the tolerances apply to all weights in service.

A weight in service prior to the publication of this standard (1990) that has maintained Class F tolerances between verification tests shall continue to be acceptable.

The specifications permit the use of a weight at its nominal value in normal testing operations, where the tolerance on the item under test is at least three times as great as the tolerance of the weight.³

Specifications

1. Material

1.1. A weight made of brass or a fabricated weight (such as a laminate weight or a weight of nonuniform density) shall not be placed in service after the publication date of this standard (1990).

1.2. A weight smaller than 5 grams/0.01 lb shall be constructed of stainless steel, tantalum, nickel-chromium alloy, aluminum alloy, or other material sufficiently resistant to corrosion and oxidation that the surface need not be protected or coated.

¹ NBS Handbook 44. Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices. (See current edition.)

Class F Tolerances for Field Standard Weights

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<tr>
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<td>10 g</td>
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1 μlb = 0.0000001 lb