

Vermont Weights and Measures Metrology Laboratory  
Test Report

Issued To:

Advanced Scale  
13 Delta Drive Unit 6  
Londonderry, NH 03053-2372  
603-626-0242

Vermont Test Number: VT17-123

Date of Test: May 22, 2017

Report of Test for Item (Make/Model/Serial Number(s)/#Pieces):

Various/Class F Cast Iron Field Standards/In Chart/21

The mass standards described above have been compared to the standards of the State of Vermont, by SOP 8 (modified substitution), and have been found at time of test, or been adjusted, to meet the requirements stated in NIST Handbook 105-1 Specifications and Tolerances for Reference Standards and Field Standard Weights and Measures (Class F). Standards of the state of Vermont are traceable to the SI and National Institute of Standards and Technology (NIST). The Vermont Laboratory is recognized by NIST, under the Laboratory Metrology Program at Mass Echelon III. The mass standards described above were found to have a mass value at the time of test as indicated in the following tabulation. Weights received in an out of tolerance condition show a value in the "before adjustment" column.

The uncertainties shown are expressed as the sum of the following sources of inaccuracy; (1) Type B, systematic errors relative to the reference standard and procedure used, and (2) Type A, random errors determined by the standard deviation of the measurement process. Type A and Type B uncertainties are combined by the root sum squared method and multiplied by a coverage factor of  $k$  (in chart) for an approximate 95% confidence interval.

Environmental conditions at time of test:

Temperature: 19.8 °C

Relative Humidity: 46.4%

Mass Comparator: MT XP604KM



| Weight | Nominal | Before Adjustment | Correction | Uncertainty | NIST Class F Tolerance | Units | k Factor |
|--------|---------|-------------------|------------|-------------|------------------------|-------|----------|
| 1NJL   | 1000 lb |                   | 18.8       | 5.8         | 45                     | g     | 2.09     |
| 1NJG   | 1000 lb | 34.7              | 0.5        | 5.8         | 45                     | g     | 2.09     |
| 13880  | 1000 lb |                   | 25.8       | 5.8         | 45                     | g     | 2.09     |
| 1388   | 1000 lb |                   | 15.9       | 5.8         | 45                     | g     | 2.09     |
| 1NJJ   | 1000 lb |                   | 19.3       | 5.8         | 45                     | g     | 2.09     |
| 1NJE   | 1000 lb |                   | 32.6       | 5.8         | 45                     | g     | 2.09     |
| 1NJI   | 1000 lb |                   | 26.6       | 5.8         | 45                     | g     | 2.09     |
| 1NJF   | 1000 lb |                   | 12.9       | 5.8         | 45                     | g     | 2.09     |
| 1NJP   | 1000 lb |                   | 27.1       | 5.8         | 45                     | g     | 2.09     |
| 1NJQ   | 1000 lb |                   | 28.4       | 5.8         | 45                     | g     | 2.09     |
| 1NJH   | 1000 lb |                   | 16.8       | 5.8         | 45                     | g     | 2.09     |
| 1NJN   | 1000 lb |                   | 25.6       | 5.8         | 45                     | g     | 2.09     |
| 1NJC   | 1000 lb |                   | -24.5      | 5.8         | 45                     | g     | 2.09     |
| 9      | 1000 lb |                   | 19.5       | 5.8         | 45                     | g     | 2.09     |
| 1NJM   | 1000 lb |                   | 34.2       | 5.8         | 45                     | g     | 2.09     |
| 1NJK   | 1000 lb |                   | 1.6        | 5.8         | 45                     | g     | 2.09     |
| 10     | 1000 lb |                   | 13.1       | 5.8         | 45                     | g     | 2.09     |
| 1NJD   | 1000 lb | 42.2              | 23.8       | 5.8         | 45                     | g     | 2.09     |
| 10004  | 1000 lb |                   | -24.3      | 5.8         | 45                     | g     | 2.09     |
| 10002  | 1000 lb |                   | -6.5       | 5.8         | 45                     | g     | 2.09     |
| 10003  | 1000 lb |                   | 29.2       | 5.8         | 45                     | g     | 2.09     |

Additional documentation material available on request.

The following weights were adjusted: 2 Weights Adjusted.



May 22, 2017

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Marc Paquette/Vermont Agency of Agriculture  
Consumer Protection Section/Metrologist  
Weights and Measures Specialist

End of Report