

The tables on the following pages show the current tolerances and proposed tolerances for all devices addressed in NIST Handbook 44. They are laid out in a manner to provide proper comparisons with the various manners they are presented in Handbook 44. When I presented this item in Open Hearing, I neglected to add that the private industry representatives were in support of the proposed tolerance changes.

**CURRENT NIST HANDBOOK 44 VTM Code 3.31 and Milk Meter Code
3.35 Tolerances**

Indication (gallons)	Maintenance Tolerance (gallons)	Maintenance Tolerance (Percentage)	Acceptance Tolerance (gallons)	Acceptance Tolerance (Percentage)
100	0.5	0.50%	0.3	0.30%
200	0.7	0.35%	0.4	0.20%
300	0.9	0.30%	0.5	0.17%
400	1.1	0.28%	0.6	0.15%
500	1.3	0.26%	0.7	0.14%
600	1.5	0.25%	0.8	0.13%
700	1.7	0.24%	0.9	0.13%
800	1.9	0.24%	1.0	0.13%
900	2.1	0.23%	1.1	0.12%
1000	2.3	0.23%	1.2	0.12%
1100	2.5	0.23%	1.3	0.12%
1200	2.7	0.23%	1.4	0.12%
1300	2.9	0.22%	1.5	0.12%
1400	3.1	0.22%	1.6	0.11%
1500	3.3	0.22%	1.7	0.11%
1600	3.5	0.22%	1.8	0.11%
1700	3.7	0.22%	1.9	0.11%
1800	3.9	0.22%	2.0	0.11%
1900	4.1	0.22%	2.1	0.11%
2000	4.3	0.22%	2.2	0.11%
2100	4.5	0.21%	2.3	0.11%
2200	4.7	0.21%	2.4	0.11%
2300	4.9	0.21%	2.5	0.11%
2400	5.1	0.21%	2.6	0.11%
2500	5.3	0.21%	2.7	0.11%
2600	5.5	0.21%	2.8	0.11%
2700	5.7	0.21%	2.9	0.11%
2800	5.9	0.21%	3.0	0.11%
2900	6.1	0.21%	3.1	0.11%
3000	6.3	0.21%	3.2	0.11%
4000	8.3	0.21%	4.2	0.11%
5000	10.3	0.21%	5.2	0.10%
6000	12.3	0.21%	6.2	0.10%
7000	14.3	0.20%	7.2	0.10%
8000	16.3	0.20%	8.2	0.10%
9000	18.3	0.20%	9.2	0.10%
10000	20.3	0.20%	10.2	0.10%

PROPOSED TOLERANCES IN ALIGNMENT WITH OIML R117

Indication (gallons)	Tolerance of Complete Measuring System (gallons)	Tolerance of Complete Measuring System (0.5%)	Tolerance of Meter under going type evaluation or verification prior to initial verification of complete system (gallons)	Tolerance of Meter under going type evaluation or verification prior to initial verification of complete system (0.3%)
100	0.5	0.50%	0.3	0.30%
200	1.0	0.50%	0.6	0.30%
300	1.5	0.50%	0.9	0.30%
400	2.0	0.50%	1.2	0.30%
500	2.5	0.50%	1.5	0.30%
600	3.0	0.50%	1.8	0.30%
700	3.5	0.50%	2.1	0.30%
800	4.0	0.50%	2.4	0.30%
900	4.5	0.50%	2.7	0.30%
1000	5.0	0.50%	3.0	0.30%
1100	5.5	0.50%	3.3	0.30%
1200	6.0	0.50%	3.6	0.30%
1300	6.5	0.50%	3.9	0.30%
1400	7.0	0.50%	4.2	0.30%
1500	7.5	0.50%	4.5	0.30%
1600	8.0	0.50%	4.8	0.30%
1700	8.5	0.50%	5.1	0.30%
1800	9.0	0.50%	5.4	0.30%
1900	9.5	0.50%	5.7	0.30%
2000	10.0	0.50%	6.0	0.30%
2100	10.5	0.50%	6.3	0.30%
2200	11.0	0.50%	6.6	0.30%
2300	11.5	0.50%	6.9	0.30%
2400	12.0	0.50%	7.2	0.30%
2500	12.5	0.50%	7.5	0.30%
2600	13.0	0.50%	7.8	0.30%
2700	13.5	0.50%	8.1	0.30%
2800	14.0	0.50%	8.4	0.30%
2900	14.5	0.50%	8.7	0.30%
3000	15.0	0.50%	9.0	0.30%
4000	20.0	0.50%	12.0	0.30%
5000	25.0	0.50%	15.0	0.30%
6000	30.0	0.50%	18.0	0.30%
7000	35.0	0.50%	21.0	0.30%
8000	40.0	0.50%	24.0	0.30%
9000	45.0	0.50%	27.0	0.30%
10000	50.0	0.50%	30.0	0.30%

VTM-20.2 ORIGINAL 2020 Proposed Changes

Indication (gallons)	Maintenance Tolerance (gallons)	Maintenance Tolerance (0.6%)	Acceptance Tolerance (gallons)	Acceptance Tolerance (0.5%)
100	0.6	0.60%	0.5	0.50%
200	1.2	0.60%	1.0	0.50%
300	1.8	0.60%	1.5	0.50%
400	2.4	0.60%	2.0	0.50%
500	3.0	0.60%	2.5	0.50%
600	3.6	0.60%	3.0	0.50%
700	4.2	0.60%	3.5	0.50%
800	4.8	0.60%	4.0	0.50%
900	5.4	0.60%	4.5	0.50%
1000	6.0	0.60%	5.0	0.50%
1100	6.6	0.60%	5.5	0.50%
1200	7.2	0.60%	6.0	0.50%
1300	7.8	0.60%	6.5	0.50%
1400	8.4	0.60%	7.0	0.50%
1500	9.0	0.60%	7.5	0.50%
1600	9.6	0.60%	8.0	0.50%
1700	10.2	0.60%	8.5	0.50%
1800	10.8	0.60%	9.0	0.50%
1900	11.4	0.60%	9.5	0.50%
2000	12.0	0.60%	10.0	0.50%
2100	12.6	0.60%	10.5	0.50%
2200	13.2	0.60%	11.0	0.50%
2300	13.8	0.60%	11.5	0.50%
2400	14.4	0.60%	12.0	0.50%
2500	15.0	0.60%	12.5	0.50%
2600	15.6	0.60%	13.0	0.50%
2700	16.2	0.60%	13.5	0.50%
2800	16.8	0.60%	14.0	0.50%
2900	17.4	0.60%	14.5	0.50%
3000	18.0	0.60%	15.0	0.50%
4000	24.0	0.60%	20.0	0.50%
5000	30.0	0.60%	25.0	0.50%
6000	36.0	0.60%	30.0	0.50%
7000	42.0	0.60%	35.0	0.50%
8000	48.0	0.60%	40.0	0.50%
9000	54.0	0.60%	45.0	0.50%
10000	60.0	0.60%	50.0	0.50%

**CURRENT NIST HANDBOOK 44 Mass Flow Meters Code 3.37 Tolerances
for Milk**

Indication (gallons)	Maintenance Tolerance (gallons)	Maintenance Tolerance (0.3%)	Acceptance Tolerance (gallons)	Acceptance Tolerance (0.2%)
100	0.3	0.30%	0.2	0.20%
200	0.6	0.30%	0.4	0.20%
300	0.9	0.30%	0.6	0.20%
400	1.2	0.30%	0.8	0.20%
500	1.5	0.30%	1.0	0.20%
600	1.8	0.30%	1.2	0.20%
700	2.1	0.30%	1.4	0.20%
800	2.4	0.30%	1.6	0.20%
900	2.7	0.30%	1.8	0.20%
1000	3.0	0.30%	2.0	0.20%
1100	3.3	0.30%	2.2	0.20%
1200	3.6	0.30%	2.4	0.20%
1300	3.9	0.30%	2.6	0.20%
1400	4.2	0.30%	2.8	0.20%
1500	4.5	0.30%	3.0	0.20%
1600	4.8	0.30%	3.2	0.20%
1700	5.1	0.30%	3.4	0.20%
1800	5.4	0.30%	3.6	0.20%
1900	5.7	0.30%	3.8	0.20%
2000	6.0	0.30%	4.0	0.20%
2100	6.3	0.30%	4.2	0.20%
2200	6.6	0.30%	4.4	0.20%
2300	6.9	0.30%	4.6	0.20%
2400	7.2	0.30%	4.8	0.20%
2500	7.5	0.30%	5.0	0.20%
2600	7.8	0.30%	5.2	0.20%
2700	8.1	0.30%	5.4	0.20%
2800	8.4	0.30%	5.6	0.20%
2900	8.7	0.30%	5.8	0.20%
3000	9.0	0.30%	6.0	0.20%
4000	12.0	0.30%	8.0	0.20%
5000	15.0	0.30%	10.0	0.20%
6000	18.0	0.30%	12.0	0.20%
7000	21.0	0.30%	14.0	0.20%
8000	24.0	0.30%	16.0	0.20%
9000	27.0	0.30%	18.0	0.20%
10000	30.0	0.30%	20.0	0.20%

CURRENT NIST HANDBOOK 44 Farm Milk Tanks Code 4.42 Basic

Tolerance

Indication (gallons)	Tolerance (gallons)	Tolerance (0.2%)	Tolerance- Master-Meter Method (gallons)	Tolerance- Master-Meter Method (0.4%)
100	0.2	0.20%	0.4	0.40%
200	0.4	0.20%	0.8	0.40%
300	0.6	0.20%	1.2	0.40%
400	0.8	0.20%	1.6	0.40%
500	1.0	0.20%	2.0	0.40%
600	1.2	0.20%	2.4	0.40%
700	1.4	0.20%	2.8	0.40%
800	1.6	0.20%	3.2	0.40%
900	1.8	0.20%	3.6	0.40%
1000	2.0	0.20%	4.0	0.40%
1100	2.2	0.20%	4.4	0.40%
1200	2.4	0.20%	4.8	0.40%
1300	2.6	0.20%	5.2	0.40%
1400	2.8	0.20%	5.6	0.40%
1500	3.0	0.20%	6.0	0.40%
1600	3.2	0.20%	6.4	0.40%
1700	3.4	0.20%	6.8	0.40%
1800	3.6	0.20%	7.2	0.40%
1900	3.8	0.20%	7.6	0.40%
2000	4.0	0.20%	8.0	0.40%
2100	4.2	0.20%	8.4	0.40%
2200	4.4	0.20%	8.8	0.40%
2300	4.6	0.20%	9.2	0.40%
2400	4.8	0.20%	9.6	0.40%
2500	5.0	0.20%	10.0	0.40%
2600	5.2	0.20%	10.4	0.40%
2700	5.4	0.20%	10.8	0.40%
2800	5.6	0.20%	11.2	0.40%
2900	5.8	0.20%	11.6	0.40%
3000	6.0	0.20%	12.0	0.40%
4000	8.0	0.20%	16.0	0.40%
5000	10.0	0.20%	20.0	0.40%
6000	12.0	0.20%	24.0	0.40%
7000	14.0	0.20%	28.0	0.40%
8000	16.0	0.20%	32.0	0.40%
9000	18.0	0.20%	36.0	0.40%
10000	20.0	0.20%	40.0	0.40%