

ISO 12917-1:2017-03 (E)

Petroleum and liquid petroleum products - Calibration of horizontal cylindrical tanks - Part 1: Manual methods

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Precautions	1
4.1	General	1
4.2	Internal method	2
4.3	External method	2
5	Equipment	2
5.1	Equipment as used in ISO 7507-1	2
5.2	Telescopic rod	2
5.3	Distance meter	2
5.4	Leveller	2
6	General requirements	2
7	Calibration procedures	3
7.1	General	3
7.2	Measurement of circumferences -- External	3
7.2.1	Introduction	3
7.2.2	General	3
7.2.3	Repetition of measurements	4
7.3	Measurement of circumferences -- Internal	5
7.3.1	Overview	5
7.3.2	General	5
7.4	Measurements of lengths	5
7.4.1	Method	5
7.4.2	Length of horizontal cylinder	6
7.4.3	Lengths of segments	6
7.4.4	Lengths of heads	7
7.4.5	Gauge lengths	7
7.4.6	Measurement/calculations of radii of the heads	7
7.5	Tank tilt	7
7.6	Plate thickness	8
7.7	Reference height	8
7.8	Deadwood	8
7.9	Measurements of temperature and pressure	8
8	Re-calibration	8
9	Descriptive data	9
10	Computation of tank capacity table	10
10.1	General rules	10

10.2	Accuracy of volume	10
10.2.1	General	10
10.2.2	Calculation parameters	10
10.2.3	Volume calculation	13
10.3	Corrections of volume of tank table	22
10.3.1	General	22
10.3.2	Working pressure	22
10.3.3	Tank-shell temperature	24
10.4	Deadwood	24
10.5	Calibration table at gauged levels	24
Annex A (informative)	Computation of tank capacity tables based on individual segment dimensions	26
Annex B (informative)	Calculation examples	29
Annex C (informative)	Calibration uncertainties	39
Bibliography		46