ISO 11982:2025-11 (E)

Refrigerated hydrocarbon and non-petroleum based liquefied gaseous fuels - Liquefied Natural Gas (LNG) as marine fuel - Measurement on board LNG bunkering ship

Contents

Page

Foreword ... **iv**

Introduction ... **v**

1 Scope ... **1**

2 Normative references ... **1**

3 Terms and definitions ... **1**

4 On-board measurement ... **4**

4.1 Outline ... 4

4.2 Static measurement ... 5

4.2.1 General ... 5

4.2.2 Tank capacity table ... 5

4.2.3 Custody transfer measurement system (CTMS) ... 6

4.3 Dynamic measurement ... 7

4.3.1 General ... 7

4.3.2 Dynamic measurement equipment performance ... 7

4.3.3 Calibration ... 7

4.3.4 Measurement ... 7

5 On-board sampling ... **7**

6 Analysis ... **8**

6.1 General ... 8

6.2 Online analysis ... 8

7 Calculation method ... **8**

7.1 General ... 8

7.2 Static measurement ... 9

7.2.1 General ... 9

7.2.2 Liquid level ... 10

7.2.3 Liquid and vapour temperature ... 10

7.2.4 Vapour pressure ... 10

7.2.5 Trim and list ... 10

7.3 Dynamic measurement ... 10

7.4 Energy calculation ... 10

7.4.1 Liquid energy ... 10

7.4.2 Vapour energy ... 12

7.4.3 Wobbe index ... 14

7.5 Methane number calculation ... 14

Annex A (informative) **Processing of CTMS data** ... **15**

Annex B (informative) **Calculation example** ... **19**

Annex C (informative) **Treatment of unsupported components** ... **29**

Annex D (informative) **Example of parameters in a bunker delivery note** ... **30**

Annex E (informative) **Estimation of the composition of comingled LNG** ... **31**

Bibliography ... **36**