

ISO 6919:2024-07 (E)

Measurement of refrigerated hydrocarbon and non-petroleum based liquefied gaseous fuels - Dynamic measurement of liquefied natural gas (LNG) as marine fuel - Truck-to-ship (TTS) bunkering

Contents		Page
Foreword		iv
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	General requirements and safety precautions	4
5	Measurement systems and equipment	4
5.1	General	4
5.2	Portable packaging measurement system	4
5.3	Metrological requirements for measurement	7
5.3.1	Coriolis flow meter installation requirements	7
5.3.2	Gas chromatography apparatus requirement	7
5.4	Measurement system verification	7
5.4.1	Coriolis flow meter system verification	7
5.4.2	Gas chromatography system verification	7
5.5	Equipment maintenance and testing	7
6	Measurement procedures	7
6.1	Coriolis mass flowmeter procedures	7
6.1.1	General	7
6.1.2	Quantity measurement procedures	8
6.1.3	Quantity measurement documentation	9
6.1.4	MFM system failure and quantity dispute	9
6.2	Gas chromatography procedures	9
6.2.1	General	9
6.2.2	Quality measurement procedures	10
6.2.3	Quality measurement documentation	10
6.2.4	Calibration	10
6.3	LNG energy calculation	10
6.4	Measurement report	10
Annex A (informative)	Energy value calculation	12
Annex B (informative)	LNG bunker delivery note	14
Annex C (informative)	Bunker metering ticket	16
Annex D (informative)	LNG Bunker checklist TTS	17
Annex E (informative)	Mass flow metering system seals checklist	24
Annex F (informative)	Meter reading record form (delivery)	25
Bibliography		26