

# ISO 19970:2025-07 (E)

## Refrigerated hydrocarbon and non-petroleum based liquefied gaseous fuels - Metering of gas as fuel on LNG carriers during cargo transfer operations

---

| <b>Contents</b>   |   | <b>Page</b> |
|---|---|-------------|
| Foreword .....  |   | iv          |
| Introduction .....  |   | v           |
| 1   | Scope .....   | 1           |
| 2   | Normative references .....  | 1           |
| 3   | Terms and definitions .....                                       | 1           |
| 4   | Design requirements .....   | 3           |
| 4.1   | General .....   | 3           |
| 4.2   | BOG measurement system .....                                      | 3           |
| 4.2.1   | General .....   | 3           |
| 4.2.2   | Flowmeter .....   | 4           |
| 4.2.3   | Associated measuring instruments .....                            | 4           |
| 4.2.4   | Flow computer .....   | 4           |
| 4.2.5   | Indicating device .....   | 4           |
| 5   | Uncertainty requirement .....                                     | 4           |
| 6   | Calibration and uncertainty verification .....                    | 5           |
| 6.1   | General .....   | 5           |
| 6.2   | Calibration at laboratory or factory before installation .....    | 5           |
| 6.3   | Calibration and verification after installation .....             | 5           |
| 6.4   | Periodic uncertainty verification of BOG measurement system ..... | 5           |
| 7   | Metering and calculation .....                                    | 6           |
| 7.1   | General .....   | 6           |
| 7.2   | Metering .....  | 6           |
| 7.3   | Calculation of heating value .....                                | 6           |
| Annex A (informative) Typical installation of fuel gas flowmeters ..... |   | 7           |
| Annex B (informative) Calculation of energy transferred .....           |   | 8           |
| Annex C (informative) Uncertainty calculation examples .....            |   | 9           |
| Bibliography .....  |   | 13          |