



# Bunkering

## Custody transfer in bunkering applications

*The vast majority of ocean-going ships run on heavy fuel oil - and huge quantities of it. Given the economic significance, there is an increasing demand for accurate measurement of the number of tonnes delivered. NMI offers certification of measurement systems in bunkering applications, thereby providing confidence in the measuring system.*

### MID ANNEX VII (MI-005) AND/OR OIML R117-1

Because of the varying process conditions, high viscosities, changing liquid composition, entrained air and slug flow, accurate measurement of these quantities is extremely challenging.

NMI has developed a procedure which enables the testing of measuring systems in bunkering applications against legal metrological requirements as stated in the Measuring Instruments Directive (MID) and/or OIML International Recommendation R117-1. OIML recommendations are well known and widely accepted, thereby providing confidence in these measuring systems throughout the world.

### HOW IT WORKS

A complete measuring system needs to be evaluated – especially in this type of application – to guarantee accurate measurement. In addition to the flow meter, piping and valve arrangements as well as process control play a vital role in the measurement of the quantity of fuel. Since valve and piping arrangements typically vary per ship, the measuring systems also need to be evaluated on an individual basis.

- NMI draws up a test plan
- You receive a certification proposal
- Planning for tests (in laboratory and field)

### FLEXIBLE PLANNING

Where possible, parts of the required test programme are performed under laboratory conditions. However, proof of concept for bunkering applications can only be obtained through field testing under realistic conditions.

NMI is experienced at both performing bunkering tests and scheduling their activities around the ever-changing arrival and departure times of the shipping industry. NMI is based relatively close to the bunkering ports of Rotterdam and Antwerp which makes logistics easier. Tests can also be performed as far away as Singapore.

### WHY CERTIFY?

- More accurate measurement -> direct financial benefit
- No more discussions on quantities measured
- Reduction of bunkering time
- Reduction of possibilities to manipulate data and measurement results

### WHAT NMI OFFERS YOU

- MID EU-Type Examination Certificates
- Modular testing and Certification, where possible
- Validation of measuring systems
- Test reports
- Module F (initial Verification) of measuring systems, including Certificate of Conformity
- Welmec 7.2 certification / Data integrity



## MORE INFORMATION?

Please contact [nmi@nmi.nl](mailto:nmi@nmi.nl) or call +31 78 633 23 08 if you like to receive more information. We are happy to answer any of your questions.

