

Guideline for meter verification using Coriolis master mass flowmeter

This Guideline serves as reference document to assist bunker tanker operators in Singapore in preparing their bunker tanker and MFM systems for meter verification. Prepared by Metcore International Pte Ltd for ease of performing verification of bunker mass flowmeters (MFM) using the Coriolis mass flowmeter (direct mass measurement) methodology.

Bunker tanker operators with existing MPA's approved mass flow metering system used for custody transfer in bunker delivery operation, where appropriate, are obliged to apply these guidelines to ensure a harmonized preparation. It provides the guidance and brief procedures for the verification of bunker MFM and its system.

Specific guidelines are explained as follow:

Pre-test inspection

- Introduction of bunker tanker representative & Metcore lead test engineer.
- Complete the "Information of meter under test (MUT) checklist".
- Initial tanker survey & recommendations - to verify information provided in the MUT checklist.
- Verify MUT communication parameter (for signal transmitting and receiving) alignment with master MFM.
- Provide copy of the latest meter parameters records, if applicable.
- Prepare appropriate hose connections - i.e. delivery and return line, 10 inch connection on master MFM.
- Ensure sufficient cargo (At least 1 set of wing tanks up to 95% filled is preferred) to ensure non aerated flow during the verification process. Another set of empty tanks sufficient for cargo return.
- Ready for meter verification.

Verification process

- Metcore to brief bunker tanker representative/crews of verification process
- Metcore will coordinate with the bunker representative on the operational requirements throughout the verification process.
- Bunker tanker to ensure setup connections & hoses and ensure no system leakage before commencement of verification process.
- Bunker tanker to monitor throughout the proving operation
- Metcore to carry out verification process when flow condition is stable, in consideration of the confirmed operational flowrate.
- Minimum of 3 test runs at operational flowrate/s will be performed for measurement data to be recorded.
- Clear the system and remaining cargo back to receiving tanks.
- Bunker tanker to disconnect the hoses & accessories.

Post-test reporting

- A test Report will be furnished.
- Subsequent verification to be scheduled.