



Why do we carry out Flooded Member Inspection?

The Flooded Member Inspection technique (FMI), also known as Flooded Member Detection (FMD), is used to detect the presence of water in sub-sea tubular structural members that could indicate a through wall defect in the member. Small weld failures or cracks can occur, especially in harsh environments, and remain undetected unless inspected routinely. Inspecting welds can be a slow and expensive process. The TRACERCO Diagnostics™ FMI system can measure the degree of flooding into platform structural members without any need to remove marine growth or specialist coatings. It is operable as a simple attachment to any Remotely Operated Vehicle (ROV) or can be manually deployed by a suitably trained diver. A highly focused beam of gamma radiation and an ultra-sensitive detector unit are mounted on opposite forks of a variable yoke system and positioned across the diameter of the member under inspection. The transmitted radiation intensity is measured and compared to the intensity expected for a dry member based upon the particular member's diameter, wall thickness and system calibration. Water inside the member will result in a decrease in the expected "dry member" transmitted signal. Each response is evaluated by our bespoke software and trained Offshore Technicians working in conjunction with the ROV or dive team to provide a full report of platform jacket integrity.

The Benefits:

- It is the quickest, most effective and reliable method of surveying platform members (typically 100 members per 12 hour shift).
- No need to remove marine growth (as per Ultrasonic methods)
- Results for each individual member available within seconds
- A platform can be surveyed nearly as fast as the ROV can travel around the jacket
- Highly accurate, allowing anomalies to be raised and analysed at the time of measurement.

The Results:

- Partial Flooding: <5% of water ingress
- Grouted members: (full or partial)
- Wall thickness differences: +/- 2mm
- Diameter differences: +/- 10mm
- Node thicknesses: +/- 5mm steel
- Flooding interface accuracy: +/- 20mm

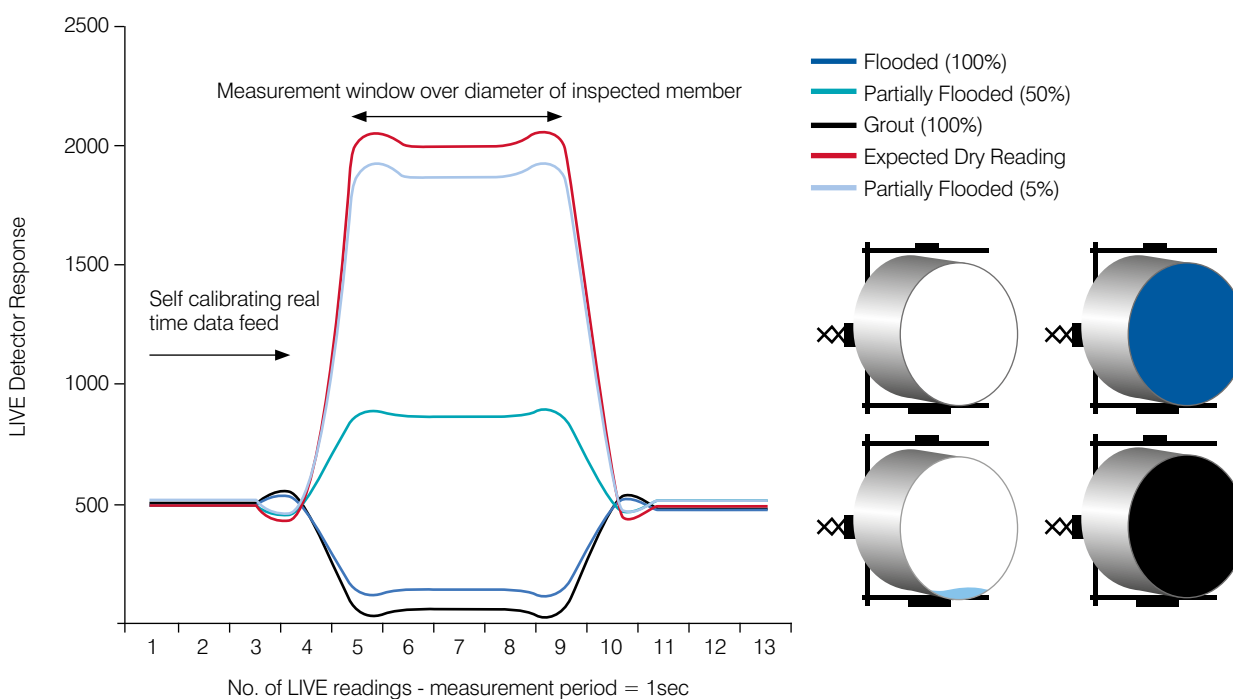
Case study - Tracerco FMI Ensuring results are right first time

Tracerco have recently been requested by an operating company to repeat a survey carried out by a different GFMD provider in order to confirm some dubious results. On reviewing the results and comparing the data to previous data recorded it was clear that there was a discrepancy. The GFMD provider had classified a particular member flooded one year and dry the next. The pre inspection work scope had highlighted a member diameter as 600mm with a wall thickness of 25mm. Looking back at many years of previous data the member had previously been surveyed by Tracerco and recorded as DRY. The diameter of the member was recorded as 1200mm with a wall thickness of 60mm. Tracerco carried out the inspection and the member was found to be DRY. Further investigation highlighted that the previous inspector was able to inspect the member with the wrong yoke setting by forcing its flexible arms around the member.

The arms were moved out during the inspection thus reducing the transmitted radiation signal and therefore the member was erroneously recorded as flooded.

Using a rigid frame highlights dimension differences and ensures mistakes cannot be made. The Tracerco team could quickly identify the discrepancy and highlight a potential mistake in the work scope. Tracerco also hold over 30 years of previous inspection data. This includes all previous dimensions and in some cases as built drawings are available. Tracerco are committed to carrying out inspections to the highest possible accuracy. Technicians are trained to carry out FMI surveys as per the Lloyd's Register approved method and will not only highlight any anomalies but also work with the inspection team to ensure anomalies are fully investigated and confirmed to be correct.

Graph showing expected signal for a Dry, Flooded, Partially Flooded and Grouted member



Choosing Tracerco for your FMI ensures that you get your inspection right first time

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