APPLICATION NOTES:

PULSED EDDY CURRENT INSPECTION OF JETTY PILES

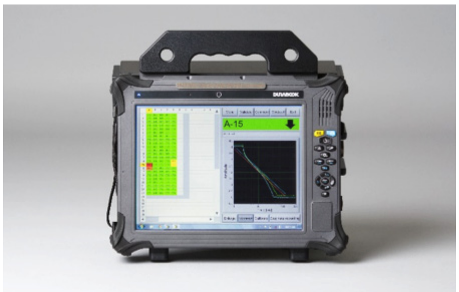
The tidal zone of jetty piles are commonly protected by a 'splash zone' coating. When this gets damaged, severe corrosion can occur, potentially undermining the structural integrity of vital harbor installations. Conventional inspections are hampered by the thick splash zone coating and the marine growth that build up.

Pulsed Eddy Current Testing (PECT) measures remaining steel thickness without having to remove the coating, deposits and marine growth. The splash zone can be inspected by rope access techniques or from boats using jigs strapped to the pile. Divers are frequently used for inspection are greater depth.

Based on many years of practical experience, the MAXWELL PECT is designed with a strong magnetic field to overcome the challenges of an offshore inspection. As a result:

- **It is not required to remove splash zone corrosion or marine growth, which can be as thick as 250mm;**
- **The MAXWELL PECT is powerful enough to measure through thick layers of corrosion product, which is a key requirement for reliable wall thickness measurements.**
- **The data is recorded in a single pulse, even for thick marine growth, enabling reliable data collection, even if waves and sea currents make it hard to keep the probe steady during data recording.**

The MAXWELL PECT instrument (top) can be connected via a 250m long underwater umbilical to a range of underwater probes (right) The depth rating is either 50m or 1000m.



Example of a color-coded wall thickness table of PECT wall thickness measurement recorded on a jetty pile, showing areas of severe wall loss. These data serves as input to mechanical assessments and helps to optimize maintenance programs.

PECT wall thickness readings [mm] of a 36" jetty pile

Elevation relative to mean sea level		Position around circumference											
		12^h	1^h	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
		0m	0.24m	0.48m	0.72m	0.96m	1.20m	1.44m	1.68m	1.92m	2.15m	2.39m	2.63m
1	0.3m	11.9	11.8	11.9	12.6	12.0	11.7	10.6	10.6	11.0	11.5	11.5	11.4
2	0.2m	11.7	11.7	12.5	11.9	11.8	12.2	9.9	9.4	10.4	11.9	11.8	11.5
3	0.0m	11.5	11.7	12.2	12.7	12.0	10.0	11.2	8.3	9.3	11.9	12.2	11.7
4	-0.1m	11.2	11.4	12.1	12.7	12.5	9.2	9.7	6.8	8.2	12.0	11.3	11.7
5	-0.2m	11.4	11.5	11.7	12.8	11.8	8.3	7.2	3.8	4.1	9.9	11.7	11.6
6	-0.3m	11.2	11.3	11.6	12.2	11.8	7.8	7.4	9.7	4.2	9.9	11.9	11.4
7	-0.4m	11.5	11.4	11.5	12.3	10.7	8.9	11.0	9.8	6.8	10.7	12.3	11.5
8	-0.5m	11.5	11.4	11.7	12.2	11.0	10.5	12.0	11.1	10.5	12.1	12.0	11.4
9	-0.6m	11.9	11.3	11.6	12.0	12.0	11.6	11.8	11.3	12.0	12.3	12.1	11.3
10	-0.7m	11.6	11.8	11.6	12.1	12.6	12.2	12.0	11.7	12.0	12.5	12.1	11.5
11	-0.8m	11.5	11.8	11.6	11.9	12.1	12.5	11.9	11.4	11.4	12.5	12.5	11.6
12	-0.9m	11.8	11.6	11.7	5.9	12.2	12.6	12.5	11.2	11.3	12.7	12.6	11.6
13	-1.0m	11.7	11.6	11.9	11.9	12.2	12.7	11.7	10.4	11.4	12.5	12.2	11.8
14	-1.1m	11.6	11.3	11.5	12.2	12.3	12.7	11.9	11.3	11.7	12.4	12.0	11.6
15	-1.2m	11.5	11.4	10.7	11.7	12.4	12.8	11.8	10.7	12.2	12.6	13.0	11.4
16	-1.3m	12.8	12.0	8.0	11.6	12.5	12.6	12.3	10.9	11.7	12.1	12.7	10.9
17	-1.4m	11.9	11.9	6.7	11.3	12.4	12.3	12.1	11.6	11.9	12.5	11.7	7.3
18	-1.5m	11.6	12.1	7.8	11.7	12.8	12.4	11.9	11.5	11.3	8.9	12.8	6.5
19	-1.6m	12.6	11.8	6.6	11.9	12.4	12.4	11.8	12.1	11.7	14.7	6.8	6.4

Color legend

Dark green	larger than		15.2	mm
Green	11.4	to	15.2	mm
Yellow	10.2	to	11.4	mm
Orange	8.9	to	10.2	mm
Red	less than		8.9	mm
Cyan	Calibration			

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