Solution Note

Introduction

One of the main applications of ultrasonic testing (UT) is thickness testing of plates and pipes to ascertain the remaining wall thickness and identify areas of corrosion/erosion.

A common method is to take individual 'spot' readings over a grid to cover large areas, e.g. 50 mm x 50 mm.

Figure 1- Wave carrying out thickness readings

Thickness Inspections

Traditionally, the inspector would record each reading on a notepad, stopping every few readings to record them down or having an additional technician accompany them to record readings as they were called out. This is both time-consuming and expensive for the client to pay for extra personnel or extra time on the job.

The Sonatest Wave, Masterscan, Sitescan series, and Alphagage have thickness logging capabilities, which are referred to as T-Log. This feature allows users to create a grid and record inspection readings directly into the set. There is no need for an extra technician or to stop and manually record readings!
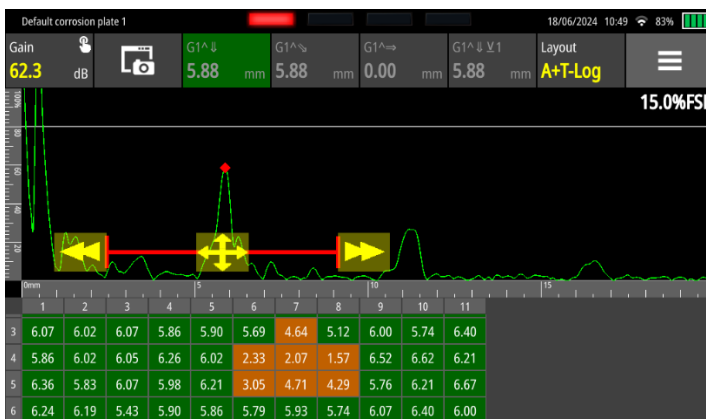

Figure 2 – T-Log on the Wave

- Aerospace Aeronautical Inspection
- Aerospace Astronautical Inspection
- Chemical & Petrochemical Sector
- Oil & Gas Sector
- Nuclear Energy Sector
- Wind Power Renewables Sector
- Transport Network Infostructure
- Rail Sector
- Military Sector
- Maritime Shipping Industries
- Pharmaceutical Sector
- Mining Sector
- Construction and Infostructure
- Technology & Research
- NDT Service Providers
- NDT Education

Application
- Corrosion / Thickness measurement
- Casting / Forging Inspection
- Composite Material Inspection
- Plastics Inspection
- Storage Vessel Inspection
- Asset integrity
- Flaw Detection and Evaluation

Typical Parts
- Pipeline corrosion assessment
- Storage Vessel plate inspection

Inspection Techniques
- Manual UT

Features and Benefits
- Simple recording of large data sets, no need for paper notes.
- Faster working with recording at a button press instead of manually writing results.
- Fast imaging of low spots with colour pallets on data.
- Logging option: Minimum thickness buffer when storing a cell.

T-Log Colour Pallets

When using T-Log data, users can easily apply colour pallets to highlight low/out-of-tolerance readings for fast detection.

On the Wave, this can be shown during data acquisition; for our other systems, this can be applied in the post-analysis of the data using the UTLity PC software.
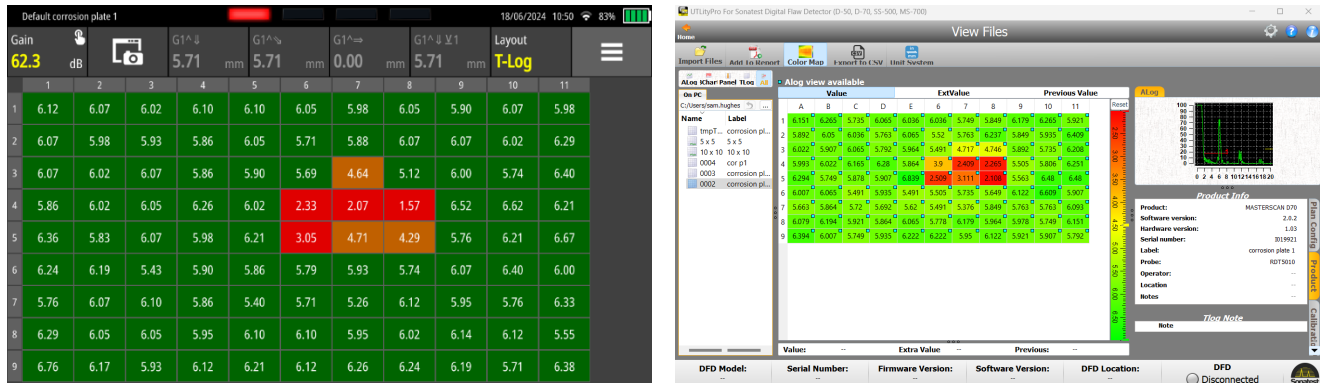

Figure 3 – Wave and UTLity displaying colour pallets of results

CSV Data Files

Both the Wave and the PC UTLity software can export data as an Excel CSV file, enabling users to use the data for remaining life calculations, to compare to previous data sets to determine a rate of corrosion, or to import it into reports.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	6.2	6.3	5.7	6.1	6.0	6.0	5.7	5.8	6.2	6.3	5.9		
2	5.9	6.1	6.0	5.8	6.1	5.5	5.8	6.2	5.8	5.9	6.4		
3	6.0	5.9	6.1	5.8	6.0	5.5	4.7	4.7	5.9	5.7	6.2		
4	6.0	6.0	6.2	6.3	5.9	3.9	2.4	2.3	5.5	5.8	6.3		
5	6.3	5.7	5.9	5.9	6.8	2.5	3.1	2.1	5.6	6.5	6.5		
6	6.0	6.1	5.5	5.9	5.5	5.5	5.7	5.6	6.1	6.6	5.9		
7	5.7	5.9	5.7	5.7	5.6	5.5	5.4	5.8	5.8	5.8	6.1		
8	6.1	6.2	5.9	5.9	6.1	5.8	6.2	6.0	6.0	5.7	6.2		
9	6.4	6.0	5.7	5.9	6.2	6.2	6.0	6.1	5.9	5.9	5.8		
10													
11													
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17													

Figure 4 – Exported CSV inspection data

For further information or support, please contact the Sonatest Applications Team: applications@sonatest.com

Recommended Tool Package

Category	Part #	Description
Acquisition Unit	Sonatest Wave Sitescan series Masterscan series Alphagage	https://sonatest.com/products/flaw-detectors https://sonatest.com/products/thickness-gauges/alphagage
Probe	Compression wave transducers	https://sonatest.com/products/transducers/compression
Software	UTLity/ Companion/ Data XLS	https://sonatest.com/products/software/utlity https://sonatest.com/products/software/wave-companion

Get in touch with your local Sonatest expert, available in more than 50 countries over 5 continents!

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