

# 3D Laser Scanner

A 3D laser scanner with dedicated software supports the need for cost-effective improved data quality, inspection speed, accuracy and repeatability for non-destructive testing of pipeline external corrosion and mechanical damage. The Field-Pack, with its touchscreen wireless tablet, allows real-time data visualization in the field. The 3D laser scanner records the damaged surface with a contactless dynamic referencing system that is compliant with existing code.

## PROCESS

### Setup

To prepare the pipeline surface for the scan and calibrate the unit, a clean, sandblasted surface yields best results. The 3D positioning system uses 6mm diameter reflective targets to allow the scanner to compensate for vibrations in field environments.

### Data Collection

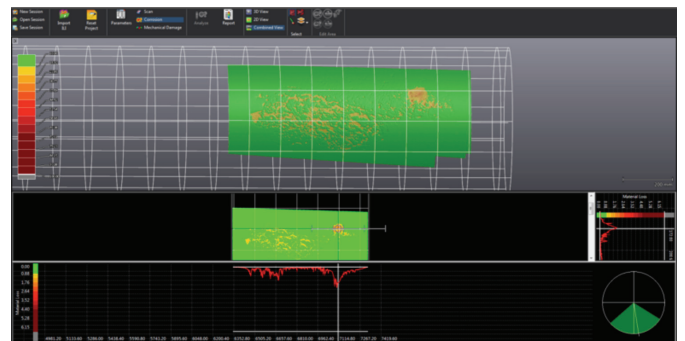
Once the corroded area is determined, the scanner begins the acquisition by moving manually along the pipe. The 3D file is saved in STL format.

### Reporting

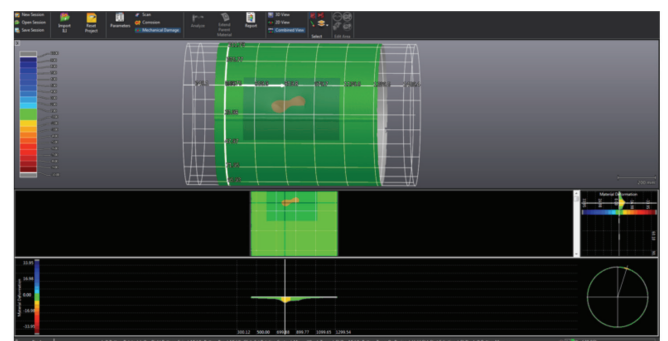
The pipeline parameters and analysis criteria are entered before calculation is launched with the pipeline 3D scan file. These parameters are useful for burst pressure calculation and to apply interaction rules. A report is auto-generated in Excel format for assessment to determine pipe remediation.

## BENEFITS

- Outperforms the conventional laser method, while solving most of its disadvantages.
- Follows code regulation.
- The inspection speed is reduced by more than 10 times versus the pit gauge technique.
- A dynamic referencing system, with the pipe and the spatial referential linked together, ensures they both move in a synchronized manner, which compensates for the pipe and scanner movements.
- Perfectly scaled and representative of real geometry.
- Allows easy external defect visualization.
- Analysis software is capable of managing large quantities of data to generate a comprehensive test results report in minutes.
- Repeatable results are ensured by the scanner design and the auto-generated report within +/- 50 microns accuracy.



CORROSION DAMAGE



MECHANICAL DAMAGE