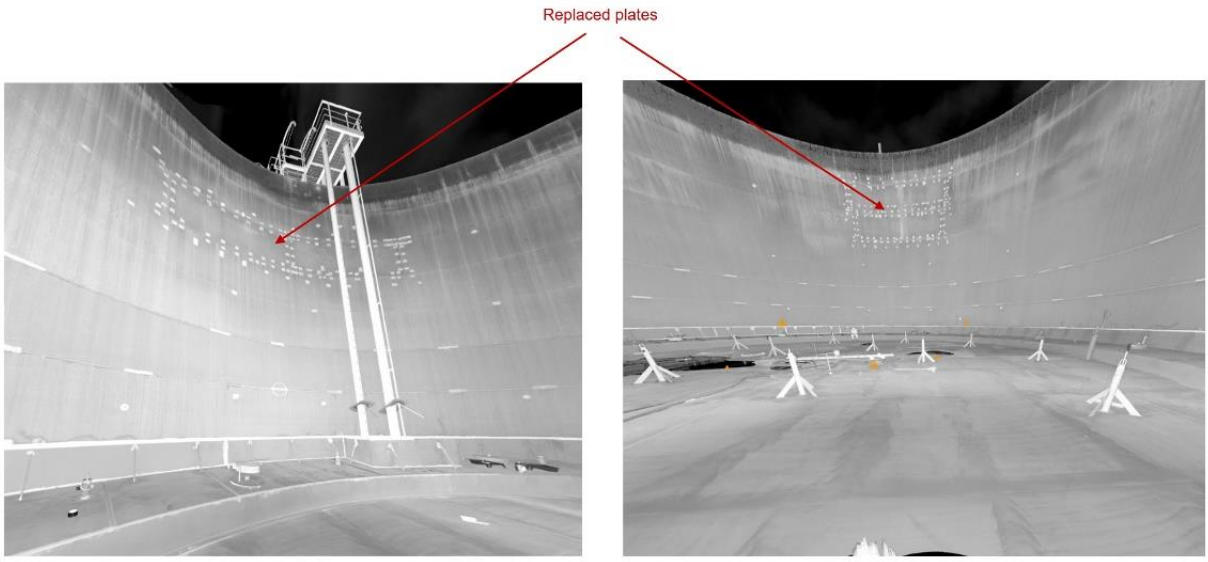
We're Going Global

STORAGE TANK SURVEY – 3D LASER SCANNER METHOD

In addition to performing storage tank calibration by the established physical tape, liquid addition, optical reference line and Electro-distance ranging (EDR) methods in accordance with various American and ISO standards, Amspec Petrospection is on the cutting edge of technology and has adopted the latest 3D laser scanner technology to survey tanks.

Although this technology has yet to be accepted by the American Petroleum Institute for use in the United States, 3D laser scanner technology is rapidly becoming accepted as the optimum method to accurately and efficiently capture geometric information for structures and landscapes overseas. This is especially true for storage tank survey, particularly for volumetric calibration, settlement, roundness and as-built data and layout information.



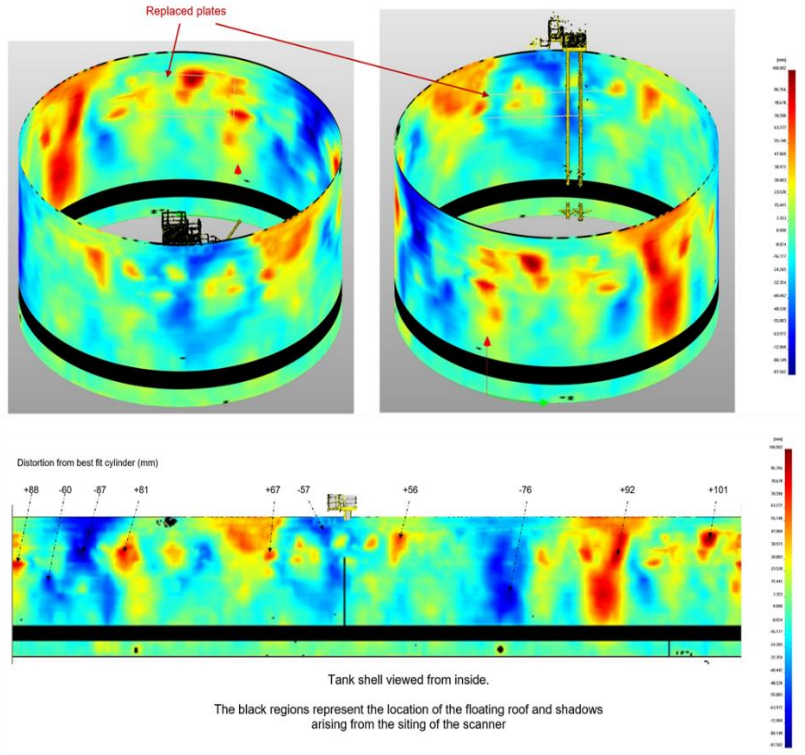
Photographic extract from Tank Point Cloud Model

The model produced by the 3D Scanner is retained as a record of the tank construction and can provide detailed geometric information for tank structures for future modifications or historical analysis.

A survey performed using the 3D scanner is completed in much shorter time than the alternate methods of calibration, meaning the tank can be returned to service quicker and confined space entry duration is reduced.

Tank Calibration

Currently, no international standards exist for the calibration of storage tanks by 3D laser scanner, however such standards are reportedly in the process of being developed.



Tank shell viewed from inside.

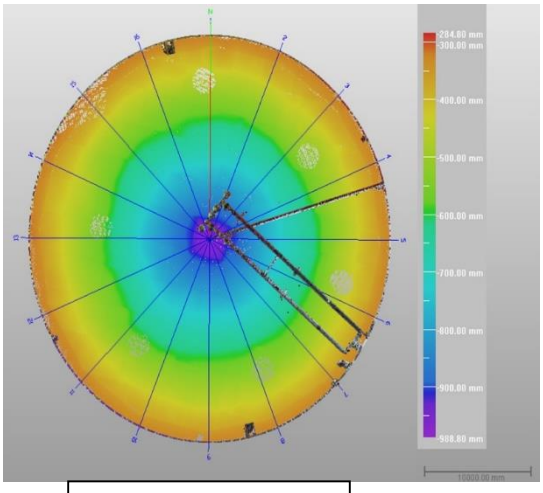
The black regions represent the location of the floating roof and shadows arising from the siting of the scanner

In the meantime, AmSpec Petrospection in Australia, has developed a method for tank calibration by 3D laser scanner that utilizes the Trimble proprietary *Realworks* software to produce tank raw volumes and established software that applies the necessary volume corrections and produces a tank calibration table in accordance with ISO Standard 7507.

AmSpec Petrospection is a National Association of Testing Authorities, Australia (NATA) accredited metrology laboratory, accredited by NATA for tank calibration by 3D laser scanner method.

NATA is the Australian authority that provides independent assurance of technical competence of organizations through a proven network of best practice industry experts and provides assessment and accreditation to laboratories and technical facilities.

NATA is a signatory to the ILAC Mutual Recognition Arrangement (MRA). ILAC (International Laboratory Accreditation Cooperation) is the international authority on laboratory and inspection body accreditation. The ILAC MRA signatories agree to accept the results of each other's accredited conformity assessment bodies under the ILAC MRA.



Floor Contour Map

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Also, please be advised individual / group AmSpec laboratory / operational tours can be arranged upon request.

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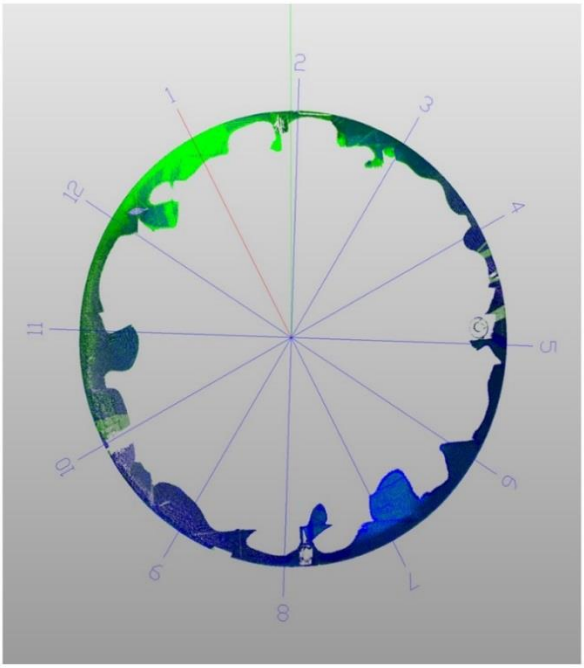
Floor Pooling Map



Non-Draining Volume: 160L

Hence, the results from the conformity assessment bodies accredited by the ILAC MRA signatories can be recognized internationally.

Production of Tank Calibration Table to ISO Standard 7507

The Amspec Petrospection software applies volume corrections for deadwood, liquid head and temperature to the raw volumes and produces a calibration table in accordance with ISO Standard 7507. This software has proven reliability over more than 20 years of tank calibration.

Tank Settlement and Roundness Survey to API Standard 653

The AmSpec Petrospection NATA accredited metrology laboratory in Australia is accredited to perform vertical tank settlement and roundness surveys and assessments to API Standard 653.

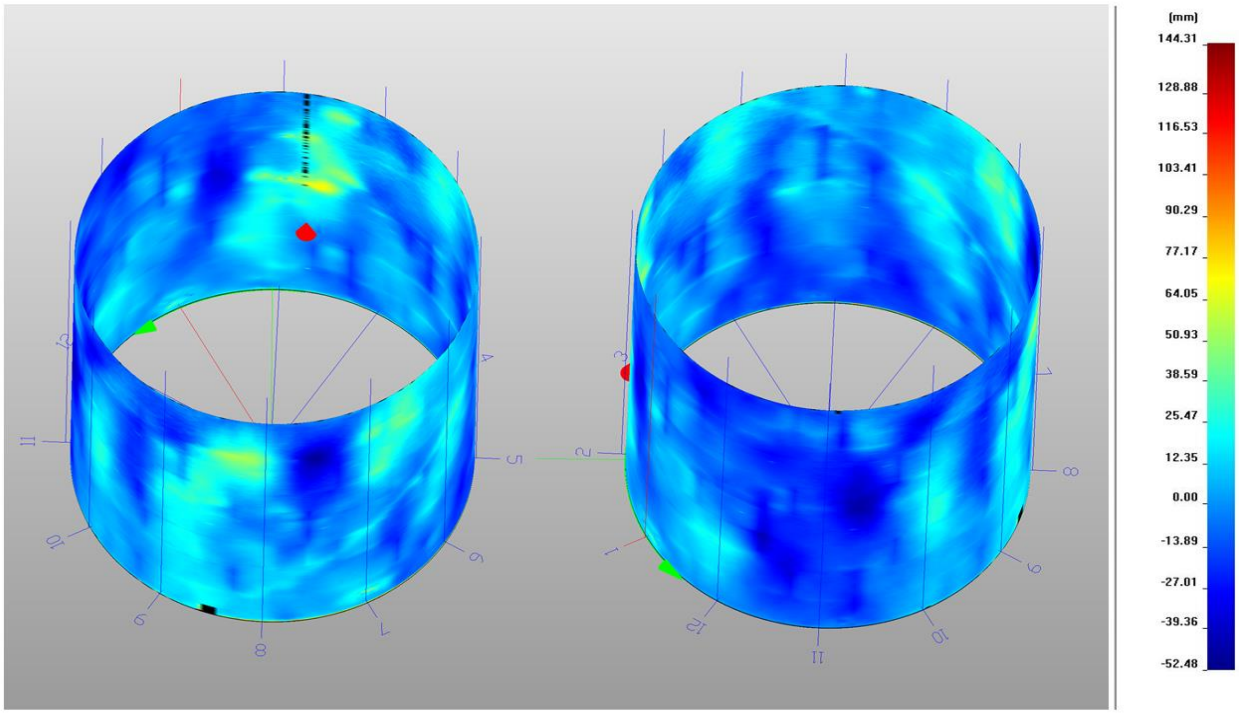
Many tank operators accept that a comprehensive tank settlement, foundation settlement and roundness survey is an important addition to an NDT and/or API 653 survey within their tank inspection program.

In consultation with industry, Amspec Petrospection has developed software to produce a report containing the graphical representations and calculations required for convenient assessment of tank shell roundness and floor edge and localized floor subsidence against API 653 criteria.

An Amspec Petrospection Settlement and Roundness Survey reports include graphical analysis, calculations and evaluation of results in accordance with the API 653 standard, to assist tank operators in assessing the tank condition.

A settlement and roundness survey can be produced from the same data collected for a tank calibration, though there are some specific scan location requirements for the settlement and roundness survey.

Tank Shell Cylindrical Contour Map



If you require further information,

please contact calibrations@amspecgroup.com