

RealWorks

ADVANCED-TANK EDITION

AUTOMATED STORAGE TANK INSPECTION AND REPORTING

Specialized Features For Storage Tank Inspection Professionals

Storage tank inspectors are adopting laser scanning as a measurement technology to collect dense, accurate data quickly in the field. Trimble worked closely with industry professionals to understand the specialized workflows and deliverables associated with storage tank inspections. The result is a software solution specifically for tank inspection operations involving laser scanning. Trimble RealWorks Advanced-Tank provides optimized processing, analysis, and reporting functions to provide results in a fraction of the time of traditional methods.

Streamlined Workflow

Trimble RealWorks Advanced-Tank offers a streamlined, guided workflow to quickly produce spatial inspection deliverables. The workflow can be summarized in just six steps:

- ▶ Import and register laser scanning point clouds
- ▶ Clean the data set to focus on the tank shell
- ▶ Define courses and vertical inspection stations
- ▶ Define tolerances for automatic issue detection
- ▶ Perform additional, focused inspection on out-of-tolerance features
- ▶ Generate industry-standard reports with customized content

Complete Toolset for Tanks

The Advanced-Tank Edition includes all of the features of Trimble RealWorks and adds specialized tools to automate storage tank inspections using laser scanning technology. A single software supports point cloud registration and editing, colorizing point clouds with high quality imagery, isolating the tank shell, and producing industry-standard reports.

Industry-Standard Reporting

Trimble RealWorks Advanced-Tank automatically produces graphic and textual reports as recommended in the API 653 Standard. Roundness reports are produced for each defined course and other selected vertical inspection intervals. Verticality reports are produced for each user-defined station.

Advanced Inspection Capabilities

Trimble RealWorks Advanced-Tank automatically detects areas that are out of tolerance. Following this automatic detection, issues can be inspected in greater detail and clearly reported to stakeholders. Complex internal structures including mixers, heaters, irregular floors, and specially-configured sumps can all be analyzed in detail to produce very complete inspection deliverables. The powerful tools in Trimble RealWorks also simplify the analysis of secondary containment systems. Allowing you to rapidly locate initial overflow points, areas that need remediation and the maximum holding volume.

Secondary Containment Analysis

Trimble RealWorks Advanced-Tank automated tools streamline the process of identifying holding volume potential and the spill points of storage tank secondary containment systems. The advanced reporting wizard allows for entering pass/fail criteria including rainfall parameters.

Complete Deliverables Without CAD

The Advanced-Tank Edition eliminates the need to use CAD software to create final inspection reports. All of the measurements, charts, and tables for industry-standard reports are created in Trimble RealWorks. Published packages provide an additional, interactive way to share tank inspection details. Save time and money producing complete datasets in a single software environment.

Key Features

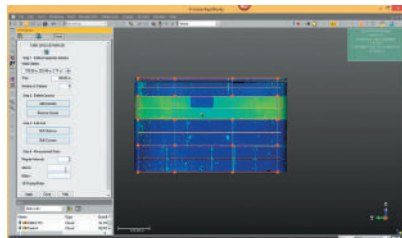
- ▶ Efficient, streamlined workflow
- ▶ Automated industry-standard reporting
- ▶ Rapid detection of areas exceeding tolerances
- ▶ Complete deliverable production in a single software



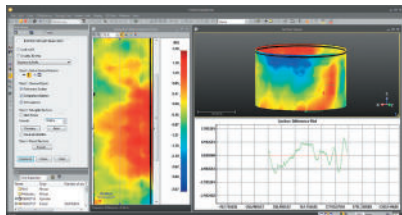
ADVANCED-TANK EDITION FEATURES

Simplified Workflow

- Easy configuration to analyze tanks following API 653 Standard guidelines
- Rapid, automated detection of out-of-tolerance areas
- Advanced analysis tools for precise inspection in the office



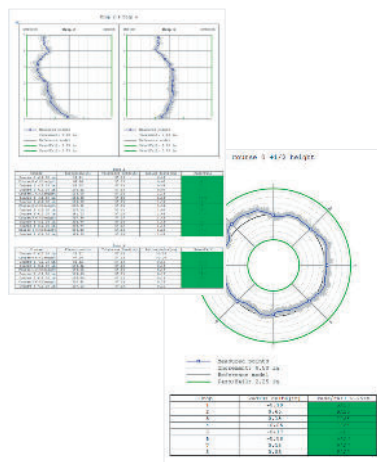
Select station spacing, vertical intervals and set tolerances for automated reporting



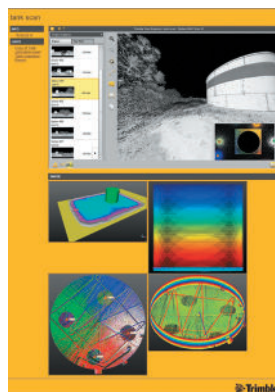
Perform detailed analysis of tank shell features in the office

Industry-Standard Deliverables

- Graphical and tabular outputs following API 653 Standard reporting guidelines
- Clear reporting of tolerance pass or fail



Graphic and tabular reports following API 653 Standard guidelines



Publish rich, detailed results for the Trimble RealWorks publisher

ADDITIONAL TRIMBLE REALWORKS FEATURES

Data Handling and Management

- Perform standard data management tasks such as importing and exporting common data formats
- Manage, process, and analyze large datasets with powerful visualization tools

Point Cloud Registration

- Precise registration tools to quickly register projects and analyze results
- Automatically detect and create sphere and flat black and white targets then register
- Quickly analyze and edit targets using the Target Analyzer Tool
- Feature-based target-less registration enables you to automatically register scans without having to place targets or manually pick common points.
- Advanced registration refinement techniques ensure rapid best-fit solutions

2D and 3D Deliverables

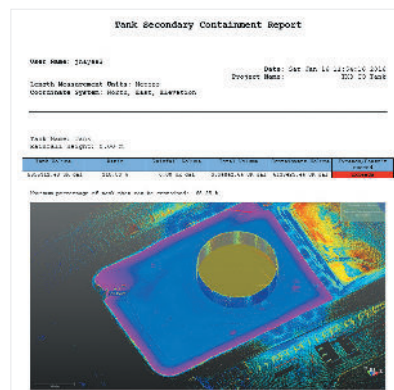
- Cross sections
- Meshes
- Contours
- Volumes
- Line Work
- Ortho-photos
- Models

Advanced 3D Deliverables and Inspection

- Inspect as-built data, comparing it to the design
- Obtain 2D & 3D graphic visualization of gaps and deformations for easy analysis and issue detection
- Perform smart measurement – semi-auto clearance, projected vertical and horizontal
- Import profiles and geometric primitives from a CAD design file in .dxf or .dwg, and export graphic files in .dxf and .dgn
- Print results directly using the RealWorks integrated print-out interface
- Partial and complete 3D CAD Model generation
- Direct export to Trimble SketchUp Pro as .skp file or in real time
- Publish project packages for easy viewing, measurement, and annotations.
- Published packages can include media such as images and video along with links to documents and webpages
- Communicate results via video generation and Google Earth export (kml format)

Advanced Interactive Deliverables

Beyond reporting industry-standard details, Trimble RealWorks has the ability to publish the data for viewing and collaboration. Published projects allow stakeholders to view point cloud data, imagery, perform measurements and make annotations. Published packages can include links to documents or websites for a complete, interactive project review. Quickly share complete storage tank inspection details with all stakeholders.



Secondary containment report analysis

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