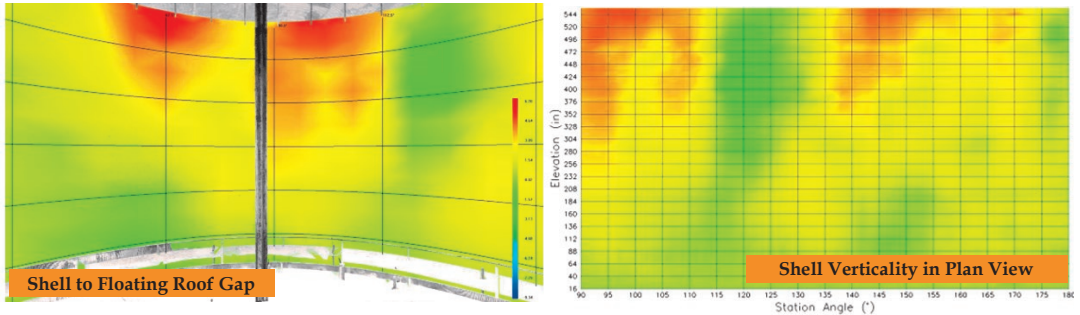


Engineering Services

**Storage Tanks • Pressure Vessels • Pipelines
Tank Farms • Terminals • Refineries • Plants**



TechGroup and TechnoSoft

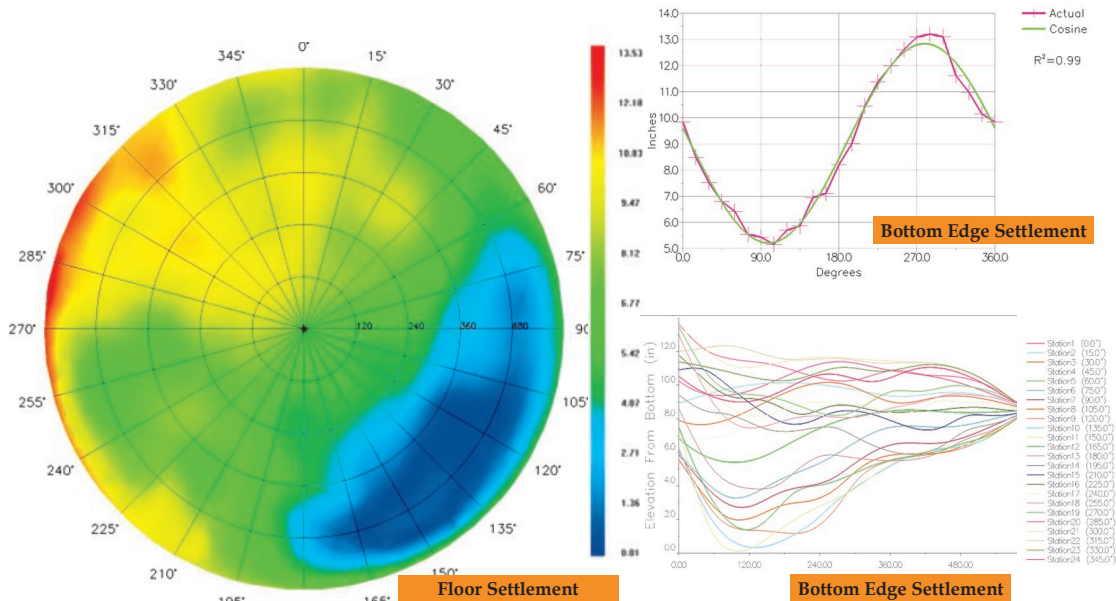
Strategic planning and flawless execution are key requirements when competing in today's global marketplace. Whether you are planning new construction, assessing the fitness of current tanks, vessels, and pipelines, or in need of certified inspection services, **TechGroup** can support you. **TechGroup** engineering and technical services team is ready to support you in the design, fabrication detailing, and construction planning of new plants, and in the inspection, evaluation, and repair planning of existing assets. **TechGroup** is a consortium of leading international service and engineering organizations formed in technology partnership and teaming agreement with **TechnoSoft**.

TechGroup

TechGroup is a full service inspection, testing, and reliability engineering company. **TechGroup** brings together the most advanced technology available with qualified, trained, and certified personnel to solve the toughest industry problems.

TechGroup is a worldwide consortium of organizations offering over six hundred qualified, experienced, certified and reliable individuals with expertise in inspection, non-destructive testing, and advanced non-destructive testing. With over eighteen offices throughout the world our company is well equipped to handle nearly any reliability program requirement no matter the complexity or location.

Our clients rely on us to manage their day to day inspection and testing requirements, whether rolling out a mechanical integrity program, supporting expansion projects, or providing additional support during routine and emergency plant outages. With our large and diverse group of inspectors and technicians we can ramp up projects quickly no matter where the project exists.



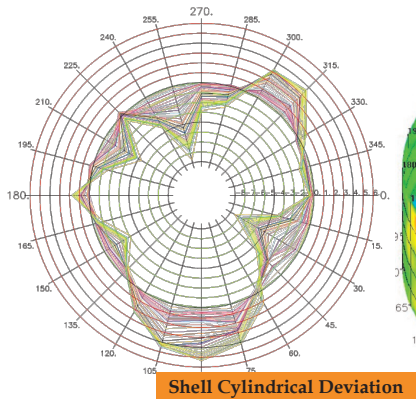
TechnoSoft

TechnoSoft is a leader in knowledge-based engineering and technology development with a dedicated and innovative group of engineers and scientists with broad experience in a wide range of engineering domains.

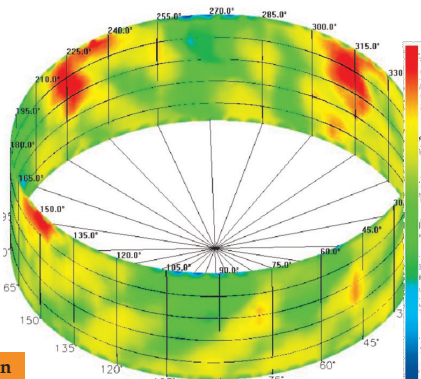
TechnoSoft offers a complete suite of applications and services for engineering and evaluation of field-erected and shop-built storage tanks and pressure vessels. **AMETank** is an application software for the engineering of storage tanks per API 650 and API 620 standards. It provides an interactive feature-based design environment for rapid configuration and layout of tank bottom, shell, roof, structure, and appurtenances.

AMETank automates the generation of layout, assembly, and fabrication drawings, design calculation reports, component fabrication lists, material purchase tables, and costing data.

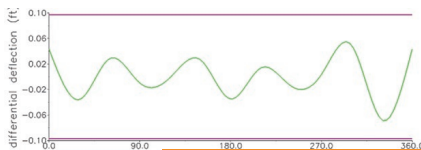
AMPReVA enables the rapid design and detailing of pressure vessels, automating the generation of 3D geometry models, elevation and layout drawings, fabrication and assembly drawings, production component lists and bills of material, design calculation reports, and detailed cost estimation. **AMPReVA** supports the engineering of vertical and horizontal pressure vessels designed per ASME Section VIII Division 1.



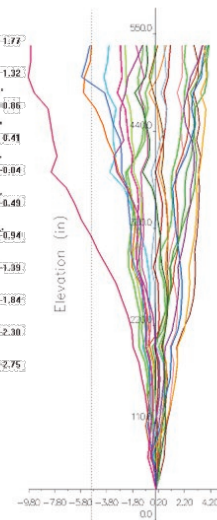
Shell Cylindrical Deviation



Shell Cylindrical Deviation



Shell Differential Settlement

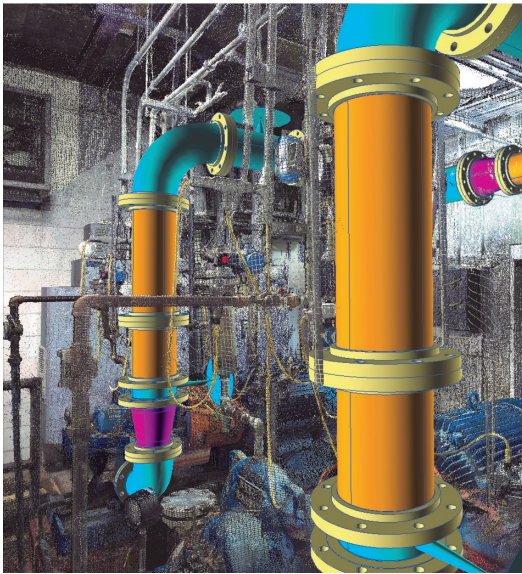


Shell Verticality

As-Built Digital Reconstruction and Integrity Analysis of Tanks and Vessels

TechGroup provides high definition surveying and evaluation services including laser scanning and digital reconstruction for geometric evaluation and integrity analysis of tanks. Detailed reports on the evaluation of as-is condition of tanks include the generation of 3D models and layout drawings of floor, shell, roof, structure, and appurtenances. Analyses of tanks for bottom and foundation settlement, shell roundness and verticality, structural column verticality, and floating roof to shell operation assessment are also included. Tank calibration and the generation of strapping tables is also a supported service. Services for conducting detailed 3D finite element analysis (FEA) of the tank as-is model for various operating conditions and load combinations are supported.

The reconstructed model of the as-is condition of tanks is used in conjunction with corrosion inspection results to report calculations on corrosion rates, safe fill height, seismic evaluation, maximum working pressure, remaining life, and other evaluations as per API 653. For new tanks or vessels, the model digitally reconstructed from laser scans can be validated against **AMETank** or **AMPreVA** 3D models.



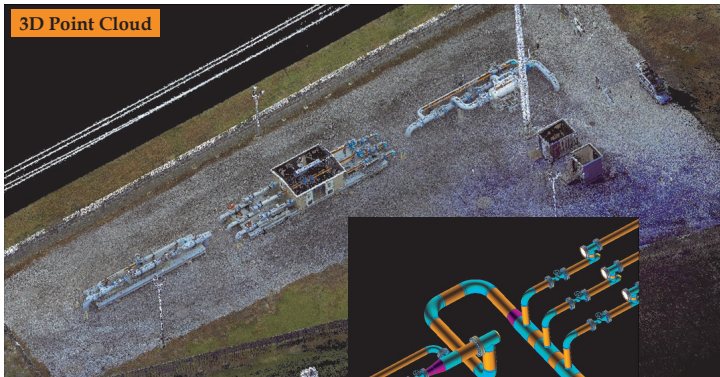
High Definition Surveys, As-Built Digital Reconstruction, and 3D Modeling of Facilities

TechGroup offers high definition survey services through laser scanning of complete facilities to digitally reconstruct and assess fitness for operations of facilities. Using **TechnoSoft's** custom engineering applications, detailed 3D models of tanks and vessels, pipelines, ducts, and supporting structures, along with associated process flow and instrumentation diagrams (PFDs and P&IDs) can be generated. Interoperability and cross referencing are directly supported between the generated as-built 3D models, scan point clouds, and diagrams.

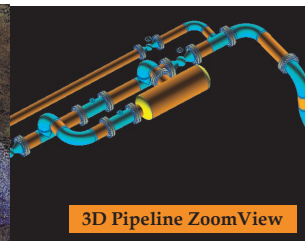
TechGroup offers a complete suite of applications tools, engineering, and inspection services. Our experienced engineering team can support you in the new design, inspection, repair, or upgrades of your refineries, terminals, and tank farms including process and mechanical systems, vessels, storage tanks, and pipelines.

The **TechGroup** team includes certified inspectors to conduct tank evaluations, generate detailed reports on inspection findings and repair recommendations, and perform post-repair services.

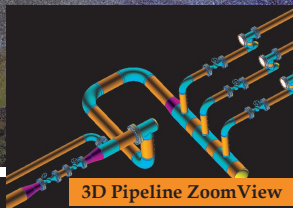
3D Point Cloud



3D Pipeline ZoomView



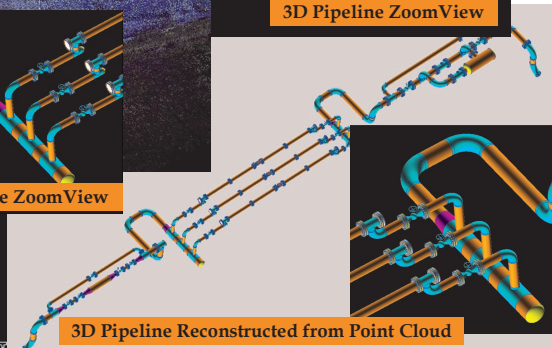
3D Pipeline ZoomView



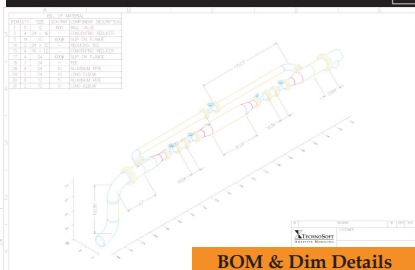
P&ID and PFD



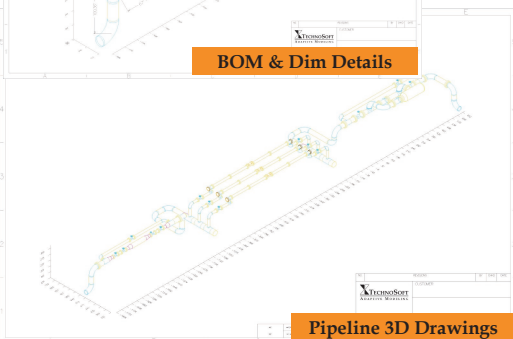
3D Pipeline Reconstructed from Point Cloud



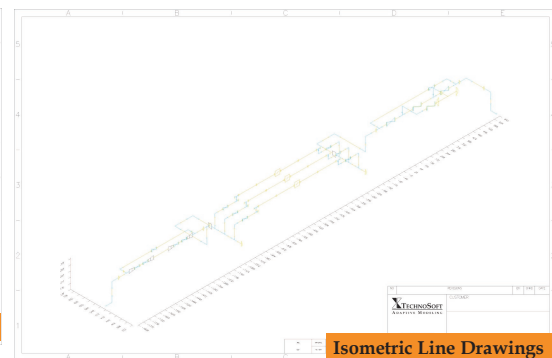
BOM & Dim Details

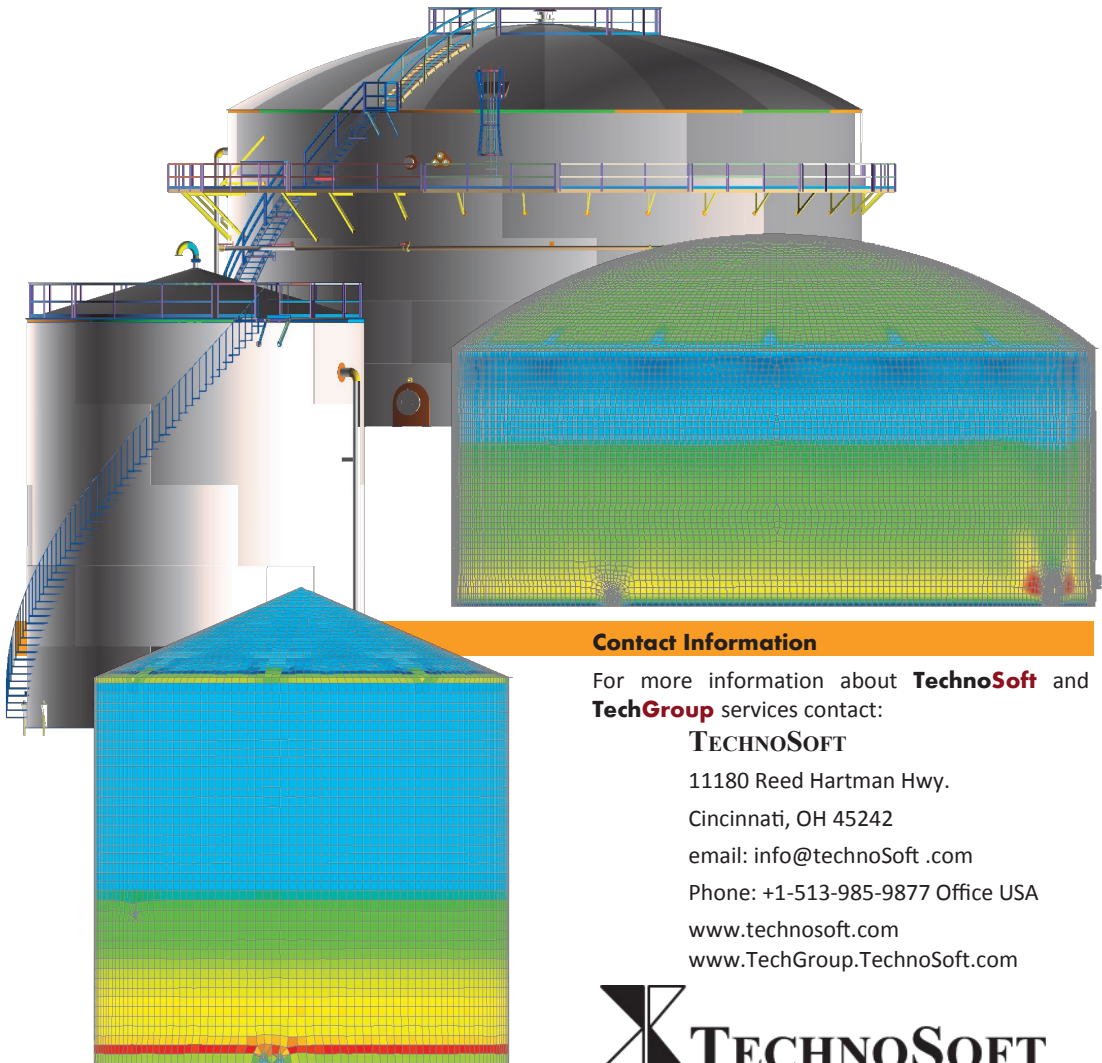


Pipeline 3D Drawings



Isometric Line Drawings





Contact Information

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