

AMETank

**Field Erected and Shop Built Storage Tanks
Engineering Application Software**

- Tank Design Calculations
- Detailed 3D Production Models
- Layout and Fabrication Drawings
- Production List and Bill of Material
- Fabrication Details for Cost Reports

The screenshot displays the AMETank software interface. On the left is a tree view of the model tree, including components like Roof, Shell, and Bottom. The central panel shows 'Design Parameters' for 'API STANDARD Design Temperature' with various input fields and dropdown menus. On the right is a 3D perspective view of a tank with a complex internal structure, including a platform and stairs. At the bottom, a 'Shell Courses Data Table' is open, showing a table with columns for Course, Width, Material, CA, JE, and various strength and stress values.

| Course (1 Bottom) | Width | Material | CA | JE | Min Yield Strength (ksi) | Tensile Strength (ksi) | Sd (in) | St (in) | f-Req (ksi) | f-Calc (ksi) | f-min External Pressure (ksi) | f-min External Pressure (ksi) | f-min (ksi) | f-Actual (ksi) | Shell OK | |
|-------------------|-------|----------|----|----|--------------------------|------------------------|---------|---------|-------------|--------------|-------------------------------|-------------------------------|-------------|----------------|----------|----|
| 1 | 120 | A36 | 0 | 1 | 36000 | 58000 | 23000 | 24900 | 0.375 | 1.087293 | 0.520964 | 0.832868 | 0.436817 | 1.087293 | 1.25 | OK |
| 2 | 120 | A36 | 0 | 1 | 36000 | 58000 | 23000 | 24900 | 0.375 | 0.828414 | 0.701687 | 0.637651 | 0.436817 | 0.828414 | 1 | OK |
| 3 | 120 | A36 | 0 | 1 | 36000 | 58000 | 23000 | 24900 | 0.375 | 0.569534 | 0.46241 | 0.440835 | 0.436817 | 0.569534 | 0.75 | OK |
| 4 | 120 | A36 | 0 | 1 | 36000 | 58000 | 23000 | 24900 | 0.375 | 0.31655 | 0.263133 | 0.242713 | 0.436817 | 0.375 | 0.375 | OK |
| 5 | 16.0 | A36 | 0 | 1 | 36000 | 58000 | 23000 | 24900 | 0.375 | 0.051776 | 0.043855 | 0.045114 | 0.436817 | 0.375 | 0.375 | OK |

Rapid Design and Detailing

AMETank enables the rapid configuration, design, and detailing of above-ground shop-built and field-erected storage tanks.

AMETank supports design calculations conforming to API 650, API 653, API 620, AWWA D100, AWWA D103, and EN 14015. Design of elevated tanks with legs and skirts, and, double wall cryogenic tanks are supported.

Design calculations for shell courses, floors, roofs, structures, anchors, nozzles, manways, and cleanout doors are supported. Calculations include seismic, internal and external pressures, and wind loading.

Design reports include calculation formulation and details in US and SI units. Thicknesses and sizes are calculated for various conditions and used for defaults as well as for validation of user inputs.

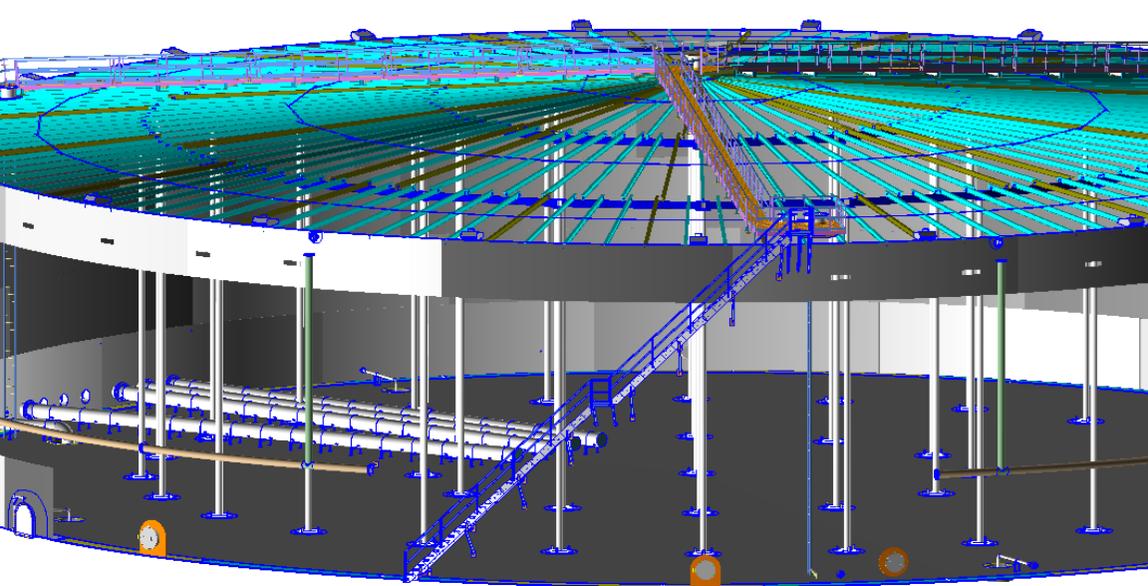
Easy to use Graphical User Interface

AMETank supports a fully interactive 3D graphical user interface.

The configuration and layout of the tank shell, floor, roof and structure, and subsystems are facilitated through intuitive menus with options customized specifically for tank design.

A complete design can be configured and detailed in less than two hours including the automatic generation of:

- Tank 3D geometry with production details
- To-scale drawings including general arrangements, weld maps, fabrication, assembly, nesting, and CNC
- Components fabrication Bill of Quantities (BOQs), purchased Bill of Materials (BOMs), weight reports, welds reports, and cost calculations
- 3D Meshing and Finite Element Analysis models



Tank Design Layouts and Configurations

A wide range of storage tank designs and configurations including elevated with legs or skirts, double-wall with suspended roof, welded and bolted, and with anchors or straps are supported.

Roof layouts include self and structurally supported, single and multi-bay cone, dome, and flat designs. Roof structures or stiffened plates for umbrella, dome, and cone roofs including various configurations for columns, girders, rafters, and truss design are supported.

The design and detailing of external and internal floating roofs with single and double decks are supported.

Shell courses, stiffening rings, and wind girders can be designed. Bottom types include sloped, shoveled, double, or elevated, with staggered or ribbon layout with optional annular rings. Plates can be lap or butt welded. Various foundation details are supported.

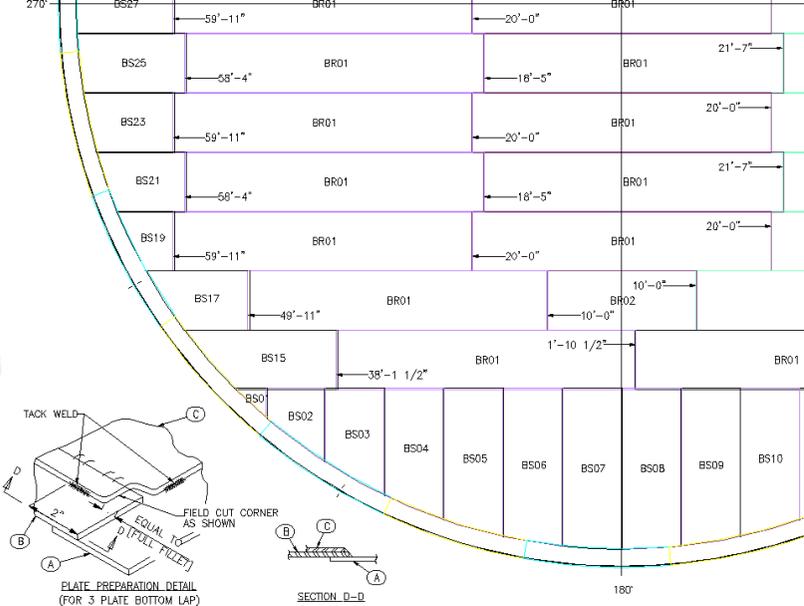
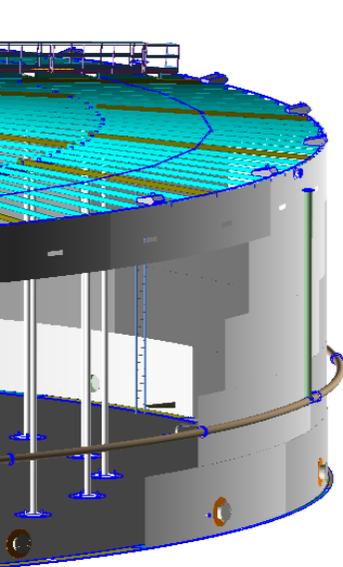
Stairs, Ladders, Platforms, & WindGirders

The configuration and detailing of radial and spiral stairways with intermediate platforms are supported. Single and double stringer design with various types of hand railings and posts are included.

Ladders with cages, climbing devices, safety cables, gates, removable start ladders, and intermediate platforms, with bolted or welded clips are supported. Internal rolling and hinged ladders for floating roof access can be configured.

Wind girders with variable sections and different structural attachments are supported. Wind girder railings and integration with optional access from stairways are supported.

Roof walkways, stairs, and platforms with different railing configurations and attachments are supported. Bridges and stairway towers for common access to different tanks are also supported.



Internal and External Appurtenances

Manways with davit arms, hinges, handles attached to shells and roofs are provided. Rectangular and circular hatches, cleanouts, vents, couplings, and nozzles with flanges, elbows and other attachments and configurations are supported.

Sampling systems, overflows, draw-offs, diffusers, foaming and fire suppression systems are supported. Various configurations for weir boxes, end flanges, structural supports, and other options are included.

Liquid level gauges and gauge poles can be integrated. Scaffolding cable supports, lifting lugs, grounding lugs, tray supports, baffles, and hundreds of other internal and external appurtenances are supported.

Heating coils and supports with various configurations and details are supported.

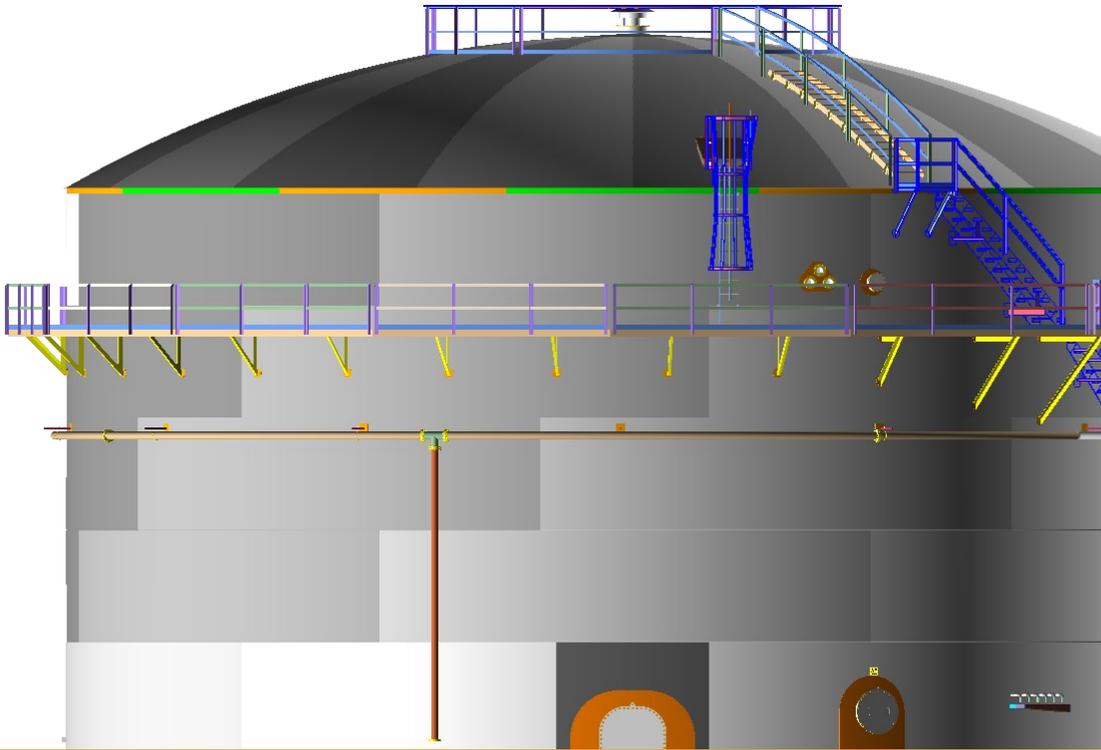
Layout Fabrication Drawings and Reports

The plates layout and fabrication details for shells, floors, and all roof types including designs with knuckle edge plates are provided. Details include plate dimensions, overlaps, and weld types. Output for NC machines is supported.

The generation of shell weld maps and shell rollout drawings, with details including appurtenances, stairs, ladders, and other systems is supported.

Detailed assembly and component fabrication drawings for all substructures, appurtenances, ladders, platforms, stairs, and any other subsystems are supported.

3D models, drawings, BOQs, BOMs, weights, and cost data can be edited within **AMETank** or exported.



Tank Rapid Design and Detailing Environment

From configuration and design to 3D geometry, detailed bill of material, purchase list, cost data, and to-scale fabrication and layout drawings, in two hours.

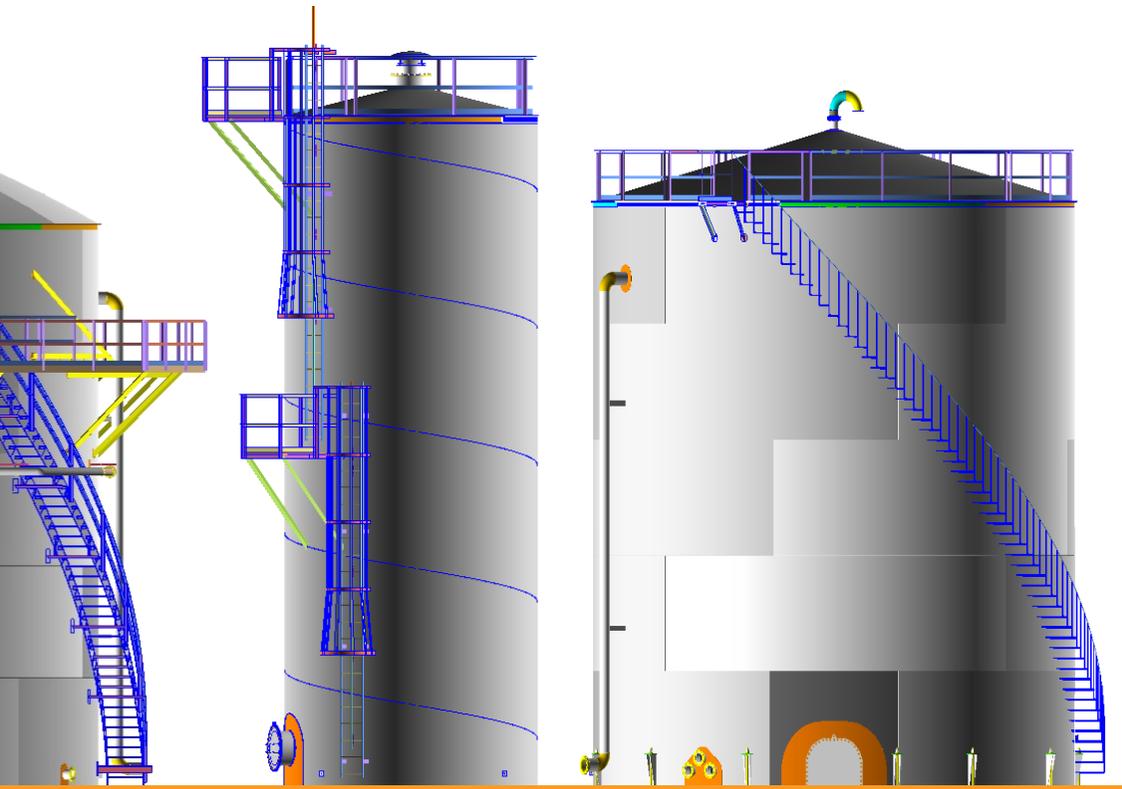
Design changes can be made within minutes to modify, add, or delete features. The 3D geometry, drawings, bill of material, plate cut data, and cost reports are automatically updated.

Custom and easy-to-use graphical interface. **AMETank** can be mastered in two three-hours sessions of training.

 **TECHNO**SOFT

AMETank

Field Erected and Shop Built Storage Tanks



AMETank, AMPreVA, and AMInTank

AMETank, AMPreVA, and AMInTank are engineering software developed by TechnoSoft. For the past 30 years, TechnoSoft has successfully deployed engineering software applications in various industries ranging from aerospace to automotive and capital equipment.

For tank inspection, rating, and repair planning per API 653 refer to **AMInTank**, a TechnoSoft product. Visit AMInTank.technosoft.com

For pressure vessel design and detailing per ASME refer to **AMPreVA**, a TechnoSoft product. Visit AMPreVA.technosoft.com

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