

# 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. The top window shows a 3D model of a storage tank with a staircase and various design parameters. The middle window shows a table of design parameters, and the bottom window shows a table of shell courses data.

**Design Parameters**

Parameter	Value	Units
Governing Standard	API STANDARD	Design Temperature
Governing Standard Edition	11TH EDITION	Maximum Operating Temperature
Appendix (CS)	APP. F	Internal Pressure (Design Pressure)
API 650 Addendum	Addendum 1	External Pressure
Maximum Liquid Level	4.7	ft
High High Liquid Level	42.5	ft
High Liquid Level	41.43	ft
Normal Working Level	40.99	ft
Low Design Liquid Level	4.5	ft
Capacity Unit	BBLs	Specific Gravity
Maximum Capacity in BBLs	265,030	Joint Efficiency
Working Capacity in BBLs	295,847	Partial Stress Relief
Net Working Capacity in BBLs	292,541	Anchorage
Minimum Operating Capacity in BBLs	22,739	Design By
Tank WT Empty	0	Design Date
Tank WT Product	102172	Checked By
Tank WT W/Product	0	Checked Date
Minimum Design Temperature	30	deg F
Seismic Use Group	I	Design Wind Velocity
Seismic Site Classification	D	Wind Load Exposure
Importance Factor	1	Wind Importance Factor

**Shell Courses Data Table**

Course (1 Bottom)	Width	Material	CA	JE	Min Yield Strength (ksi)	Tensile Strength (ksi)	Sd (in)	St (in)	t-min Erection (in)	t-Freq (ft)	t-Calc (ft)	t-min External Pressure (in)	t-min Internal Pressure (in)	t-Actual (ft-us)	Shell Thickness		
1	120	A36	0	1	36000	58000	23000	24900	0.375	1.087293	0.520964	0.832868	0.436817	1.087293	1.25	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	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	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	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	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.

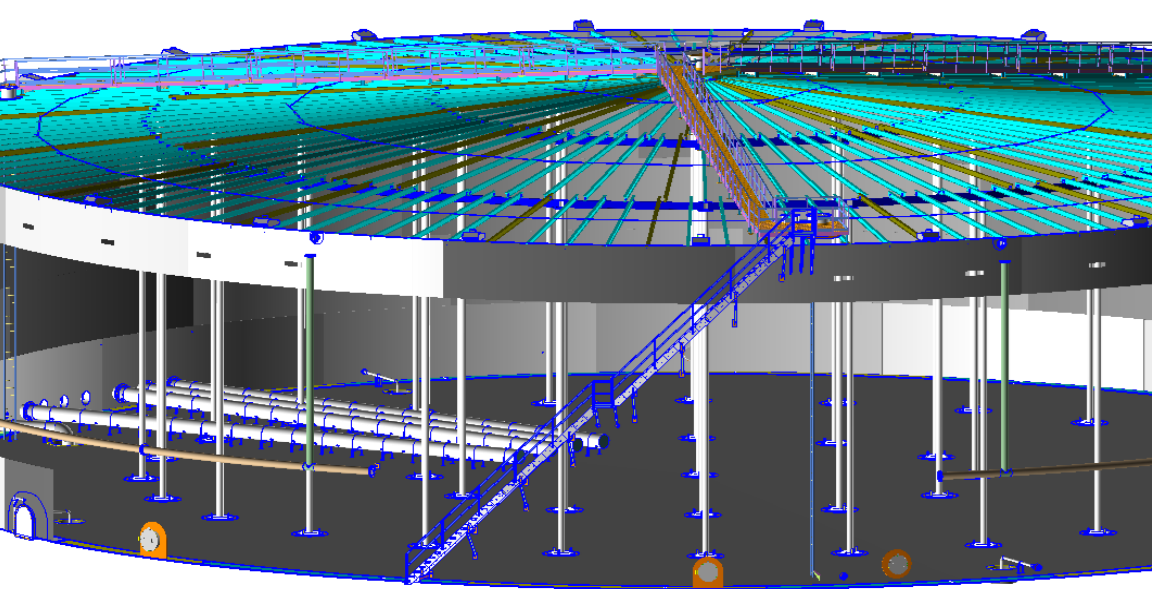
## Easy to use Graphical User Interface

**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.

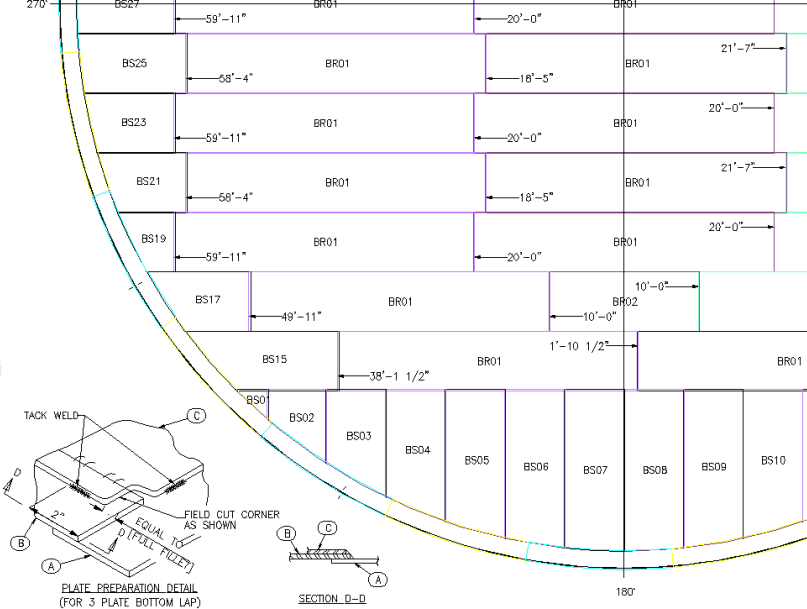
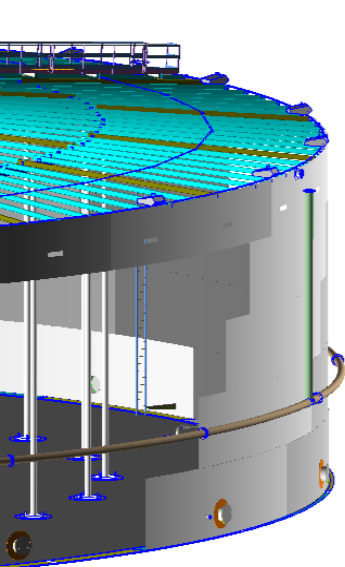
### Stairs, Ladders, Platforms, & WindGirders

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.

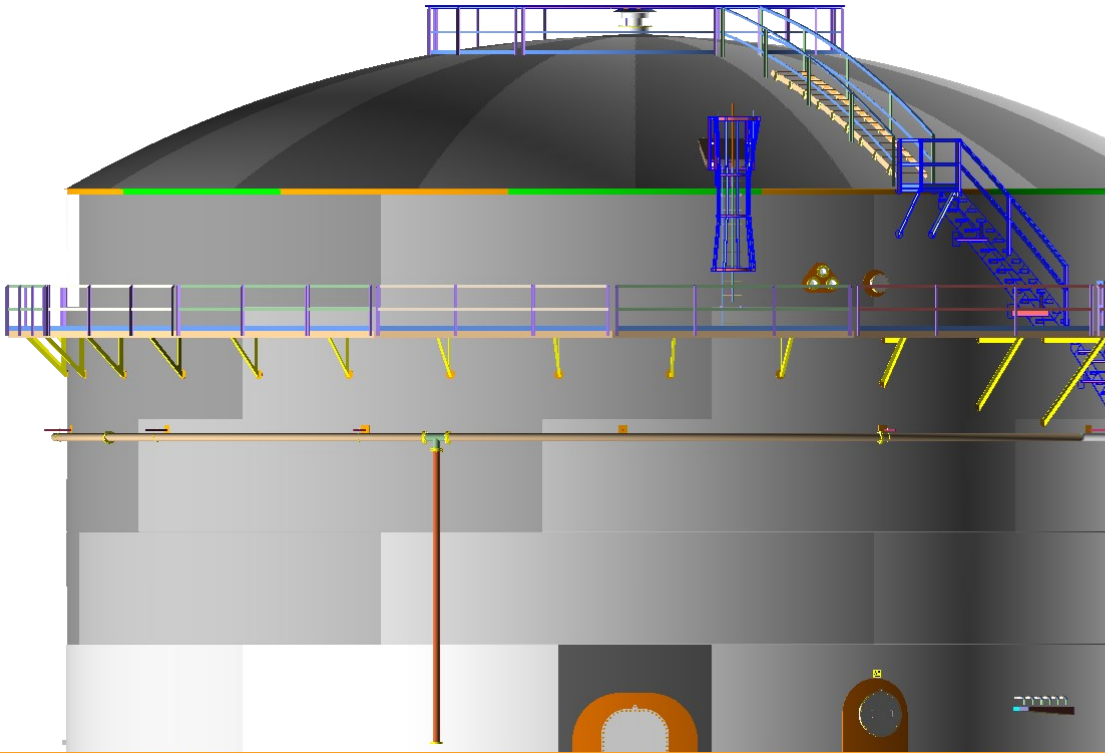
## Layout Fabrication Drawings and Reports

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.

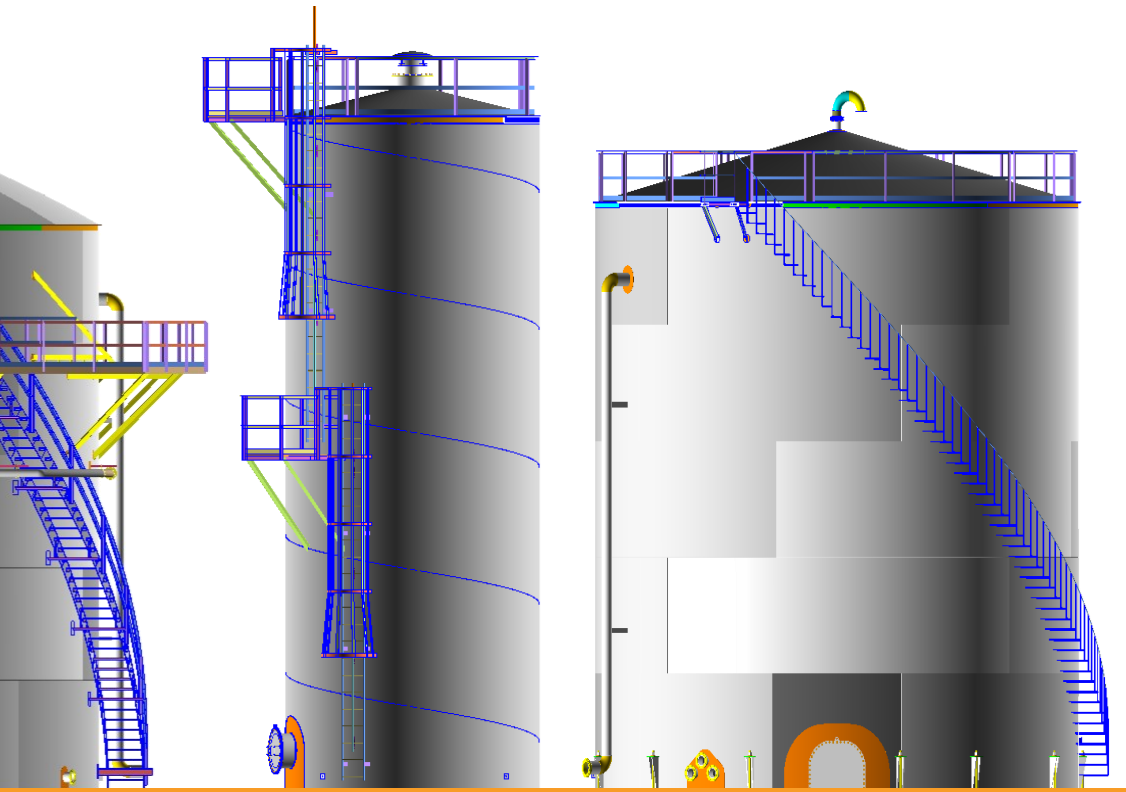
Design changes can be made within minutes to modify, add, or delete features. The 3D geometry, drawings, bill of material, plate cut data, and cost reports are automatically updated.

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](http://AMInTank.technosoft.com)

For pressure vessel design and detailing per ASME refer to **AMPreVA**, a TechnoSoft product. Visit [AMPreVA.technosoft.com](http://AMPreVA.technosoft.com)

Copyrights TechnoSoft Inc.

## **Sales and Contact Information**

For more information about **AMETank** contact:

**TECHNO**SOFT  
11180 Reed Hartman Hwy.  
Cincinnati, OH 45242

Phone: +1-513-985-9877  
[AMETank@technosoft.com](mailto:AMETank@technosoft.com)  
[www.AMETank.com](http://www.AMETank.com)  
[www.TechnoSoft.com](http://www.TechnoSoft.com)