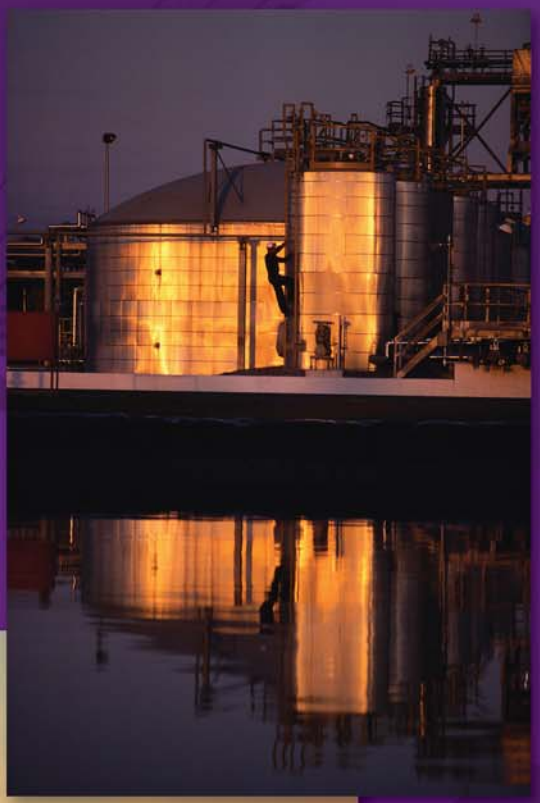
COADE®
ENGINEERING SOFTWARE

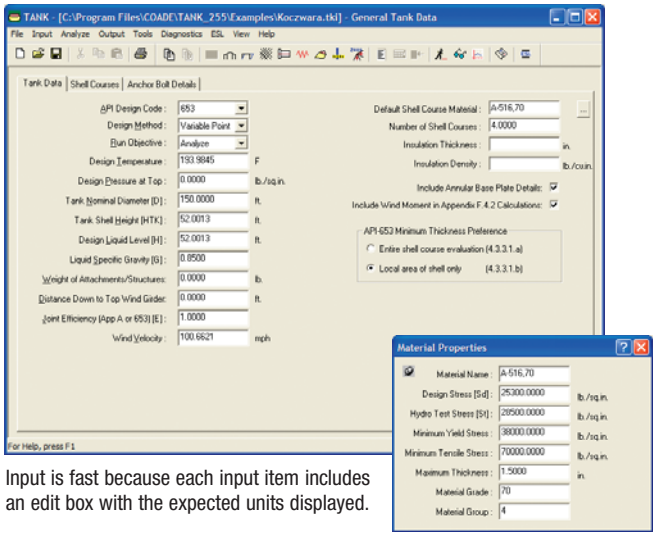
# COADE TANK™

## Storage Tank Design, Analysis and Evaluation

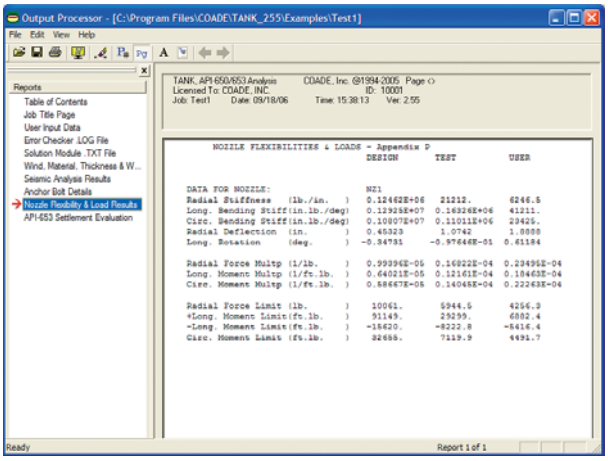


# **TANK:** Design, Analysis & Evaluation of Oil Storage Tanks

TANK is a comprehensive, easy-to-use software program for the design, analysis and evaluation of welded steel oil storage tanks according to American Petroleum Institute (API) Standards 650 and 653. It provides owners, operators and engineering firms with quick and comprehensive designs for new tank construction and evaluation of existing tanks.




Input is fast because each input item includes an edit box with the expected units displayed.




After error checking and analysis, users can view results in a tabular, text report (shown above) or as graphic output.

## TANK: Accurate and Reliable Results

### EASY

TANK makes the analysis and evaluation of oil storage tanks easy and intuitive. The menu-driven interface makes analysis a breeze and its context-sensitive help means that you get help when you need it.

### ACCURATE

TANK provides accurate analysis results and useful cost evaluation. You can be sure that your chosen tank configuration is designed to code and as efficiently as possible.

### RELIABLE

The program's strategic updates with key enhancements have given its users the confidence that TANK will deliver superior results every time.

## TANK provides the following capabilities—right out of the box!

**Built for Real-world Applications**
- Created By and For Engineers

**Designed for Fast Input**
- Intuitive Forms Make Input Easy

**Complete Unit Flexibility**
- Create Any Analysis Unit

**Material Databases**
- Insert and Define Any Material

**Steel, Seismic and Nozzle Info**
- Design Info Readily Available

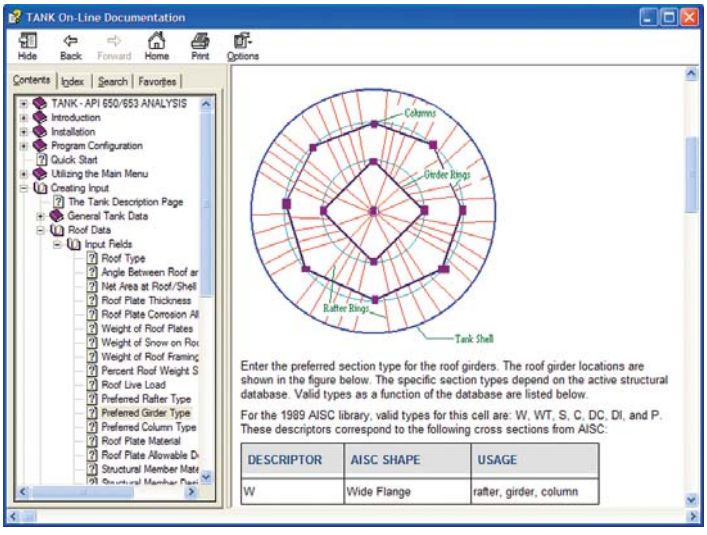
**Full Customization Flexibility**
- User-defined Analysis Criteria

**Convenient Error Checking**
- Complete Pre-analysis Checks

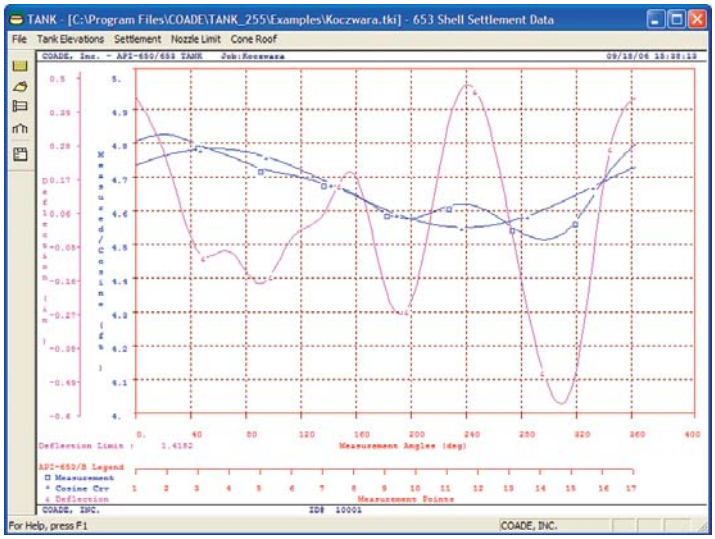
**Tabular and Graphic Output**
- Feature-rich Analysis Reports

**Quick Context-sensitive Help**
- Instant Help When Needed

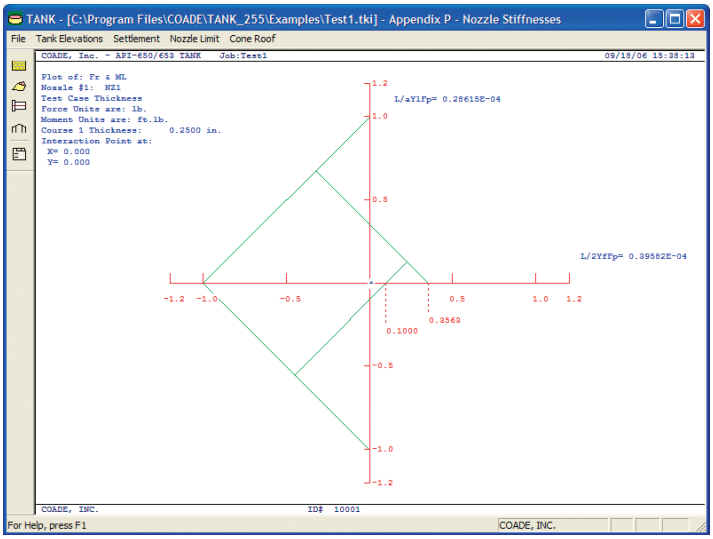
**Analysis Codes and Standards**
- Full Codes and Standards




**Context-Sensitive Help**
The help system includes API code references for easy verification and is organized hierarchically with a built-in search feature for rapid navigation.




**Shell Settlement**
Shell settlement diagrams plot the measured settlement around the tank against the planar cosine curve.




**Nozzle Interaction**
Nozzle interaction diagrams show the relationship between nozzle loads and their limits.

# Full Analysis and Design Capabilities

**Built for Real-world Applications**
TANK is developed and maintained by engineers who deal daily with API standards and methods. This ensures TANK includes all the tools needed to quickly and accurately analyze, design and evaluate oil storage tanks.

**Designed for Fast Input**
TANK's menu-driven interface allows for the quick definition of input and functions for the accurate analysis of oil storage tanks to API standards.

**Complete Unit Flexibility**
Increased flexibility is provided by allowing users to select any unit combination they wish to perform their analyses or produce reports. In addition, unit files are completely user-definable so engineers are not bound by program default settings. Even existing jobs can be converted into any existing unit format.

**Material Databases**
TANK saves you time and money by letting you select and load material information automatically from its extensive built-in material databases. TANK also includes a database editor to allow full customization of the material databases.

**Steel, Seismic and Nozzle Info**
Other databases are also an integral part of TANK, which makes it easy to select standard data for accurate analysis. Whether users want to select the correct structural member for a roof, the appropriate seismic curve for earthquake regions, nozzle loading data or flexibilities from current or past API standards, these can all be quickly selected from user-modifiable tables.

**Full Customization Flexibility**
TANK lets you control everything from calculations to databases, so you can customize your own TANK environment. Do you want to use the built-in API material database from a prior year? Do you want to consider corrosion in the Appendix P nozzle flexibility calculations, wind girder calculations or internal pressure calculations? These and numerous other customization options let you achieve results your way.

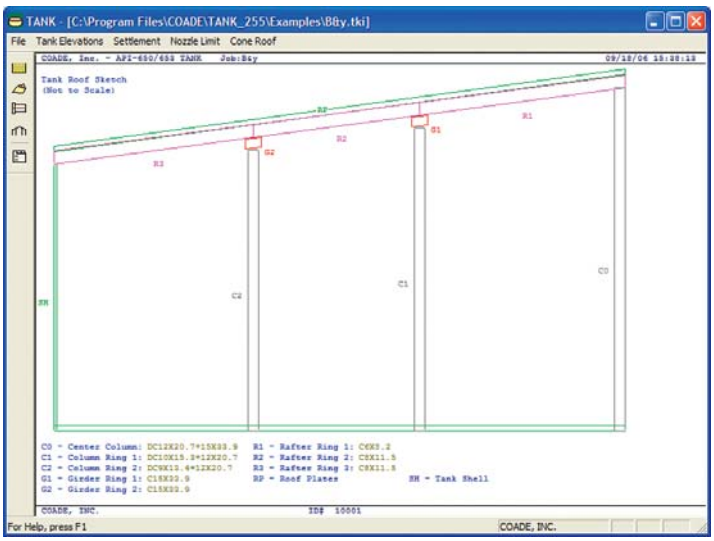
**Convenient Error Checking**
Once input is specified, the software performs error checking, highlighting any unusual or incompatible data. This helps ensure units and other specifications make sense in the real world. Once the input passes error checking, you can then perform the analysis.

**Tabular and Graphic Output**
After completing an analysis, you can view the results in a tabular report or as a graphic diagram with associated data. For convenience in verifying the results, the output reports reference code sections where applicable.

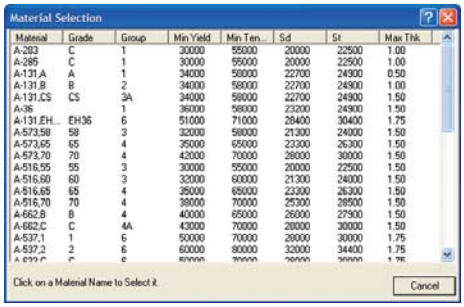
**Quick Context-sensitive Help**
TANK's context-sensitive help provides instant technical assistance at the point of input. Pertinent information is presented about each selected item, including code references and technical advice. Built-in search features provide for rapid navigation, and the way in which information is stored makes browsing for an item as easy as flicking through a book.

**Analysis Codes and Standards**
TANK incorporates full analysis and design capabilities for all structural and material requirements to API 650 10th Edition, Addendum 3 and API 653 3rd Edition, Addendum 1 standards.

- Thickness design and analysis using the variable point method, one foot method and API 650 Appendix A method
- Design and analysis of supported cone roofs
- Material adjustments according to API 650 Appendix M and API 653
- Seismic requirements of API 650, Appendix E, including anchorage design
- Service/maintenance considerations based on API 653, L, t1 and t2
- Bottom plate minimum thickness evaluation
- Stainless steel material usage per API 650, Appendix S
- Nozzle flexibilities with allowable loads and interaction designs, with built-in curves, according to Appendix P
- Shell settlement evaluation according to API 653 Appendix B
- Wind overturning stability, including anchorage design according to API 650, Section 3.12
- Internal pressure according to Appendix F
- Wind girder requirements
- Allowed fluid heights, remaining corrosion and hydrotest height
- Air venting requirements for emptying, filling and emergency conditions as per API-2000 Section 4.3




**Cone Roof Design Output**
Supported cone roof design output shows results for column, girder and rafter rings and roof plates.




**Material Databases**
Easily add or modify any material definition within the program.

## System Requirements:

- Microsoft Windows (2000, XP Pro or later) Operating System
- Microsoft Internet Explorer (6.0 or later)

## TANK Licenses:

**All TANK software licenses provide the following as standard:**

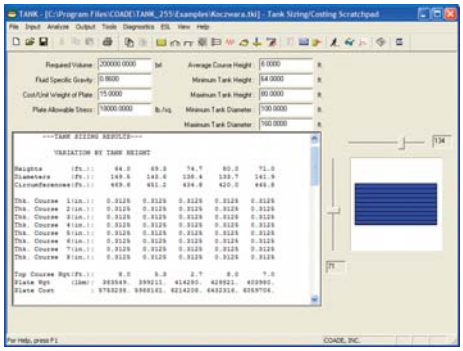
- Complete program
- One program manual
- Technical newsletter subscription
- Phone, fax, bulletin board, web site and e-mail access for technical support

**Full License provides:**

- Perpetual single license with no limit on the amount or duration of use
- One full year of automatic upgrades from date of purchase
- Eligibility for annual extensions of automatic upgrades
- Eligibility for discounts on additional TANK Full License purchases

**Monthly Lease provides:**

- Full License copy on a monthly rental basis
- Option to apply first month lease when converting to a Full License purchase.



**Cost Evaluation**
Use “Sizing Scratch-Pad” to calculate the most efficient tank configuration.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