



# What's New

## TANK 2016

(Version 8.00.00)

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This document details the new features included in TANK 2016 (Version 8.00.00).

## New Features in TANK 2016

The latest TANK release delivers a number of significant new and extended capabilities in response to current market requirements, as well as direct feedback from the growing TANK user community. The following changes have been made to TANK.

### Code Updates

- Updated the software to support API 620, 12<sup>th</sup> Edition, Addendum 1 (November 2014).
- Updated the software to support API 650, 12<sup>th</sup> Edition, Addendum 2 (January 2016).
- Updated the software to support API 653, 5<sup>th</sup> Edition (November 2014).
- Updated the software to support API 2000, 7<sup>th</sup> Edition (March 2014).

### Configuration

- Enhanced TANK to compress and archive files. The software compresses input, output, and intermediate files into a zip file when you close a file, create a new file when another file is opened, or when you save an open file with a new name. Previously, the software saved all files generated by TANK separately, TANK now saves and compresses files under the new .tk file extension. When you open the .tk file in TANK, the software decompresses it and extracts each file type to the current folder. This new functionality is enabled by default, but it can be disabled by selecting **Do Not Compress the Input Files** on the **Configuration** dialog.
- Updated TANK by allowing the default structural database selection to display in **Structural Database**. Previously, when you selected a default structural database on the **Configuration** dialog, the software required you to reselect that database option on the **Supported Cone Roof Data** tab. The software has been updated, and the default database option selected on the **Configuration** dialog automatically displays in **Structural Database** on the **Supported Cone Roof Data** tab.

### Productivity

- Enhanced TANK to allow you to lock or unlock files. You can now lock a file by selecting **Lock the Current Input File** on the **Tools** tab. When the file is opened, a message displays indicating the file is read-only and cannot be saved or analyzed. If the file needs to be modified, you can unlock it by selecting **Unlock the Current Input File** on the **Tools** tab. This enhancement reduces the chances of users making accidental changes to files.
- Updated TANK by creating new options for users to select a material or edit material properties. New **Database** and **Edit/View Properties** options were added to the material selection fields throughout the software. When you select **Database**, the updated **Material Selection** dialog box displays. When you select **Edit/View Properties**, the **Material Properties** dialog displays.
- Updated TANK by adding the ability to display insulation on the 3D and 2D models. New **Insulation** options were added to the right-click menu that allow you to choose how insulation displays on the 2D and 3D models.

- Updated TANK by adding a .vue file exporter utility. Users can now select **Export to VUE Format** on the **Tools** tab to open the VUE File Exporter utility. This utility allows users to convert their TANK .tk files into .vue files. Users can then open and review the TANK model in SmartPlant Review.
- Updated TANK by removing the functionality to append reports. The **Append Reports** icon has been removed from the software and all references to it removed from the documentation.
- Enhanced TANK by integrating the Tkerck.exe program into the TANK program. As a result of this enhancement, the time needed to analyze a file has been greatly reduced.

## Analysis

- Updated TANK to allow you to edit the value for **Maximum Allowable Tensile Stress**. Previously, **Maximum Allowable Tensile Stress** did not display on the input, the value was only defined in the material database. The interface has been enhanced and you can now edit the **Maximum Allowable Tensile Stress** value on the **Material Properties** dialog or the **General Tank Data** tab. This enhancement grants you more control over the value that is calculated for **Maximum Allowable Compressive Stress** for API 620.
- Updated TANK to only require a single entry for **Minimum Yield Strength of Bottom Plate**. Previously, the software required you to enter the value for **Minimum Yield Strength of Bottom Plate** on the **Seismic Data**, **Grillage Review**, and **Appendix M - Cycle Life** tabs. Now, only the **General Tank Data** tab contains **Minimum Yield Strength of Bottom Plate**, and the software uses the value in that field for necessary calculations.
- Enhanced the **Nozzle Stiffness** dialog box tab to support API 620 radial nozzle input fields. When you select **620** in **API Design Code** on the **General Tank Data** dialog box, the **API 620 Specific Data** section on the **Nozzle Stiffness** dialog box populates with inputs to perform nozzle area replacement analysis.
- Enhanced the **Nozzle Stiffness** dialog box in TANK to allow pipe properties to be specified from standard pipe sizes. When you click the ellipses in **Nozzle Outer Diameter**, the **Seamless Pipe Selection** dialog box displays, where you can select values for **Pipe Schedule** and **Nominal Pipe Diameter** for pipes from various piping databases.
- Updated TANK to include a check box to allow users to include the insulation thickness and density in the roof weight analysis. When you select **Is the Roof Insulated?** on the **General Roof Specs** tab, the software uses the insulation data from the **Tank Data** tab to account for the weight of the insulated roof. Roof insulation calculations are only performed for TANKS analyzed per API 620.
- Updated TANK by adding the ability to plot and analyze nozzles on the roof of a tank. Two new options, **Is Nozzle on Roof** and **Distance from the Center** were added to allow users to plot and analyze nozzles on the roof of a tank. Users can plot nozzles on the 3D model for both API 650 and API 620 tanks, but nozzle analysis is only performed for tanks designed per API 620.

## Output Reports

- Updated TANK to allow a seismic importance factor greater than 1.5. Previously, the software encountered a fatal error upon analysis if the value in **Importance Factor** on the **Seismic Data** tab was greater than 1.5. The software now displays a warning on the **Error Checker .LOG File** report if the seismic importance factor is greater than 1.5, but allows the analysis to continue.

- Updated TANK to display a warning message on output reports when certain code rules are violated. According to API 650, a nozzle that is subjected to external loads must be located within a specified region of a tank. The software now displays a warning message on the **Nozzle Flexibility & Load Results** report when API 650 code rules are violated for nozzle placement.