

API-INSPECTORSTOOLBOX^{3.0}

ENTERPRISE EDITION

API-510 Simple Pressure Vessel Inspection Report Builder

File Name: [Blank] File Title: [Blank] File Date: [Blank]

Pressure Vessel: P01001223

Report No: [Blank] Type Report: [Blank] Inspect Date: 07/01/2007 Vessel Date: [Blank] Head Type: [Blank] Age In Service: 27

Client: ACME Chem Code: ASME SS 01 Design Temp: 75 Material: Carbon Steel Head 1: Vessel Shell Head 2: [Blank]

Inspector: [Signature] Name: [Blank] Title: [Blank]

Report Builder Base Page

Report is Updated

Typical Design Configuration for Head Types Found in Pressure Vessel Construction

Ellipsoidal heads shall have a spherical crown or torus with a crown radius of 1.5 times the major axis of the ellipse. The crown radius shall be a minimum of 1.5 times the major axis of the ellipse. The crown radius shall be a maximum of 2.1 times the major axis of the ellipse. The crown radius shall be a minimum of 1.5 times the major axis of the ellipse and a maximum of 2.1 times the major axis of the ellipse.

Head ID	Head Type	Major Axis	Minor Axis	Internal Pressure	Design Temp	Material	Thickness	Factor
Head 1	Top Head	Ellipsoidal	0.75	CS - A516 70	75	17500	0.0	1.00
Head 2	Stress Head	Ellipsoidal	0.75	CS - A516 70	75	17500	0.0	1.00
Head 3	Stress H2C CA	Ellipsoidal	0.75	CS - A516 70	75	17500	6.0	1.00

MINIMUM THICKNESS CALCULATIONS BASED ON INTERNAL PRESSURES

Report Formed Head Component Remaining Life Data Page

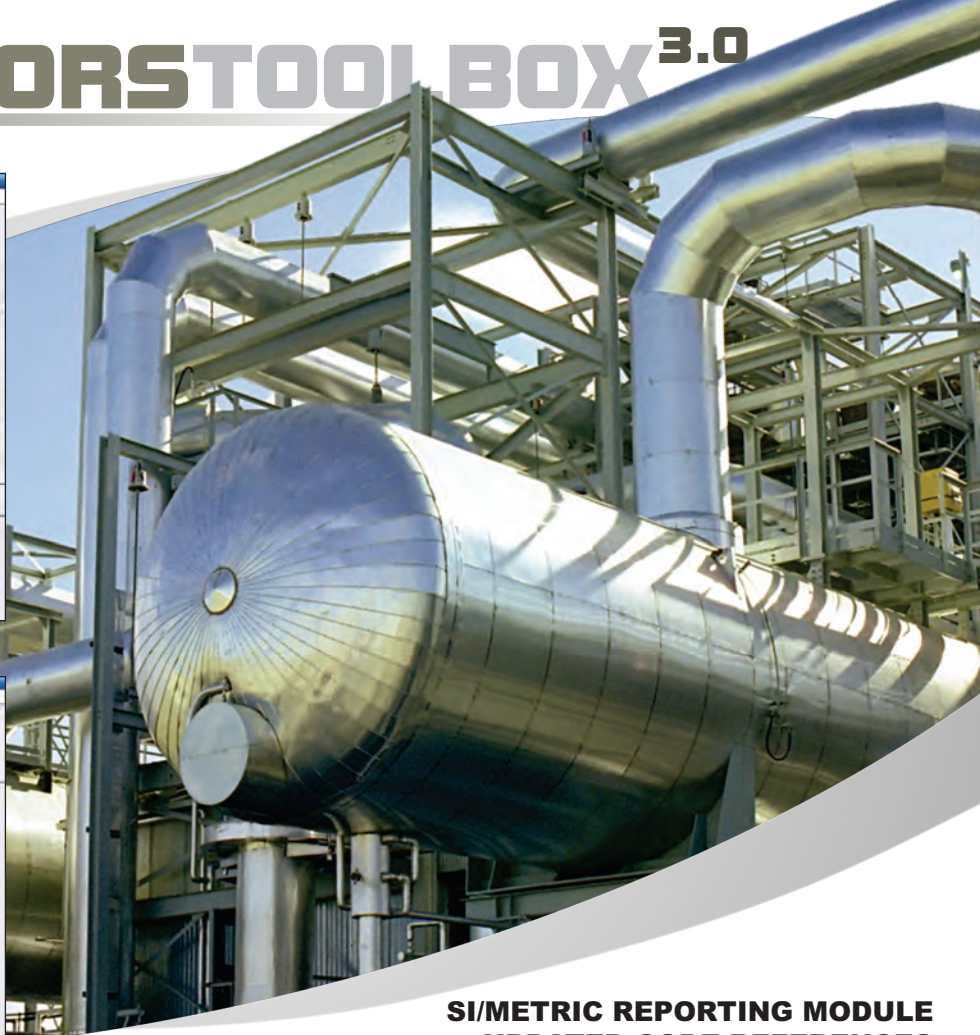
Now Data Analysis and Reporting is made simple and easy with the enhanced API Inspectors Toolbox – Enterprise Edition, an integrated suite of software tools. The API Inspectors Toolbox – Enterprise Edition (653/570/510) can be used by inspectors in the field or office to complete comprehensive (100% complete) and accurate reports in a fraction of the time without the “Toolbox”. The API Inspectors Toolbox provides a series of data gathering templates that can be used by field inspectors who can then hand off the data to others for analysis and reporting, thus allowing this function to be centralized and made more efficient.

With the API Inspectors Toolbox, data analysis and reporting can be:

- ➔ Made more accurate
- ➔ Made more comprehensive
- ➔ Presented in a more professional manner
- ➔ Completed in minutes rather than hours or days

The API Inspectors Toolbox allows you to store retrieve and transport the data and reports electronically as needed.

Need: Lack of specific software for asset integrity inspection reporting. At present the industry uses design software or asset data tracking software (PCMS, Twin Rivers, Ultrapipe, etc.) that are extremely expensive and unaffordable to the average third party inspection



**SI/METRIC REPORTING MODULE
UPDATED CODE REFERENCES
reflecting latest changes to API codes:
API 510 – API 570 – API 650 – API 653**

company. Alternatively the inspection company, independent inspector or asset owner uses excel spreads sheets and word documents that come with many inherent drawbacks (over written cells, multiple -modified copies, etc.) not to mention the time and effort to analyze let alone compile a comprehensive and accurate report.

Result: Due to the nature of the inspection business many of the certified inspectors are often heavily experienced in one or two areas of expertise and lack experience in other areas but yet are expected to have knowledge and ready answers for all of them. Hence the need for a program that has structured references, codes, calculations, reporting and evaluations modules that help the inspector facilitate and expedite an evaluation especially in an area that they may be a little rusty with. Report turnover time is decreased significantly having all the material specifications and calculations available at the click of a button with automated features such as material stress and coefficient values inputted with no extraneous efforts.

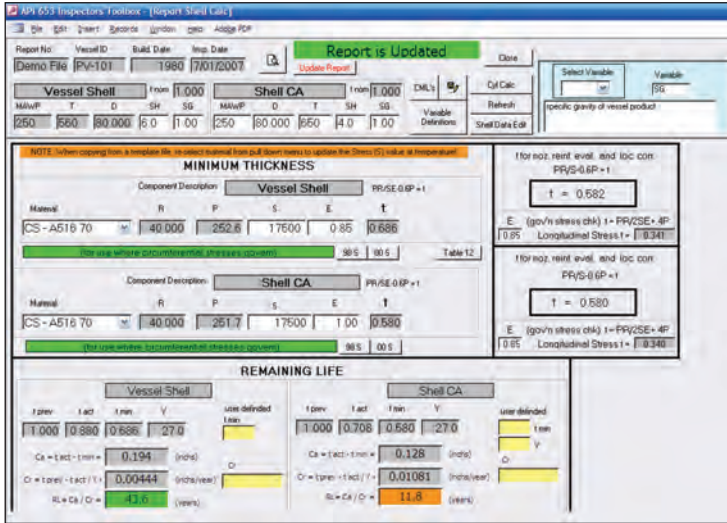
Benefits: The inspection and petrochemical industry as a whole benefits from a common resource that would tie the inspection industry and the various standards used within the industry together. The end product of a mechanical integrity assessment is a homogenous report with an

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**TECHNICAL
TOOLBOXES**

exceptionally professional presentation. Additionally, reliability engineers will find this a very useful tool indeed as it will have available to the engineer basic engineering data such as material specifications common to the O&G, Petrochemical and Power industries, flange rating parameters, pipe sizing, gasket data, conversion tables, bolting data and the like that engineers frequently need information on, not to mention that independent calculations for just about any component an engineer would need to evaluate is included and easily accessed. The resources inherent in this program is unmatched by any other engineering program available on the market today which aids in reducing the time and effort expended by the user compared to the non user doing the same tasks.

pages for the various areas of inspection and technical information. The program works to "drill down" to the information, references, or work pages that you are looking for. Appearing on the front page are buttons labeled - Design Codes, Engineering Data, API-570 Piping inspection, API-510 PV inspection, API-653 AST inspection, etc. Each page that you find your self working in would normally have selection buttons set about the head and foot of the page so that you can get to related codes and information from that page instantly that would normally take extraordinary efforts to get to (i.e. searching through PC files, the internet or digging through a hard copy library). Using this program you can get to this info very quickly through icons (buttons), tabular pages and scroll systems. It has proved to be an excellent tool giving the user an edge over other inspectors. It has also proven to be an excellent tool for the asset owner, providing a tool to ensure all safety and regulatory compliance issues are address and risks minimized. The program at present uses Microsoft Access to run, and does not work on 64-bit operating systems.



SPECIFIC API TOOLBOX DESCRIPTIONS:

API 510 Module –The API-510 inspection code applies to all refining and chemical process vessels that have been placed in service and covers the in-service inspection, repair, alteration, and rerating activities for pressure vessels. The API 510 Toolbox a cutting edge tool for meeting the API-510 technical requirements for design, welding, NDE, and materials as applied to the inspection, rerating, repair, and alteration of in-service pressure vessels. It is intended for use by organizations that maintain or have access to an authorized inspection agency, a repair organization, and technically qualified pressure vessel engineers, inspectors, and examiners. The disciplines include Design Criteria, Inspection Guidelines, and Repair Specifications for pressure vessels and allows for independent calculations for virtually any type component and design condition including ASME Sect VIII, Div 1 App 2 Flanges, Heat Exchanger floating covers, Tower wind and structural loads, Horizontal tanks (i.a.w. the Zick formula), and more.

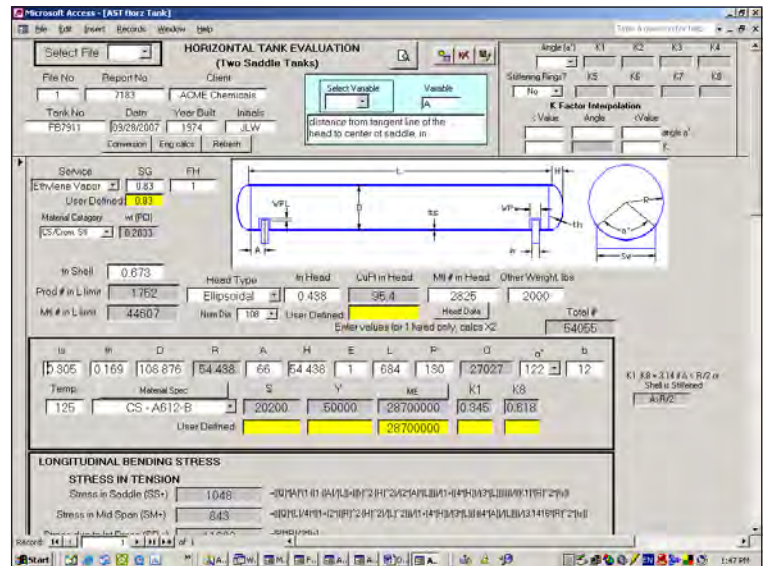
Report Cylindrical Shells Component Remaining Life Data Page

GENERAL PROGRAM DISCRIPTION APPLICABLE TO ALL API TOOLBOXES:

The API Inspectors Toolbox – Enterprise Edition combines the API 510, 570 and 653 Modules into one seamless application.

The API Inspectors Toolbox icons are linked to the most commonly associated Codes (API-650, API-653, ASME V, ANSI API-570, etc.) to provide quick access to those codes when needed. No laboring or searching, a "Codes" icon will navigate you to the appropriate API, ASME, ANSI and other associated codes as well. Please note that the API Inspectors Toolbox does NOT provide copies of the codes. The codes must be acquired separately but will be automatically recognized by the API Inspectors Toolbox and integrated within your data analysis and reporting.

API Inspectors Toolbox helps you to find information quickly via a series of icons and tabulated text widows. The subject tabs of the text windows and icons help to guide the user to the desired information page through a topical approach. The tabulated text windows are designed to facilitate quick access to information that an inspector or Reliability Engineer may need in response to questions or inspection findings requiring timely judgment calls. Once installed, the API Inspectors Toolbox opens, presenting you with buttons that, when selected, open



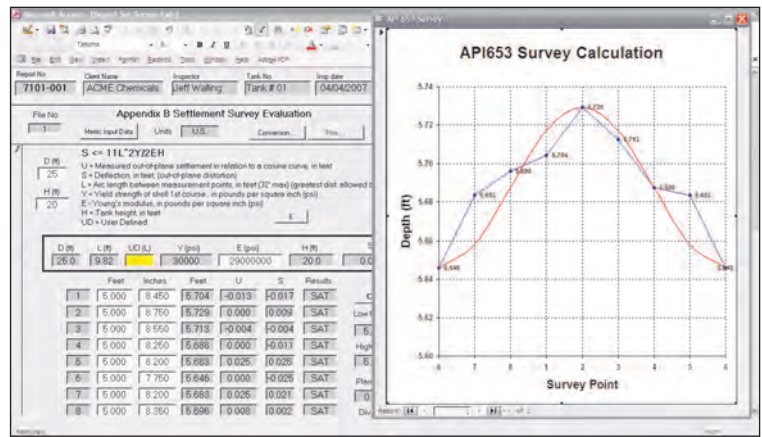
Horizontal Tank Calculations

API 570 Module - covers the inspection, rating, repair, and alteration procedures for metallic and FRP piping systems and their associated pressure relieving devices that have been in-service. The intent of this code is to specify the maintenance, in-service inspection and condition-monitoring program that is needed to determine the integrity of piping between tanks and other assets. The API 570 Toolbox provides accurate and timely assessments to determine if any changes in the condition of piping could possibly compromise continued safe operation. API 570 was developed for the petroleum refining and chemical process industries but may be used, where practical, for any piping system. It is intended for use by organizations that maintain or have access to an authorized inspection agency, a repair organization, and technically qualified piping engineers, inspectors, and examiners.

API 653 Module – provides structured subject matter analysis separated into a step-by-step process (Shell, Fixed Roof, Floor, Shell Nozzles, etc.). These component text windows have subsets of pages addressing the degree of degradation and other discrepancies. The disciplines include Design Criteria, Inspection Guidelines, and Repair Specifications for each of the components, etc.

Program Features & Benefits:

- Saves time and effort to retrieve information via topical tabulated presentation- Drill down to information quickly (i.e. Material specs, PWHT guide, Design Codes, et.) and automated data retrieval based on specification input in the reporting and calculation pages.
- Issues Procedures – (i.e. Hold points for a Tank TA's, PT Procedure, etc.)
- Basic Code and Regulation links.
- Independent Component Calculations (MAWP, tmin, remaining life, conversions, etc.)
- Recording job data for future references or reporting (Coating specifications and applications, Hydro calcs, etc.)
- Work pages for evaluating contractor welding procedures (WPS, PQR, WPQ)
- Report Building Modules for API-510, 570 and 653 compliant Inspection Reports that include sections for:
 - › Executive Summary
 - › Inspection finding and recommendations
 - › Component calculations
 - tmin
 - Corrosion rates and remaining life
 - MAWP
 - › Thickness data records
- Checklist
- Photos
- Certifications
- Design data sheets
 - › Inspection forms
 - › Repair Specifications
 - › Definitions
- Field Inspectors can write the reports in the field and then export the report to a report writer in an office for QA/QC and issuance.
- Great study tool for candidates preparing to take the Inspectors Exams for API-653, 510 and 570.



Automated Shell Settlement

Price, Terms & Conditions*:

API 653/570 Inspector Toolbox \$ 695/user/year
 API Inspectors Toolbox – Enterprise Edition \$1,295/user/year
 (includes 510/570/653 Modules)
 *Annual lease/license agreement required.
 (Current version works **only** on 32-bit Windows operating systems)

Please complete the attached form and fax to TTI at 713-630-0560

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