

# INTERGRAPH® CADWORX® & ANALYSIS SOLUTIONS



# THE INDUSTRY CHOICE

Intergraph® CADWorx® & Analysis Solutions offerings work together to give you the power to tackle the most challenging and complex projects with greater ease and superior results never before achievable. Chosen by more than 80 percent of leading plant engineering companies and owner operators from around the world, CADWorx & Analysis Solutions are:

- Easy to use
- Flexible
- Scalable
- Trusted to deliver accurate, reliable results

## CADWorx®

### Complete and Easy-to-use Plant Design Suite

CADWorx Plant Design Suite is an integrated, complete AutoCAD®-based software series for plant design that provides intelligent drawing and database connectivity, advanced levels of automation, and easy-to-use drafting tools. The comprehensive suite of design tools includes piping, structural steel, equipment, process and instrument diagrams, and design review, plus automatic isometrics and bills of material.

CADWorx is quick and easy to set up and use, so you can start designing right away. The bi-directional links between CADWorx and CAESAR II® for pipe stress analysis, and PV Elite® for pressure vessel analysis, enable designers and engineers to easily share information while keeping the drawings, models, and related information synchronized as changes are made. Plus, the fast processing and highly refined user-interface features in CADWorx make it possible for multiple users to work together efficiently, even on the largest models.

CADWorx has revolutionized the plant design industry with its ease of use, flexibility, inter-connectivity, and scalability.

## CAESAR II®

### World Standard for Pipe Flexibility and Stress Analysis

Since its introduction in 1984, CAESAR II has become the world's most widely used pipe flexibility and stress analysis software. It is a complete solution for quick and accurate analysis of piping systems subjected to a wide variety of loads, taking into account weight, pressure, thermal, seismic, and other static and dynamic conditions, based on user-defined variables and accepted industry guidelines.

CAESAR II can analyze piping systems of virtually any size or complexity, whether you are designing a new system or troubleshooting an existing one. Plus, CAESAR II features the only bi-directional link between analysis and CAD design. This means engineers and designers can easily share information while keeping their drawing and related information synchronized.

With CAESAR II, you can do more in less time and deliver more accurate results.

“The technical reference of CAESAR II and its wide usage, combined with quick and comprehensive technical support, saved us time and enhanced our overall productivity.”

*Farrukh Shaikh  
Amiantit Fiberglass Industries Ltd.*



## PV Elite®

### Vessel and Exchanger Analysis Made Simple

PV Elite provides engineers, designers, estimators, fabricators, and inspectors with solutions that match their pressure vessel and heat exchanger design needs. Because the software is user-friendly, it is perfect for both regular and occasional users requiring fast startup and confidence in their safety code calculations.

PV Elite is a complete solution for the quick and intuitive design of new pressure vessels. It also evaluates and re-rates existing vessels, including fitness for service analysis. The software considers the whole vessel, addressing all of the wall thickness rules and stress analysis requirements for vertical towers, horizontal vessels, and heat exchangers. You can also evaluate individual vessel components.

PV Fabricator® offers advanced tools for accurate and speedy production of fabrication deliverables. When bi-directionally linked to PV Elite, it delivers enormous savings over traditional drafting methods.

PV Elite plus PV Fabricator provide clear, concise, and accurate results.

## TANK™

### Accurate, Reliable Storage Tank Design and Analysis

TANK is a comprehensive program for the design, analysis, and evaluation of welded steel oil storage tanks according to American Petroleum Institute (API) Standards 650 and 653. Owners, operators, and engineering firms can benefit from quick and accurate designs for new tank construction and evaluation of existing tanks.

TANK enables the design and analysis of wall and bottom plate thickness, supported cone roofs, service and maintenance considerations, and other factors affecting tank design and safety, such as internal pressure, shell settlement, seismic, and wind. TANK saves you time because you can select material information automatically from its extensive, built-in material databases. Other built-in databases include structural steel, seismic curves, and nozzle curves from current and past API specifications.

Developed by engineers who regularly use API standards and methods, TANK includes all of the tools needed to quickly and accurately analyze, design, and evaluate oil storage tanks.

“ PV Elite helped us eliminate inaccuracy in calculation. We benefited from its ease of use and reliability without the need to second-guess any results. PV Elite made the design process flow seamless. ”

*Jon Ward  
Ward TANK and Heat Exchanger Corp.*

## DRAMATIC TIME AND COST SAVINGS

With Intergraph CADWorx & Analysis Solutions' design and engineering offerings, designers and engineers can collaborate in real-time. Users located around the world can share information on projects with complete accuracy and synchronization of effort. This eliminates redundancies and reduces errors and delays throughout the process.

Enjoy faster and greater returns on investment because you can start designing right away. Projects are quick to set up and cost less to:

- Design
- Analyze
- Build
- Operate

## The Leading Edge

Intergraph keeps pace with changes in international standards and codes so you are always assured of up-to-date, internationally viable output. We closely monitor industry trends and new technologies to keep you on the leading edge of plant design and engineering.

## Industry Applications

- Mining
- Pipelines
  - Buried pipe
  - Intra-plant pipe
  - Transmission lines
- Power
  - Co-generation
  - Coal
  - Gas
  - Hydroelectric
  - Nuclear
- Process facilities
  - Chemical
  - Food & beverage
  - Petrochemical
  - Pharmaceuticals
  - Natural gas
  - Offshore
  - Refineries
  - Semiconductors
- Shipbuilding
- Storage tanks
- Structural/buildings
  - Architectural
  - Building services
  - Equipment
  - HVAC
  - Steelwork



## ABOUT INTERGRAPH

Intergraph is the leading global provider of engineering and geospatial software that enables customers to visualize complex data. Businesses and governments in more than 60 countries rely on Intergraph's industry-specific software to organize vast amounts of data to make processes and infrastructure better, safer, and smarter. The company's software and services empower customers to build and operate more efficient plants and ships, create intelligent maps, and protect critical infrastructure and millions of people around the world.

Intergraph operates through two divisions: Process, Power & Marine (PP&M) and Security, Government & Infrastructure (SG&I). Intergraph PP&M provides enterprise engineering software for the design, construction, operation, and data management of plants, ships, and offshore facilities. Intergraph SG&I pro-

vides geospatially powered solutions to the public safety and security, defense and intelligence, government, transportation, photogrammetry, and utilities and communications industries. Intergraph Government Solutions (IGS) is an independent subsidiary for SG&I's U.S. federal and classified business.

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