



CADISON® CAESAR II® -Interface

CADISON® CAESAR II® -Interface

Stress Calculation of Pipelines

In project planning, integral planning systems with components specialised in individual engineering disciplines play a central role. CAESAR II®, the CAE system for component analysis, design, static and dynamic structural analysis of complex pipeline systems is one of those „specialists“.

In plant construction, stringent statutory provisions continuously dictate higher efforts for preparation of documentation for so-called stress calculations. Since the project life spans get shorter and shorter while competition is getting higher, companies are forced to optimize the processes and to reduce the planning period. Therefore: In case the plant planning engineer is able to perform the „stress calculations“ in his system himself or to perform at least the complete efficient data transfer, he would have a considerable advantage in competition.

Integration of work stages and necessary data is the target of the combination of CADISON® and CAESAR II®.

Since 1984 CAESAR II® has been the software for structural analysis of pipelines and flexibility analysis in plant construction. Rapid and precise analyses of pipeline systems is essential since they might be subject to a great variety of loads and stresses where weight, pressure, heat, seismology and other static and dynamic conditions are to be considered. Many reputed national and international plant manufacturers and operators in power generation, chemical and petrochemical industry rely on the quality of CAESAR II®.

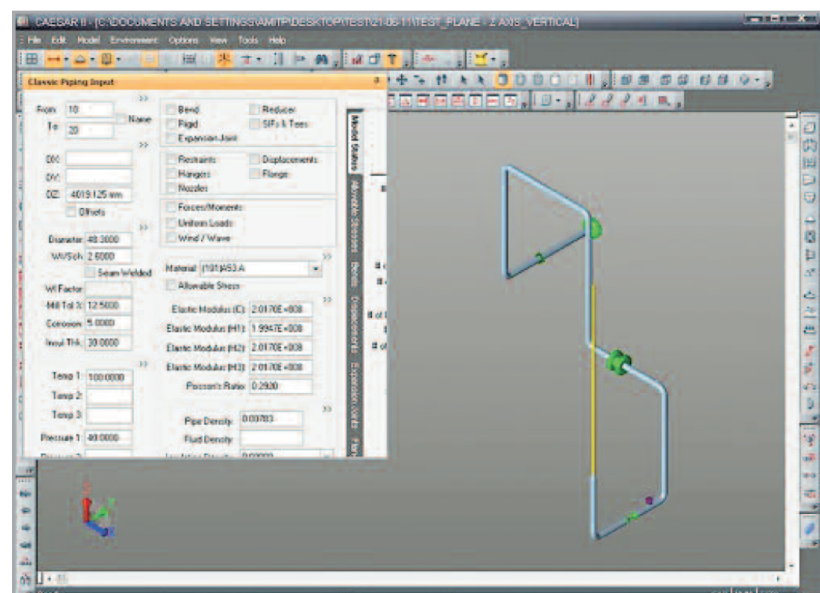
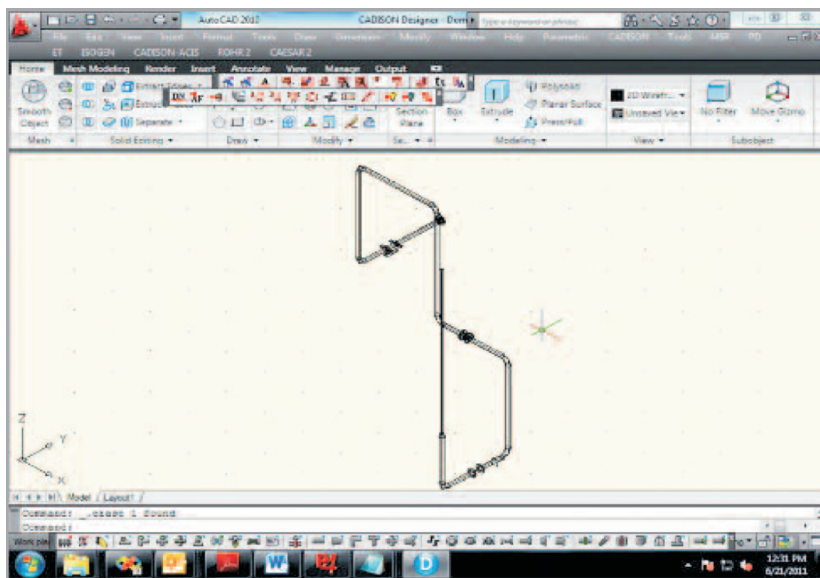
Stress analysis with CAESAR II®

The CAESAR II® programming system makes it possible to calculate almost all pipeline systems in compliance with many codes and standards like ANSI/ASME, EN, ISO, BS, PD etc. CAESAR II® compares the existing stresses with the admissible ones and documents the results in tables and graphics.

Automatic generation of calculation data

The CADISON® CAESAR II®-Interface assigns all pipelines designed with CADISON® 3D-Designer to CAESAR II®. One PCF file (neutral interface file) is generated automatically and contains all required information. The file generated in this way is read into CAESAR II® so that stress calculations can be performed.

Different plant types



Static and dynamic pipeline calculation is applicable to plants of any kind, such as plants for power stations, district heating systems, chemical plants, pump stations, refineries, water preparation plants, breweries, shipbuilding, offshore equipment, architecture and many other branches.

Apart from assessment of your system's response to thermal influences, deadweight and pressure stressing, CAESAR II® even analyses the effects of wind, subsidence of ground, seismic loads and wave loads. Non-linear effects like lifting-off of supports, closing of vacant spaces and friction are also included. CAESAR II® selects the correct springs for support systems with pronounced vertical subsidence.

Dynamic analysis abilities include modal analysis, harmonic analysis plus analysis of the resonance spectrum and stress rupture strength.

Results and check-up

Tools and assistants facilitate such jobs like preparation of a stress diagram or check-up of a plant model in the analysis field, and help to close the gaps existing between knowledge and experience. These tools facilitate the preparation of precise analyses and give recommendations for changes in planning.

The CAESAR II® program contains the integral error analysis. This error analysis verifies the user's inputs and checks them for consistency both under the aspects of "finite element" and "pipe installation".

Reports are clear, precise and concise and can be freely defined by the user.

Business Benefits

- Early and „on-line“ stress calculation
- Automated data transfer without any noteworthy reworking with CAESAR II®
- Very tight integration of interfaces – avoidance of erroneous inputs
- Reductions in analysis time – cost saving
- Very rapid analysis and calculation for assessment of pipe system

Key Features

- Direct and complete data transfer from pipeline systems and components for calculation
- Freely configurable transfer of attributes from CADISON®
- Definite presentation of markings for valves, components, pipelines, fittings and fasteners
- Automatic presentation of fixing points
- Depiction of exact weld seam positions

