HEXAGON

Product Sheet

CAESAR II®

The world's most respected tool for pipe stress analysis

Capabilities:

- Static analysis
- Dynamic analysis
- Intuitive analysis model creation
- Design tools and wizards
- Load and view plant model
- Comprehensive error checking
- Robust load case definitions
- User-definable reports
- Wind and wave analysis
- Seismic and support settlement analysis
- International piping code support
- Multiple code editions support
- ASME B31J SIFs and Flexibilities
- Spring Can with Friction builder
- Extensive material databases
- Steel databases and modeling
- Expansion joint databases
- Hanger design and databases
- Integration with Intergraph Smart® 3D and CADWorx design solutions
- Results export to Microsoft® Excel®, Word and MDB files

Reduced modeling time

Save time modeling, so you can focus on your stress analysis. Experience superior usability with List Input grids and functionality that lets you work straight from the 3D model. Right-click menus and a functional toolbar layout with customization available lets you work quickly. Integration with CAD design packages lets you quickly import models, reducing risk for errors and costly iteration time between CAD and Stress Analysis divisions.

Advanced graphics

Experience 3D model graphics with fast response times to model actions and intelligent refreshes. The graphics engine provides real-world representation for rigid components, supports and hangers, displacements, rotations, forces and moments on the piping model.

Robust load case definitions/manipulation

Your customized load case definitions can be imported or exported through an easy-to-use template. Select to bypass or exclude certain cases from your analysis to speed up analysis time and focus on the conditions of interest. Use the Group Edit view to make quick changes to multiple load cases at once. Use the List view for creating new load cases, filtering and sorting on columns. Automatic renumbering of load cases upon deletion of cases, with easy review of the impacts on combination cases.

Direct ASME B31J SIFs and Flexibilities

The direct implementation of code B31J-2017 in CAESAR II does not require the use of third-party products for the calculations and application of B31J SIFs and Flexibilities. Only B31J SIFs can be applied without B31J Flexibilities (i.e., setting k=1), by using the global switch provided in the configuration settings. The new complete B31J implementation provides a significant improvement in workflow. ASME B31J is applied when required by the piping code edition and is available to optionally apply to any metallic code. Using B31J provides opportunities to reduce design time, construction costs, analysis time and lifecycle maintenance costs.

Advanced analysis and reporting

In addition to the evaluation of a piping system's response to thermal, deadweight and pressure loads, CAESAR II analyzes the effects of wind, support settlement, seismic and wave loads. Nonlinear effects such as support lift-off, gap closure and friction are included. Select the proper springs for supporting systems with large vertical deflections. Select Spring Can with Friction builder for automatic modeling of spring can with friction. Multiple reports modified to account for the B31J SIFs & Flexibilities. Accounts for seismic second-degree flexibility and bends plasticization. Dynamic capabilities include modal, harmonic, response spectrum and time history analysis. Quickly send analysis and time history results to output reports or the file format of your choice (MDB, Excel, Word, etc.).

Powerful integration capabilities

CapabilitiesCAESAR II offers robust interfacing with CAD-based software, such as CADWorx Plant and Intergraph Smart® suites, using established industry formats (such as PCF and Isogen®). This lets you bring in data from other systems, carry it on to integrating solutions after analysis and track support details. Import structural models from software such as CADWorx Structure or GT STRUDL®, and account for structural stiffness in the analysis. CAESAR II combined with GT STRUDL lets you share load details post-analysis so stress analysis and civil/structural groups work together without duplicating information and efforts.

Comprehensive equipment analysis

Associate multiple load conditions and multiple types of equipment in the Equipment Manager, which has connectivity to load cases used in your piping analysis. Experience a user-friendly interface and comprehensive reports. Analyze your critical flanges and flange assemblies against the EN-1591 code standard using a similar easy-to-use manager, which automates much of the detailed flange input.

Nuclear industry compliance

CAESAR II complies with ASME NQA-1 quality assurance (QA). Subscribe to the CAESAR II QA and Reporting service to stay fully informed about issues and software changes. This notification service meets U.S. federal requirements 10 CFR Part 50 App. B. and 10 CFR Part 21.

Codes

The following are the implemented, more than 35 international piping codes and calculational variants with multiple editions and many environmental and equipment guidelines.

Process: ASME B31.J, ASME B31.3, w/ Ch. IX, BS 806, JPI, HPGSL, EN 13480-1, CODETI

Power: ASME B31.1, B31.9, ASME B31.5, Norwegian TBK-6, EN-13480-3:17/A4:21, STOOMWEZEN, Swedish 1, Swedish 2, FDBR

Offshore/Pipelines: ASME B31.4, w/ Ch. XI, and Ch IX, ASME B31.8, w/ Ch. VIII, CAN Z662, w/ Ch. 11, DNV, PD 8010, Part 1 and 2 , GPTC/Z380, IGE/TD/12, NAVY 505

Nuclear: ASME NC, ASME ND, RCC-M C and D

FRP: ISO 14692, UKOOA, BS-7159

Equipment/Components: EN-1591, API 560, 610, 661, 617, PD 5500, HEI, NEMA SM23, B31G, WRC 107/537/297, AISC, EJMA

Environmental: ASCE 7, NBC, IBC, UBC, EN 1991 GB 50009, CEC Sismo, Mexico NBR 6123, IS 875, BS 6399, As/Nzs 1170, KHK L1 and L2, B31.1 App II

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