



## PRODUCT SHEET

# Aspect Pipe Stress (formerly CAESAR II)

The world's most respected tool for pipe stress analysis

### Capabilities

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 Forte 3D (formerly Smart 3D) and Forte (formerly CADWorx) design solutions

Results export to Microsoft® Excel®, Word, PDF 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. Aspect Pipe Stress also supports multiple fluid densities using the fluid density multiplier field per load case.

### Direct ASME B31J SIFs and flexibilities

The direct implementation of code B31J-2023 in Aspect Pipe Stress 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, Aspect Pipe Stress 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, PDF, Excel, Word, etc.).

## Powerful integration capabilities

Aspect Pipe Stress offers robust interfacing with CAD-based software, such as Forte 3DWorx (formerly CADWorx) and other Forte solutions, 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 Forte StructureWorx (formerly CADWorx Structure) or Aspect Structure, and account for structural stiffness in the analysis. Aspect Pipe Stress combined with Aspect Structure 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

Aspect Pipe Stress complies with ASME NQA-1 quality assurance (QA). Subscribe to the Aspect Pipe Stress 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 50 international piping codes and calculational variants with multiple editions and many environmental and equipment guidelines.

**Process:** ASME B31J, ASME B31.3, w/ Ch. IX, ASME B31.12 IP, BS 806, JPI, HPGSL, EN 13480-1, CODETI

**Power:** ASME B31.1, B31.9, ASME B31.5, Norwegian TBK-6, EN-13480-3:17/A5:2022, STOOMWEZEN, Swedish 1, Swedish 2, FDBR

**Offshore/Pipelines:** ASME B31.4, w/ Ch. XI, and Ch IX, ASME B31.8, w/ Ch. VIII, ASME B31.12 PL, 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

## About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property, and assets— for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency, and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.

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