PRODUCT SHEET

Octave Aspect Pipe Stress

(formerly 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
- Subsea 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 Forte 3D and Forte 3DWorx
- Results export to 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 (formerly CAESAR II) 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 by using the global switch provided in the configuration settings. This implementation provides significant workflow improvements and can reduce design time, construction costs, analysis time and lifecycle maintenance costs.

Advanced analysis and reporting

In addition to evaluating responses to thermal, deadweight and pressure loads, Aspect Pipe Stress analyzes wind, support settlement, seismic and wave loads. Nonlinear effects such as support lift-off, gap closure and friction are included. Includes spring selection tools, spring can with friction builder, multiple updated reports and dynamic capabilities including modal, harmonic, response spectrum and time history analysis. Results can be exported to MDB, PDF, Excel, Word.

Powerful integration capabilities

Aspect Pressure Vessel offers robust interfacing with CAD-based software such as Forte 3DWorx (formerly CADWorx Plant Professional) and Forte 3D (formerly Intergraph Smart) solutions using formats such as PCF and Isogen. Import structural models from tools such as Forte StructureWorx (formerly CADWorx Structure) or Aspect Structure (formerly GT STRUDL) and account for stiffness. Load sharing enables collaboration between stress and structural teams.

Comprehensive equipment analysis

Associate multiple load conditions and equipment types in the Equipment Manager. Includes detailed flange assessment using EN-1591, with automated input and detailed reporting.

Nuclear industry compliance

Aspect Pipe Stress complies with ASME NQA-1 and supports QA notification services meeting U.S. federal requirements 10 CFR Part 50 App. B and 10 CFR Part 21.

Codes

Process: ASME B31J, ASME B31.3, ASME B31.12, BS 806, JPI, HPGSL, EN 13480-1, CODETI.

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

Offshore/Pipelines: ASME B31.4, ASME B31.8, DNV, PD 8010, GPTC, NAVY 505.

Nuclear: ASME NC, ASME ND, RCC-M C/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, NBR 6123, IS 875, BS 6399, As/Nzs 1170, KHK L1/L2, B31.1 App II.

Accelerate review and reporting

Aspect Pipe Stress 15.1 introduces the New Analysis Reviewer for inspecting, validating and documenting analysis results, including graphical model views, filtering, sorting and traceability tools.

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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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