



PRODUCT SHEET

Octave Aspect Structure

Structural modeling, analysis and design



Capabilities:

- Linear and nonlinear static and dynamic analysis
- Base plate modeling and analysis
- Multimaterial beam and Finite element analysis (FEA)
- Offshore structural analysis and design
- Calculation of transfer forces per American Institute of Steel Construction (AISC)
- Management of all model data and analysis results
- Ability to leverage company engineering standards
- Comprehensive and detailed user documentation
- Specification-driven design
- Reinforced concrete design
- Model your way: Modern GUI, CAD, wizards or text input
- 64-Bit application that utilizes multiple processing cores

Aspect Structure (formerly GT STRUDL) is one of the most trusted and adaptable general-purpose structural analysis solutions in the world, offering engineers accurate and complete engineering data for cost-effective and efficient structural engineering and design decision-making. The software has a proven track record in a variety of applications, such as nuclear and conventional power generation, onshore and offshore facilities, marine, civil engineering and infrastructure. For over 40 years, Aspect Structure has been trusted and used globally by thousands of engineers to quickly and efficiently deliver accurate results. Aspect Structure is a market leader in its field for high-quality results, proven reliability and depth of technical support.

Comprehensive solution

Aspect Structure is a flexible, database-driven solution for beam and general finite element analysis, designed to support comprehensive structural engineering. It's easy to use and built to integrate seamlessly with other systems. The solution includes 10 functional areas that operate seamlessly with one another. Combined with amazingly fast computational speed, Aspect Structure provides virtually unlimited power and flexibility for projects of any size or complexity.

Interoperability

Aspect Structure is natively interoperable with Forte 3D (formerly Intergraph Smart 3D), Aspect Pipe Stress (formerly CAESAR II) and Forte StructureWorx (formerly CADWorx Structure). This enables structural data-rich models created outside of Aspect Structure to fully leverage the power of Aspect Structure. It is also interoperable with third-party solutions through CIS/2 and GTI files. Reduce duplication of effort to save time and ensure data accuracy.

Quality assurance

Since 1983, the Aspect Structure QA/QC program has been in full compliance with applicable provisions of the U.S. NRC's 10CFR21 and 10CFR50 Appendix B regulations. In addition, Aspect Structure QA procedures conform to the ASME NQA 1- 2008, including the 2009 Addenda Subpart 2.7 (NQA-1a-2009) with additional material from NQA-1 2015. This means that every release of Aspect Structure earns the trust of structural engineers by providing accurate analysis results.

Wood and concrete structure modeling

- Physical member definitions, labels, inquiry and display
- Nonlinear spring elements, support and member end springs, tension, compression-only members, large sag catenary and parabolic cables
- Nonlinear fiber element plastic hinge and plastic zone member models
- Integer and alphanumeric naming of joints, members, finite elements and loading conditions automated view generation
- Create and review model with powerful data sheets

Advanced analysis methods

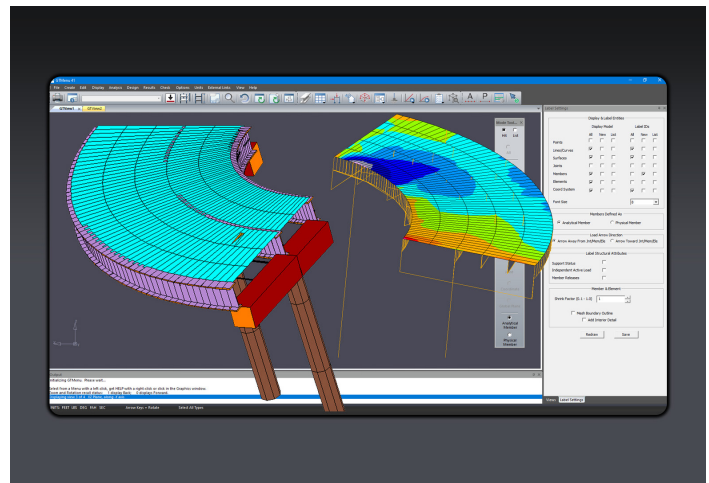
- Comprehensive FEA library including cables, plates, shells and solids
- Linear and nonlinear static and dynamic analysis
- High-performance equation solvers
- Maximum response harmonic analysis
- Steady-state time history dynamic analysis
- Nonlinear pushover analysis
- Gap element pseudo-static loads from dynamic analysis
- Static and dynamic analysis using gap elements
- Pseudo-static loads from dynamic analysis

Load specifications and generation

- Wind load generators per ASCE 7-05/7-10/7-16/7-22
- Seismic load generators per ASCE 7-05/7-10/7-16 and Indian standard (IS)
- Area load generator
- Gupta and Lindley-Yow mode combination methodologies
- Broad range of user-specified damping properties
- Composite modal damping ratio calculations
- Load combination generation

Design codes

- AISC: 16th, 15th, 14th, 13th, 9th, N690, 341 and older editions, methods and seismic provisions. New thoroughly QAEd AISC 16th Ed. Steel section database
- British: BS5950 and BS449
- AISI: AISI89 for unistrut sections
- ASCE: ASCE 52 Guide for Design of Steel Transmission Towers and ASCE/SEI 48-05 Steel Pole Structures
- ASME: Boiler and Pressure Vessel Code, Section III, Rules for Construction of Nuclear Facility Components, Div. 1-Subsection NF
- Eurocode: EC3 plus national annexes
- Canadian: CSA-S16.1-97, CSA-S16-14, CSA S16-16/19/23/24
- Indian: IS800
- Chinese: GB (GuoBiao Standards)
- Offshore: ISO 19902, APIWSD (RP 2A-WSD) and older editions, NS 3472E.
- ACI 318: 2005, 2008, 2011, 2014, 2019
- Report generation
- Interactively generate custom reports of model and load data, results and figures
- Move sections within the report from hierarchical tree display using the interactive interface
- Filter by joints, members, elements and loading
- Take advantage of customer footers, customer headers and summary of loads
- Save/restore options on filters, order and checklist
- Wind and seismic load generation inputs and output



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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