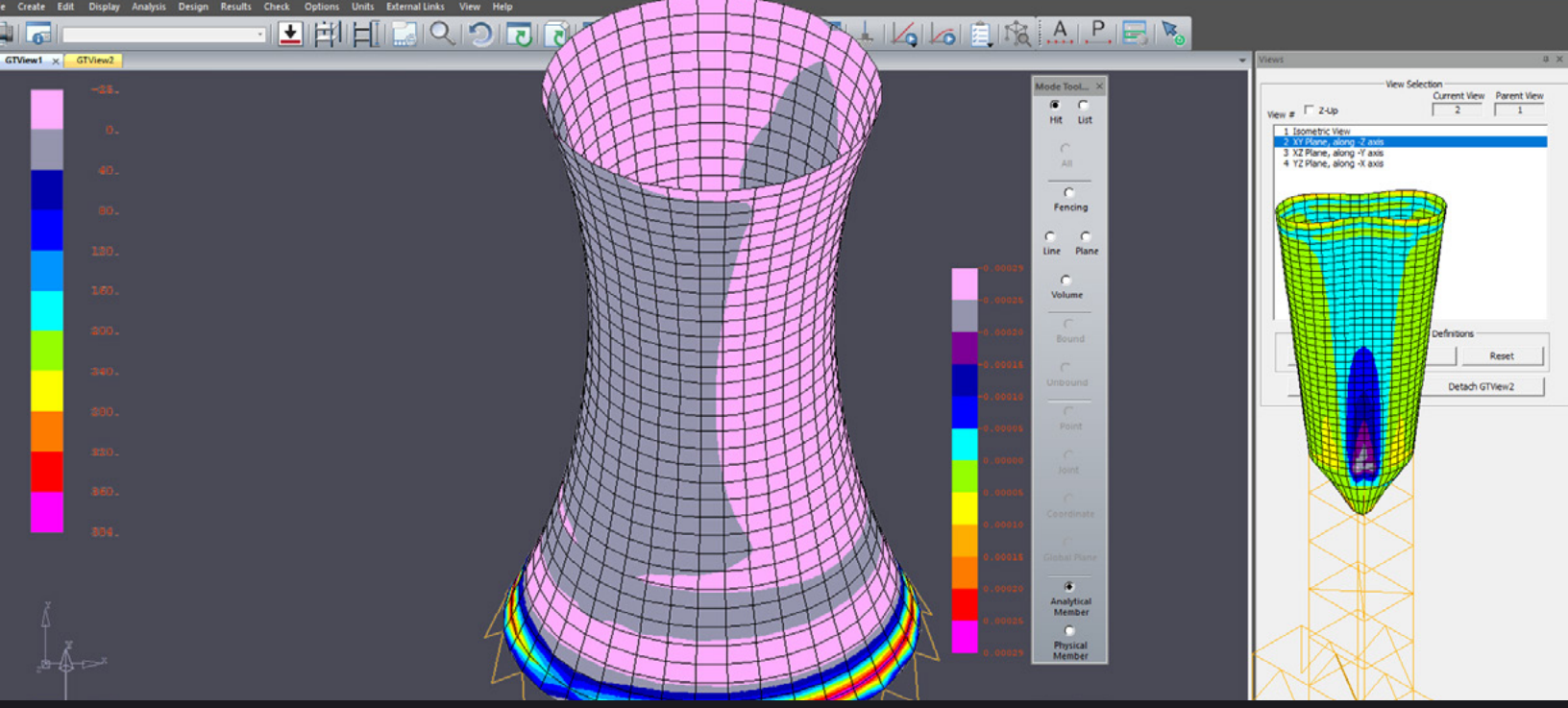
FREQUENTLY ASKED QUESTIONS

Aspect Structure

Contents



General information

What is Aspect Structure?

Aspect Structure (formerly GT STRUDL) is structural engineering software offering a complete design solution, including 3D CAD modeling and 64-bit high-performance computation solvers in all versions. Aspect Structure includes all the tools necessary to analyze a broad range of structural engineering and finite element analysis problems, including linear and nonlinear static and dynamic analysis, and can do so accurately in a fraction of the time of most other structural design software.

Who uses Aspect Structure?

Aspect Structure is used by structural engineers in all industries and mechanical engineers as well.

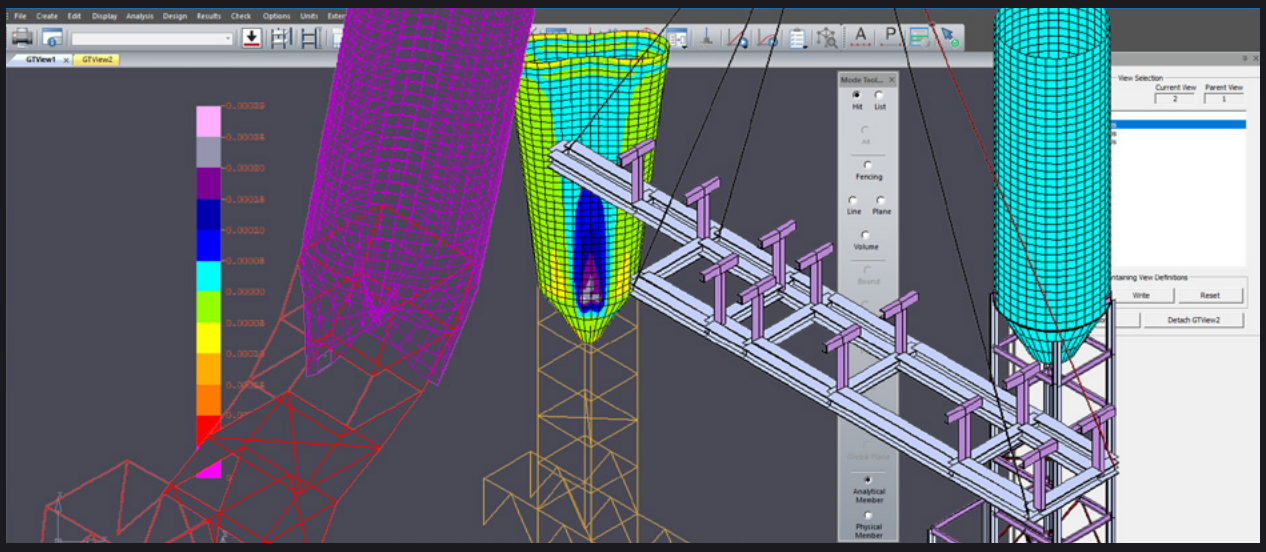
Why is Aspect Structure used?

Aspect Structure is one of the world's most widely used, fully integrated, and adaptable structural analysis solutions. The software has a proven record of accomplishment in various application areas, such as nuclear and conventional power generation, onshore and offshore facilities, marine, civil engineering, and infrastructure. Aspect Structure offers engineers the accurate and complete technical data they need for cost-effective and efficient structural engineering and design decision-making. Aspect Structure enables you to create and implement efficient and accurate strategies to solve complex structural engineering problems.

What are the major features of Aspect Structure?

Main capabilities include:

- Bi-directional interface to Forte 3D (formerly Intergraph Smart 3D)
- CIS/2 analysis data interface
- Conformance to nuclear industry QA/QC standards and regulations
- Linear and nonlinear static analysis
- Linear and nonlinear dynamic analysis
- High-performance static and dynamic analysis equation solvers
- Gap elements and pushover analysis with plastic hinge formation
- Steel frame design features
- Base plate modeling and analysis
- Reinforced concrete design features
- Offshore structure analysis and design
- User control of the iterative analysis/design process
- Database management of all model data and analysis results
- Corporate structural engineering problem-solving strategies can be effectively implemented
- More cost-effective, productive, and reliable structural engineering processes
- Comprehensive and detailed user documentation



Why is Aspect Structure “easy”?

The intuitive workflow of Aspect Structure assures you can extensively control the iterative analysis and design process. The power of Aspect Structure allows projects to be fast-tracked, saving hundreds of training, engineering, and design hours, not to mention administrative overhead costs.

Why is Aspect Structure “interoperable”?

Octave is unique among software providers because we are both design and engineering software developers. This has given us the opportunity to make the two product families interoperable at the tightest possible level, an area in which Octave has continued to lead the industry for the past 25 years. The intuitive bi-directional links between Aspect Structure and Forte 3D (formerly Smart 3D) allow designers and engineers to seamlessly collaborate during the project design stage.

The seamless integration enables users to maintain accurate and up-to-date drawings and models, which provides at least three benefits:

1. The "enter once, use many times" philosophy saves the time and expense of re-generating the model by each of the project's data consumers.
2. Models automatically generated from the Forte 3D plant model will have greater accuracy than would models recreated for each specific task.
3. Synchronization of the design and analytical models assures engineering concurrency.

Aspect Structure is also interoperable with Forte StructureWorx (formerly CADWorx Structure). Forte StructureWorx can generate a .gti file or .stp file, which Aspect Structure can read.

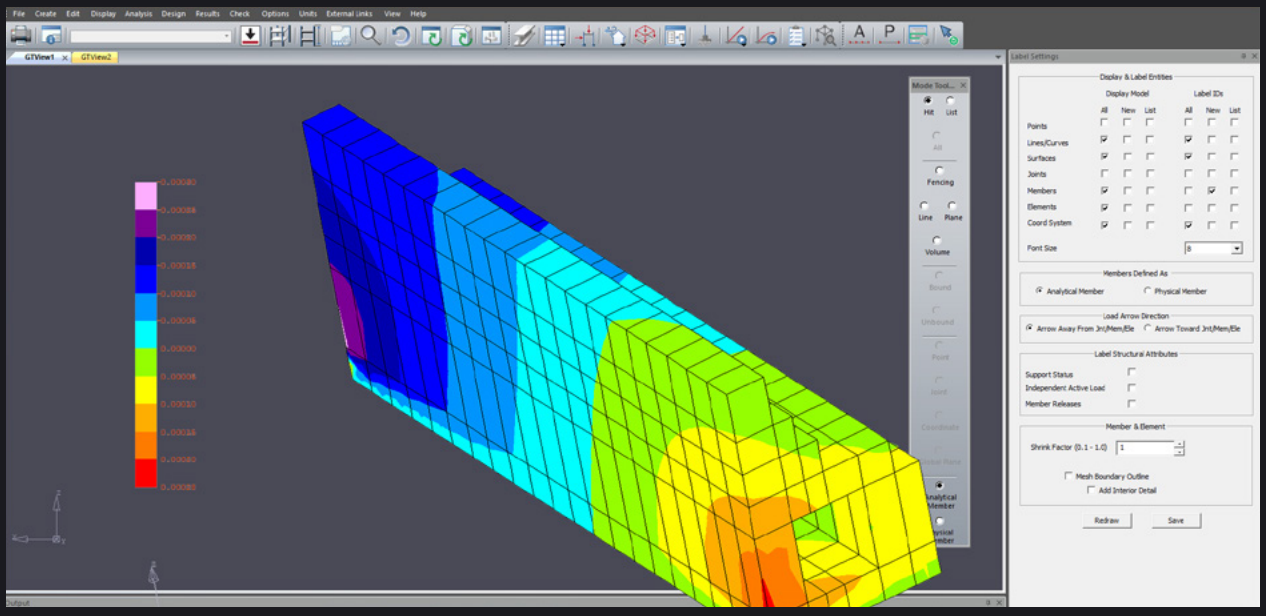
Aspect Structure can also read support restraint loads from Aspect Pipe Stress (formerly CAESAR II) pipe stress analysis software to design supporting steel structures as per applicable codes. Aspect Structure steel structures can be exported to Aspect Pipe Stress to run a combined structure and piping analysis for critical pipe runs.

Foundation design engineers can design rigid concrete foundations in Dimensional Solutions, MAT 3D software, using support reaction loads exported from Aspect Structure.

Why is Aspect Structure "scalable"?

Aspect Structure is a scalable solution because it combines ease of use and quick start-up with full functionality and extensive integration and data management and sharing capabilities.

This allows Aspect Structure's capabilities to be scaled according to project demands. Smaller, simpler projects can take advantage of Aspect Structure's rapid start-up, and small overhead needs to meet tight timelines and budgets. Larger, more complex projects can take advantage of Aspect Structure's automation, integration, quality, functionality, and power to reap downstream savings. Most importantly, Aspect Structure's additional capabilities can be implemented incrementally, as needed, to match the sophistication of your project or the skills of your staff – in contrast to the "all or nothing" approach that many competing applications impose.Foundation design engineers can design rigid concrete foundations in Dimensional Solutions, MAT 3D software, using support reaction loads exported from Aspect Structure.



Installation

What are the hardware and software requirements?

Recommended settings:

- Processor (CPU): Intel Core i5 or equivalent
- Operating System: Microsoft Windows 11
- Memory: 8 GB RAM
- Storage: 500 GB internal storage drive
- Monitor/Display: 13″ LCD monitor or larger
- Network Adapter: 802.11ac 2.4/5 GHz wireless adapter

AutoCAD 2023–25 or BricsCAD 2023–25, if you are planning to model in a CAD platform.

Does Aspect Structure require a specific version of the Windows operating system?

Refer to the link Compatibility Matrix

Select product Aspect Structure and select the version from the dropdown to view its requirements.

In what languages is Aspect Structure available?

Aspect Structure is available in English.

Does Aspect Structure work on Linux or Mac OS (Operating Systems)?

No. However, users have used Aspect Structure on virtual machines and Windows OS emulators.

Is it possible to install Aspect Structure silently?

Yes, refer to the installation guide provided in the Aspect Structure product installation media.

Can Aspect Structure be installed on several computers and used concurrently?

Aspect Structure can be installed on as many computers/workstations as required. Concurrent access and use of the software is controlled by Octave Licensing.

If only a single license of Aspect Structure is purchased, can this be used on more than one computer?

Yes, but only 1 license can be used at any one time.

Are Aspect Structure licenses named user?

No, Aspect Structure licenses can be used by any user, maximizing license use.

Can new and old versions of Aspect Structure be run in parallel on the same computer?

Yes, and many customers do this.

Is Aspect Structure backwards compatible?

Yes, for most parts - such as nodes, members, plate definitions. The STRUDL programming language that Aspect Structure uses has not changed much since it was introduced, but Octave's Aspect Structure development team has added new automated STRUDL command line generation and structural steel catalogs, which may not be readable by older versions. These unreadable lines can be easily commented out using a special comment character, so the information is not lost. Analysis models can also be opened in the version of Aspect Structure originally used to create them and later versions of the software too.

Can Aspect Structure be installed on a virtualized system?

Yes, providing the system offers the required resources and meets the minimum software and hardware requirements that Aspect Structure needs to work efficiently.

Note: Octave does not officially support the use of Aspect Structure on virtualized systems and emulators.

Licensing

How is Aspect Structure licensed?

All Octave products, Aspect Structure included, are licensed by Octave's cloud-based licensing solution – Octave Licensing.

Octave Licensing and a Configuration Connection Information (.CCI) file are installed on each workstation that needs to access licenses in the cloud. The Configuration Connection Information (.CCI) file provides a handshake between the software product, Octave Licensing Client, and the cloud licensing server, enabling licenses to be requested and returned by software users when they start or exit the software product(s) they are using.

The initial .CCI file issued to a new customer is usually named 'Site ID.CCI' e.g., 00123456.CCI. This file is generated for a site-based keystore i.e., a keystore containing all licenses of all products purchased. If product licenses need to be deployed differently, for example, some of the total number of licenses for various products held by the customer need to be allocated for use on a specific project, then a project-based configuration must be created in the Licensing Portal. Doing so results in additional keystores being created and 2 or more CCI files being used to access licenses in the cloud.

Consult online help for further information about Octave Licensing.

What license options exist for Aspect Structure?

Aspect Structure licenses are 'CX' type, meaning they can be used 24 hours per day / 7 days per week / 365 days per year. For further information about this, and other license types supplied by Octave, refer to the End User License Agreement (EULA) included with the software installation media.

How are Aspect Structure licenses administered?

Octave Licensing works in parallel with the Licensing Portal. This is an online self-service system that IT (Information Technology) personnel/license administrators can use to manage the configuration and deployment of their Octave product licenses. Customers are encouraged to use the Licensing Portal to self-manage their licenses. Online help covering license administration is provided inside the portal.

Is an Internet connection required to use Aspect Structure?

Octave Licensing is cloud-based. An Internet connection is always needed to access licenses in the cloud when using a computer in the office connected to the company's network. The exception is when licenses are to be used remotely, away from the office. Licenses temporarily checked out to a mobile computer will work without an Internet connection.

Can Aspect Structure be used outside the office on a mobile computer?

Yes. Offline Availability must be set on the licenses in the Licensing Portal. Offline Availability is what controls license check-out via the licensing client. This Octave Licensing feature is configured inside the Licensing Portal.

When the Octave Licensing Client is installed, if Offline Availability has been configured, it is possible to use the Check-out option to check out one or more product licenses so that they can be used on a mobile computer. The licenses (product tags) available to check out are displayed on the 'Check-out' tab.

Note: Offline Availability is not set by default on site-based configurations, and your IT administrator/license administrator must enable this before licenses can be checked out and used on mobile computers.

Check-in is used to return licenses to the cloud license server when the mobile computer is returned to the office and connected to the network, when it will have Internet access again.

Whilst checked out, licenses active on a roaming computer are unavailable for office-based users. They become available again when the licenses are checked in.

Can license usage be reported on?

Yes, license usage reporting is available inside the Licensing Portal. Reporting enables IT administrators/license administrators to understand how your organization is using licenses. Having this visibility of how licenses are used enables IT administrators/license administrators to determine who is using it, check peak license usage, understand how to optimize the use of licenses, identify if additional licenses are required, etc.

Purchasing

What purchase options are available?

Perpetual licenses with or without maintenance, or lease licenses (minimum 3-month term) including maintenance, can be purchased.

How is Aspect Structure sold?

Three options of Aspect Structure are available for purchase:

1. Aspect Structure General - includes the Aspect Structure Basic Program, Advanced Analysis, Dynamic Analysis, Steel Design, Reinforced Concrete Design, Data Base Exchange (DBX) and Multi-Processor Solver (GT64M).
2. Aspect Structure Offshore - includes the Aspect Structure Basic Program, Advanced Analysis, Dynamic Analysis, Steel Design, Reinforced Concrete Design, Data Base Exchange (DBX) Multi-Processor Solver (GT64M) and Offshore Analysis and Design Module.
3. Aspect Structure Advance - includes the Aspect Structure Basic Program, Advanced Analysis, Dynamic Analysis, Steel Design, Reinforced Concrete Design, Data Base Exchange (DBX) Multi-Processor Solver (GT64M) and Base Plate Module (BPW).

How is Aspect Structure purchased?

Aspect Structure may be bought through our reseller network and direct from Octave. To find your local Octave sales office or reseller, visit: octave.com/about/office-locations.

What are Octave Global Network Dealers?

Octave Global Network Dealers are the Octave Standard-bearer(s) around the world. They are the local face of Octave. They provide product sales and support in your local time zone and language. These dealers have certified instructors and consultation specialists to help clients define and meet their requirements at all levels. The worldwide network dealers work together to ensure that Octave's multinational clients have access to the right products, training, and consultation anywhere around the globe.

What is a Octave Authorized Reseller?

Authorized Resellers are the local Octave software experts who provide local sales and support to clients in their respective regions. To find your local reseller, visit octave.com/about/office-locations.

Is a free evaluation available for Aspect Structure?

Yes, to request one, please contact your local Octave sales office or sales account manager.

Can a local reseller or Octave provide a live presentation and demonstration?

Yes, Octave and its resellers have personnel who provide live product presentations that answer simple to complex technical questions and understand project workflow-specific questions. For more information, please contact your local distributor at octave.com/about/office-locations.

Training

What is the best way to learn how to use and get started with Aspect Structure?

Request an Aspect Structure product evaluation, then work through the free e-Learning content available on Octave Institute (formerly Hexagon University).

Is training available?

Customers receive access to free Aspect Structure training content via Octave Institute.

Please contact Octave to learn about other training options.

Maintenance

What does software maintenance provide?

Annual software maintenance covers the provision of technical support and software upgrades.

Does maintenance include training?

No, training is not part of maintenance.

How do users request technical support?

Maintenance customers receive technical support via Octave's support system – Octave Community (formerly Smart Community).

What documentation is provided with Aspect Structure?

User manuals and comprehensive reference documentation is provided as part of Aspect Structure.

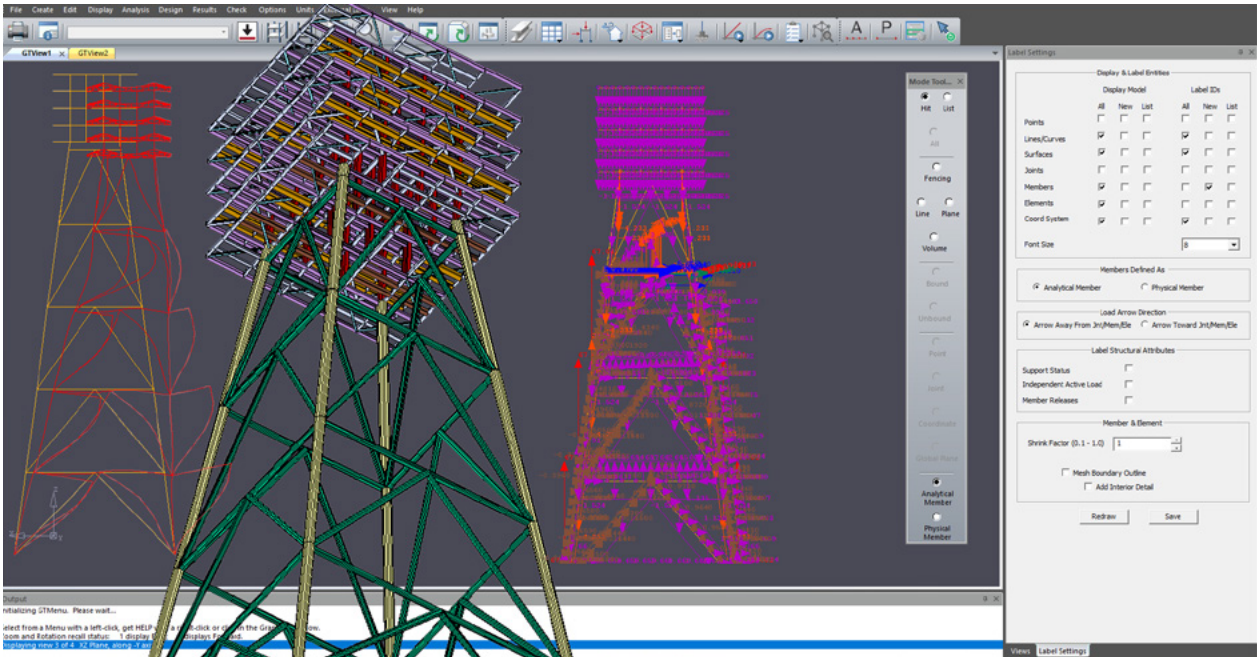
Can users request enhancements be made to Aspect Structure?

Yes, everyone may submit product enhancement requests. Octave interacts with and listens to customers, then responds by developing innovative solutions and enhancing current products to address customers' needs in ways that improve their work processes. This customer-centric focus helps us grow our product line to serve an ever-broader base of users and applications, which further increases opportunities for our clients to enjoy the benefits of interdisciplinary collaboration with other departments and organizations.

To submit a new feature/function/capability request – log in to Octave Community and submit via Aha! Ideas.

How are the enhancement requests prioritized?

Enhancement requests are evaluated and prioritized based on a given industry and market. Octave prioritizes requests based on the benefit delivered to the highest number of our users.



QA/Certification

Is the software certified, and how?

Aspect Structure is developed according to a QA (Quality Assurance) program that meets the requirements of 10CFR50 Appendix B, 10CFR21, and NQA-1. Each release is verified against a suite of over 6000 test cases.

Is a QA certificate provided with the software?

A Certificate of Conformance is provided with each version of Aspect Structure.

What is the Aspect Structure Quality Assurance Program?

When Aspect Structure is used in/on projects related to the Nuclear Industry, the Aspect Structure QA and Reporting Annual Service is applicable and recommended.

The Aspect Structure Quality Assurance Program is based on written procedures including, NQA-1-2008/2009a with additional material from NQA-1-2015, NRC (Nuclear Regulatory Commission) 10CFR21 and NRC 10CFR 50 Appendix B. The program includes the Verification Manual, associated test problems and solutions, three (3) day error notification, and customer audits.

For further information, please contact your local Octave sales office or sales account manager.

Key functionality

Design codes

What design codes are included in Aspect Structure?

Steel:

- AISC-16th Ed
- AISC - Seismic Provisions
- AISC N690-2018
- British-1990
- AISI-1989
- ASCE-52/10-1988
- ASCE/SEI 48-2005
- ASME-2007
- Canadian-2019/2023/2024
- Indian-2007
- Chinese-2017
- Offshore Structures-21st Ed.
- API LRFD
- EC3-2005 with the following regional annexes - Belgium, British, Bulgaria, Cyprus, Denmark, Finland, France, Germany, Greece, Italy, Malaysia, Netherlands, Norway, Poland, Singapore, Slovenia, and Sweden.

Concrete:

- ACI 318-2019
- BSI-1983

What Wind and Seismic Codes are included?

Wind Loads on open structures:

- ASCE 7-2022
- ASCE 7-2016
- ASCE 7-2010
- ASCE 7-2005

Wind Loads on Enclosed structures:

- ASCE 7-2022
- ASCE 7-2016

Can generate wind on sloped roofs also.

Seismic loads:

- ASCE 7-2016
- ASCE 7-2005

Automatic Load Combinations:

- ASCE 7-2022
- ASCE 7-2016
- ASCE 7-2010
- ASCE 7-2005

Modeling

Can Aspect Structure be used to analyze structures in nuclear facilities?

Yes, both traditional beam models, FEA (Finite Element Analysis) and combined models have been modeled in Aspect Structure for over four decades.

Does Aspect Structure provide both static and dynamic analysis capabilities?

Yes.

What loads can be applied to the structural analysis model?

Any basic static or dynamic load the engineer chooses to define can be applied to the model. Additionally, loads can be combined automatically to ASCE (American Society of Civil Engineers) combinations or any custom-defined combination. Form loads can also be created.

Does Aspect Structure include structural libraries/catalogs of international structural members?

Yes, Aspect Structure has shape catalogs— both historical and current for all included code editions containing member definitions. Additionally, the engineer can customize the included library or create their own shapes or catalog of shapes.

Can Aspect Structure analyze base plates?

Yes, the Aspect Structure Advance license contains a parametric base plate module for the easy and fast definition of all types of baseplates for non-elastic analysis.

Can Aspect Structure analyze offshore structures?

Yes, and Aspect Structure Offshore contains an offshore load generation module for creating offshore environmental loads, including wave, current and offloading loads.

Integration and interoperability

Is Aspect Structure interoperable with Forte 3DWorx (formerly CADWorx)?

Yes, there is full two-way interoperability and sharing of the physical model through the industry standard CIS/2 file or the Aspect Structure input deck .gti file.

Is Aspect Structure interoperable with Aspect Pipe Stress (formerly CAESAR II)?

Yes, Aspect Structure can create a native .str file to include the structure in Aspect Pipe Stress' analysis. Additionally, Aspect Structure can read the Aspect Pipe Stress output database to read in support loads and apply them to the structure.

Is Aspect Structure interoperable with Forte 3D (formerly Intergraph Smart 3D)?

Yes, there are several ways to share the structural model from Aspect Structure and Forte 3D, including the ability to update the model during the iterative design process.

Is it possible to export an analysis model in 3D DWG format?

Yes.

Which file types can be imported into the software?

CIS/2 .stp, .gti,. std, .dxf.

What other 3rd party vendor software integrates/interfaces with the software?

MAT 3D from Dimensional Solutions for the design and detailing of rigid foundation elements.

Can pipe support loads be exported to Aspect Structure for inclusion in structural analysis?

Yes, restraint loads can be exported from Aspect Pipe Stress to Aspect Structure. The pipe and structure models must have the same origin and axis system, and there are tools in Aspect Structure to align the piping model resulting to the structural location. Aspect Structure automatically identifies which structural node each piping restraint node is adjacent to and applies the forces/moments as point loads in the structural analysis.

Deliverables

What deliverables can be produced/extracted?

The report builder allows engineers to produce analysis and design reports, containing input and output in tabular format. Pictures/graphical screen prints with comments can be added to the report using the scope editor tool in Aspect Structure.

Are reports customizable?

Yes, the reports are customizable, including headers and footers using Microsoft Word templates. The Aspect Structure report builder lets the engineer choose what project data can be included in the report, and those results can be filtered to include a subset of the project components.

What formats can reports be exported to?

Microsoft Word format.

Software upgrades

How often is the latest version of Aspect Structure released?

A new major version is typically released every 12 months.

Who has access to the latest Aspect Structure upgrades?

All users with current maintenance contracts are entitled to use the latest software upgrades.

How are users informed that an Aspect Structure upgrade is available?

If 'Subscriptions' are configured inside Octave Community, maintenance customers are automatically notified whenever the latest version is released. The visible live news feed window when Aspect Structure is started also notifies users that a latest version exists.

How are Aspect Structure upgrades supplied?

Octave operates a "pull" system for the supply of software upgrades; that is, major/minor upgrades are not shipped automatically to maintenance customers when the software is released; customers need to request upgrades themselves when they need them e.g., a release contains a fix/enhancement that the customer has been waiting for.

- US (United States) customers can open a service case against *product=upgrade* in Octave Community
- International customers should contact their local order administrator or contact their local Octave sales office.

Online resources

How to keep informed?

Sign up for specific solution updates via the Subscription Management Centre to stay up to date on the latest offerings, news, events, etc.

Other useful information?

Visit the Resource Center, then filter resources using the 'Type' drop-down.

Aspect Structure 44 - Frequently Asked Questions

1. What does "AI-enabled" mean in the context of Aspect Structure 44?

Aspect Structure 44 introduces the AI Communicator, a new interface that allows engineers to paste AI-generated text—created by any generative AI system—directly into Aspect Structure to automatically create, visualize, analyze, and design structural models.

This means Aspect Structure can now understand model descriptions written in plain language and convert them into valid Aspect Structure commands.

2. Does Aspect Structure include its own built-in AI model?

No. Aspect Structure does not embed or rely on a built-in AI model. Instead, it is designed to work with your choice of AI—internal or external.

Users can choose:

- Company-approved AI tools
- Open-source AI models
- Commercial tools like ChatGPT, Gemini, Copilot, etc.

Aspect Structure stays neutral and flexible.

3. Does Aspect Structure have built-in AI?

No.

Aspect Structure does not contain any built-in AI model or embedded artificial intelligence.

Aspect Structure continues to perform all analysis and design using its trusted, proven engineering engine—the same deterministic algorithms and code-checking methods engineers rely on today.

4. What is the new ribbon interface in Aspect Structure 44?

The ribbon interface provides a modern, intuitive layout that allows engineers to quickly access commonly used tools without digging through traditional menus.

It reduces clicks, simplifies navigation, and improves overall usability—especially for new users.

5. What is the new gap element, and why is it important?

The gap element is a nonlinear feature that simulates contact between two surfaces or structures.

It is ideal for scenarios involving:

- Dynamic loading
- Impact conditions
- Separation/closure behavior
- Equipment or component interaction

This expands Aspect Structure's nonlinear analysis capabilities.

6. What does the export to IDEA StatiCa® 25 do?

Aspect Structure 44 can now export structural analysis models and load data directly to IDEA StatiCa 25, enabling:

- Faster connection design
- Reduced manual data entry
- Better alignment between analysis and fabrication design
- Lower risk of transcription errors

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.