



wood.

Benefits of using **Flexcom**:

Supreme confidence in the engineering design

Flexcom's renowned computational technique is widely acknowledged as best-in-class

One stop solution for all your modelling requirements

Flexcom's versatile nature makes it suitable for use in a variety of scenarios, ranging from FEED studies, detailed engineering design, fatigue life assessment, structural installation and decommissioning

Quality assurance

Mathematical equations are fully supported within the software, allowing users to develop and validate template models, streamlining the QA process. Flexcom's keyword style input also readily lends itself to QA inspection

Advanced visualisation

Powerful visual aids such as colour contouring of stresses provide the user with an intuitive visual representation of engineering data

Trust and reliability

Flexcom is bolstered by a premium technical support service, with over 90% of queries fully resolved within one working day

Cost effective solution

Flexcom's user interface does not require a licence, maximising the number of licences available for numerical simulation

Flexcom

Advanced marine engineering simulation software

Flexcom is an offshore marine simulator which has underpinned the engineering design on some of the world's most demanding offshore projects. Developed by Wood, the program is designed and maintained by engineers who are immersed in the offshore energy industry.

Flexcom's design philosophy is based on the provision of advanced computational techniques to provide confidence in the engineering design, coupled with a user-friendly interface which facilitates optimum productivity. The software uses an industry-proven finite element formulation, incorporating a hybrid beam-column element with fully coupled axial, bending and torque forces.

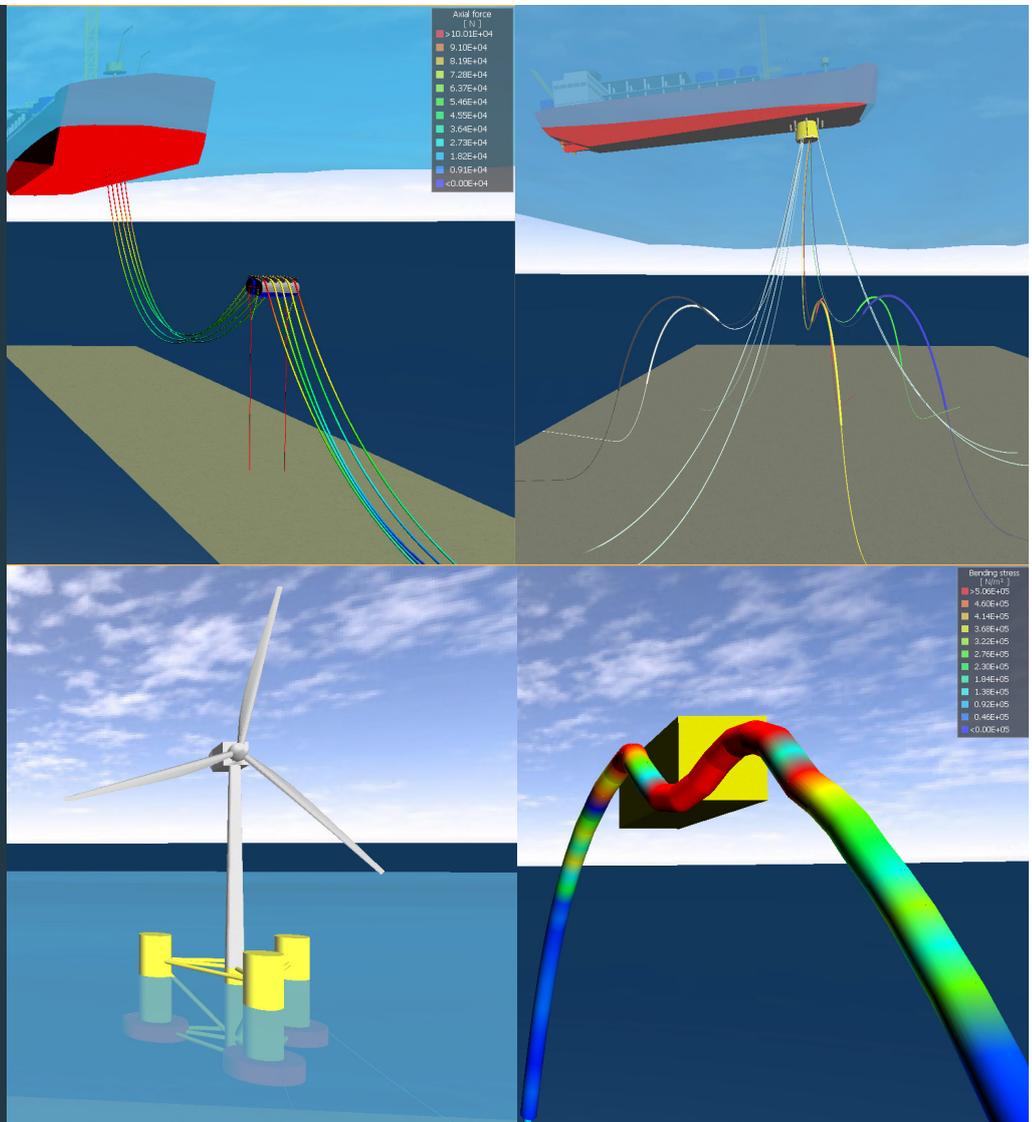
Flexcom is a highly versatile software package, capable of simulating risers, mooring lines, umbilicals, floating bodies, offloading lines, seafloor conduits, installation processes, and renewable energy devices such as wave energy converters and floating offshore wind turbines. With over 30 years of industry experience, **Flexcom** has gone from strength to strength, delivering advanced engineering solutions to all the major operators, contractors, construction companies, manufacturers, and engineering consultants.

Flexcom.

For more information contact
SoftwareSales@woodgroup.com

Advanced user experience

- Powerful and versatile user interface
- Quick and easy model building via Line component and automatic mesh-creation facility
- Fully integrated keyword editor which facilitates rapid data specification, via helpful input prompts and command auto-completion
- Parameters and mathematical equations are readily supported, effectively providing spreadsheet type functionality within the Flexcom environment
- Streamlined post-processing which enables assembly of results from a large load case matrix into a single spreadsheet
- Enhanced visualisation of engineering data provided by 3D surface plotting, such as presenting effective tension as a function of both wave period and wave heading
- Direct interface to Microsoft Excel, with optional access to VBA code which enables power users to develop specialised post-processing tools
- User defined plug-ins which allow power users to adjust the constitutive finite element matrices and directly control the numerical solution at run-time
- Dedicated video creation studio which allows users to create customised videos of finite element models and showcase innovative engineering designs



Simulation capabilities

- Static, quasi-static, time and frequency domain analysis
- Fatigue life assessment
- Modal analysis, interfacing with Shear7 (enabling the assessment of fatigue damage caused by vortex induced vibration)
- Code checking, including the latest DNV and API engineering design codes
- Recognised industry leader in finite element solution techniques
 - Up to 10 integration points per element to ensure precise distribution of applied forces
 - Second order shape functions used to predict solution variations within each element
- Several non-linear material models, including hysteretic bending effects
- Pipe-in-pipe, pipe-on-pipe and multiple riser bundle configurations
- Detailed internal fluid and slug flow models, including centrifugal, Coriolis and dynamic pressure effects
- Range of contact modelling options, including contact surfaces and line clashing
- Variety of seastate models including Regular Airy, Stokes V, Dean's Stream, Pierson-Moskowitz, JONSWAP, Ochi-Hubble and Torsethaugen
- Comprehensive coupled analysis capabilities, including first and second order forces, plus frequency dependent added mass and radiation damping
- Wake interference, including Huse and Blevins' formulations, plus a generic user-defined wake model

Flexcom

For more information contact
SoftwareSales@woodgroup.com

www.woodplc.com