CasingSeat™ Software

OVERVIEW
CasingSeat™ software is a graphics-based tool for accurately determining casing setting depth and viable casing and wellbore schemes. Using CasingSeat software in the early phases of the casing-design process can lead to significant savings on the cost of tubulars.

The software features inventory-based management of permissible-hole and casing-size combinations and provides layer- and lithology-based characterizations of subsurface boundary conditions and operating constraints, including those associated with wellbore stability, minimum overbalance, and differential sticking. CasingSeat software provides bottom-up and top-down solution methods, based on minimum setting-depth requirements and maximum permissible drill-ahead depths, respectively, for identifying and ranking casing schemes.

CasingSeat software is deployed on the Engineer’s Data Model™ (EDM™) software platform, which contains a fully integrated suite of well-engineering and data analysis solutions. This enables data to be entered just once and then used throughout the system to promote best practices and an environment for managing and accessing operational knowledge and lessons learned.

BENEFITS

Powerful EDM platform integration
CasingSeat software integrates seamlessly with the drilling and completions applications in Landmark’s EDM suite. This integration reduces data-entry time, errors, and training. CasingSeat software shares common data navigation, enabling final designs to be easily used in subsequent analyses by other Landmark applications, such as COMPASS™, StressCheck™, WELLCAT™, Well Cost, or WELLPLAN™ software systems.

Increase productivity and efficiency
All permissible casing scheme solutions are presented to the user for evaluation and selection. The selected casing scheme can be used as input for further study in the well construction workflow, eliminating redundant data entry, saving time, and helping the operator make better decisions.

Solutions ranked for cost savings
Potential casing schemes are ranked bottoms-up and tops-down, based on the relative cost of total hole-volume drilled and estimated casing weight. Engineers can use the relative rankings to select a cost-effective design.

KEY VALUE
» Accurately determine casing setting depth and viable casing and wellbore schemes
» Casing designs can be ranked by the relative cost of total hole-volume drilled and estimated casing weight to easily identify savings
» Configurable split-screen views bring important information together to make better decisions faster
FEATURES

Design to specifications
CasingSeat software supplies inventory-based management of permissible-hole and casing-size combinations, which are selected using an intuitive graphical interface.

Instant designs
An instant design can be created based on the data input and standard defaults to provide immediate feedback on potential design schemes.

Process archiving
A report of all input parameters and calculations is generated to document the process.

Graphical views
The software provides a variety of graphical views, including pore pressure and fracture gradient profiles, lower- and upper-bound limits imposed by boundary conditions and operating constraints, interval mud-weight indicators, and calculated shoe locations for all casing strings.

Powerful usability features
CasingSeat software features American Petroleum Institute, International System, and custom unit systems, along with a comprehensive online help system. Standard or user-configured report formats are available, along with user-defined preconfigured display tabs. The workspace layout functionality in the design session includes the default system preferred layout or one configured by the user. On-screen results are in user-configurable multi-pane spreadsheets and plot formats.
Solution modes for user evaluation and selection
The software generates solution modes for variations of upper and lower pore pressure and fracture gradient margins, as well as depth shifting of formation layers. All casing scheme solutions are presented for user evaluation and selection.

Pre-configured designs
A template feature enables preconfigured CasingSeat designs to reflect both company design standards and available inventories.

User-friendly data entry
Data is input via spreadsheet format with support for cut/copy/paste and drag/drop operations.

Easily transfer or export data
Links to DEX™ software, Landmark’s data exchange software, to enable easy transfer of relevant data to other DEX-compliant applications.
Casing, liner, and tubing strings are a significant cost and safety component of the well design. Engineers must strike a balance and create a tubular design that will maintain well integrity, but not over design and drive up costs.