StressCheck™ Software

OVERVIEW

Casing, liner, and tubing strings are a significant cost and safety component in all well construction operations. Operators need to be able to determine safe designs that are also cost-effective. StressCheck™ casing-design software takes the trial and error out of designing casing, liner, and tubing strings, and helps minimize the cost of well tubulars.

This comprehensive solution automatically generates the lowest-cost casing design based on user-defined loads. Using interactive graphics-based tools, StressCheck software enables quick, systematic, and accurate evaluation of casing wear limits, minimum-cost design solutions, comprehensive tri-axial design, and working-stress design for burst, collapse, and axial installation and service-life loads. With StressCheck software tools, it’s easy to complete designs using the minimum-cost design algorithm or the “click-and-drag” design element.

StressCheck software is integrated the Engineer’s Data Model™ (EDM™) software, which supports integrated operations reporting, drilling, and completions engineering, and well-planning workflows.

BENEFITS

Higher Productivity and Efficiency
Integration with the EDM software platform helps reduce data-entry time, errors, and training. Information is entered once and then available to other applications in Landmark’s drilling portfolio. For example, StressCheck has bi-directional integration with WELLCAT™ software and shares fluid densities, cementing and landing data, applicable design parameters, and unidirectional limited integration of burst, collapse, and axial loads, single packer and pipe data, and connections.

Low-cost Design
StressCheck software helps lower the cost of casing and tubing design. It automatically determines the lowest cost casing design, based on either standard or user-defined inventories, specific cost, user-defined constraints on valid API and tri-axial design domains, and minimum length of casing and tubing sections. Graphics-based workflows streamline the casing, liner, and tubing string design processes, helping to minimize the cost of well tubulars.

Fast, Accurate Solutions
Determines fast and accurate load, stress, and buckling solutions for vertical and directional wells.

Figure 1: StressCheck™ software provides a graphical design limits plot and safety factors for each string.
FEATURES

**Powerful EDM Platform Integration**
Built on Landmark EDM platform, enabling integrated workflows and features and providing common data navigation with other EDM applications.

**Graphical Designs**
Graphical design tools streamline workflows for casing, liner, and tubing strings design.

**Automated Load Generation**
Running installation and service loads with automated generation of standard or user-defined load cases for drilling and production.

**Compression Ratings & Design Factors**
Determine connection axial compression rating and design factors, and pipe body axial compression design factors separate from the axial tension ratings and design factors. Results provide views to distinguish between axial tension and compression safety factors for both connection and pipe body.

**Connection Test Data Performance**
Import or enter connection test-data performance (load and pressure pairs) into a predefined format for two different connection types. The tri-axial stress of the user-defined connection can then be displayed on the design limit plot. This new technology was the result of ISO (International Standards Organization) 13679 recommended practice for testing purposes involving casing and tubing connections.

**Enhanced Schematics**
Enhanced PROFILE™ software like schematics with tool tips for easy viewing.

**Spreadsheet & Graphical Data Views**
Provides spreadsheet data entry, with support for cut/copy/paste and drag/drop operations. StressCheck software provides a template feature for pre-configuring designs that reflect company design standards and available inventories, as well as user and system workspace-preferred layout functionality selection while in design session. It allows graphical views for well configuration, directional profile, formation pressure, fracture gradient profiles and load, internal pressure, external pressure, differential pressure, axial load, and temperature profiles for each load case. It uses graphic and tabular views to display wellbore and load data.

**Convenient Results Configurations**
Provides a design summary of minimum burst, collapse, axial, and tri-axial safety factors for each string, per load and the full tubular program. Standard or user-configured report formats are available, along with user-defined preconfigured display tabs. On-screen results are in user-configurable, multi-pane spreadsheet and plot formats.

**Easy Data Transfer**
Features the American Petroleum Institute, International System, and custom unit systems, along with a comprehensive online Help system. Includes a link to Landmark’s DEX™ data exchange software, permitting easy transfer of relevant data between other DEX-compliant applications. Designs can be exported as *.sck flat files.

SYSTEM AND SOFTWARE

**Operating System**
- Microsoft® Windows® 10 Enterprise, 64-bit
- Microsoft® Windows® 7 SP1, 64-bit
- Microsoft® Windows® Server 2012 R2, 64-bit
- Microsoft® Windows® Server 2016, 64-bit
- Citrix XenApp 7.12
- Citrix XenApp 7.15
- Oracle 12.2.0.1 Client, 32-bit
- SQL Server Enterprise 2014 (12.0.4100.1), 32-bit ODBC drivers / SQL Server Express 2014, 64-bit

**Software Requirements**
- Engineers Data Model (EDM)
- Oracle® ODBC Driver

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