



NeoFlex Blocks Gas Migration and Occurrence of Sustained Casing Pressure (SCP)

NeoProducts & HPI cement systems have been run in 100,000+ wells over the last 33 years. NeoFlex is one of numerous NeoProducts cement systems. NeoFlex cement kits are Global Benchmarks.

NeoSuperSlurry - NeoFlex Dump Bailer Cement Kits

17 ppg High Shear Bond Expanding Flexible Cement

Service Temperature Range: 70° - 350° F (21° - 177° C)

P/N E0101-350-017-Cefas

NeoFlex is a Flexible Expanding Cement Kit System (FECS)

NeoFlex Dump Bailer Cement Kits are off-the-shelf ready-to-go cement kits that yield high-tech high- ΔP flexible cement plugs.

NeoFlex Kits are available in 5 gallon batches and bulk volume.

FECS' unique physical properties enhance cement elasticity and cement bonding to casing and formations, therein substantially reducing the occurrence of micro-cracking and gas migration.

Features

- FECS abate gas migration and the occurrence of sustained casing pressure,
- Ultra-low permeability prevents gas migration,
- Flexibility that eliminates the occurrence of micro-cracking, and ensures long-term well integrity,
- Flexibility that abates de-bonding between cement and casing and also between cement and wellbore formation,
- FECS expand during curing, expansion substantially increases bond strengths to casing and formations, and
- FECS block hydrocarbon migration and impart lifelong zonal isolation.

NeoFlex Dump Bailer Cement Kits yield plugs that anchor and seal for the lifetime of the well.

Continue to pages 2 & 3 for technical information.



Flexible Expanding Cement Systems (FECS)

FECS abate the occurrence of Sustained Casing Pressure (SCP)

FECS have physical properties that are unique amongst themselves; extremely low permeability, sustained long-term elasticity, high strength flexible shear bonds with casing and earthen formation, high fracture toughness, flexible solid state expansion, low elastic moduli, and unique Poisson's effect.

NeoFlex is an industry leading plug-back cementing system designed to eliminate the occurrence of gas migration and SCP.

Numerous oil companies and service companies have conducted internal studies and large-scale field testing of FECS relative to stopping gas migration via micro cracks, eliminating the occurrence of SCP, and blocking gas migration to the surface.

The list of references below describe applications and attributes of FECS relative to; gas migration, the occurrence of longitudinal micro-cracking, radial micro-cracking in cement sheaths, de-bonding of cement from casing and earthen formations, and sustained casing pressure.

References

FECS Block the Occurrence of Gas Migration and SCP

SPE – 92361

Using a Flexible, Expandable Sealant System to Prevent Micro-annulus Formation in a Gas Well

SPE – 89622

Utilizing Innovative Flexible Sealant Technology in Rigless Plug and Abandonment

CSUG/SPE - 149440

Flexible, Expanding Cement System (FECS) Successfully Provides Zonal Isolation across Marcellus Shale Gas Trends

SPE/IADC – 173065 – MS

A Case Study of Flexible/Expandable and Self-Healing Cement for Ensuring Zonal Isolation in a Shallow, Hydraulically Fractured Gas Well, On-shore Thailand

SPE – 186930 – MS

Flexible Cement Extends Wellbore Life with an Integrated Approach to Zonal Isolation

SPE – 156501

Nano-engineered Oil Well Cmt Improves Flexibility and Increases Compressive Strength: A Laboratory Study

IADC/SPE – 112715

Innovative Hydraulic Isolation Material Preserves Well Integrity

SPE – 131568

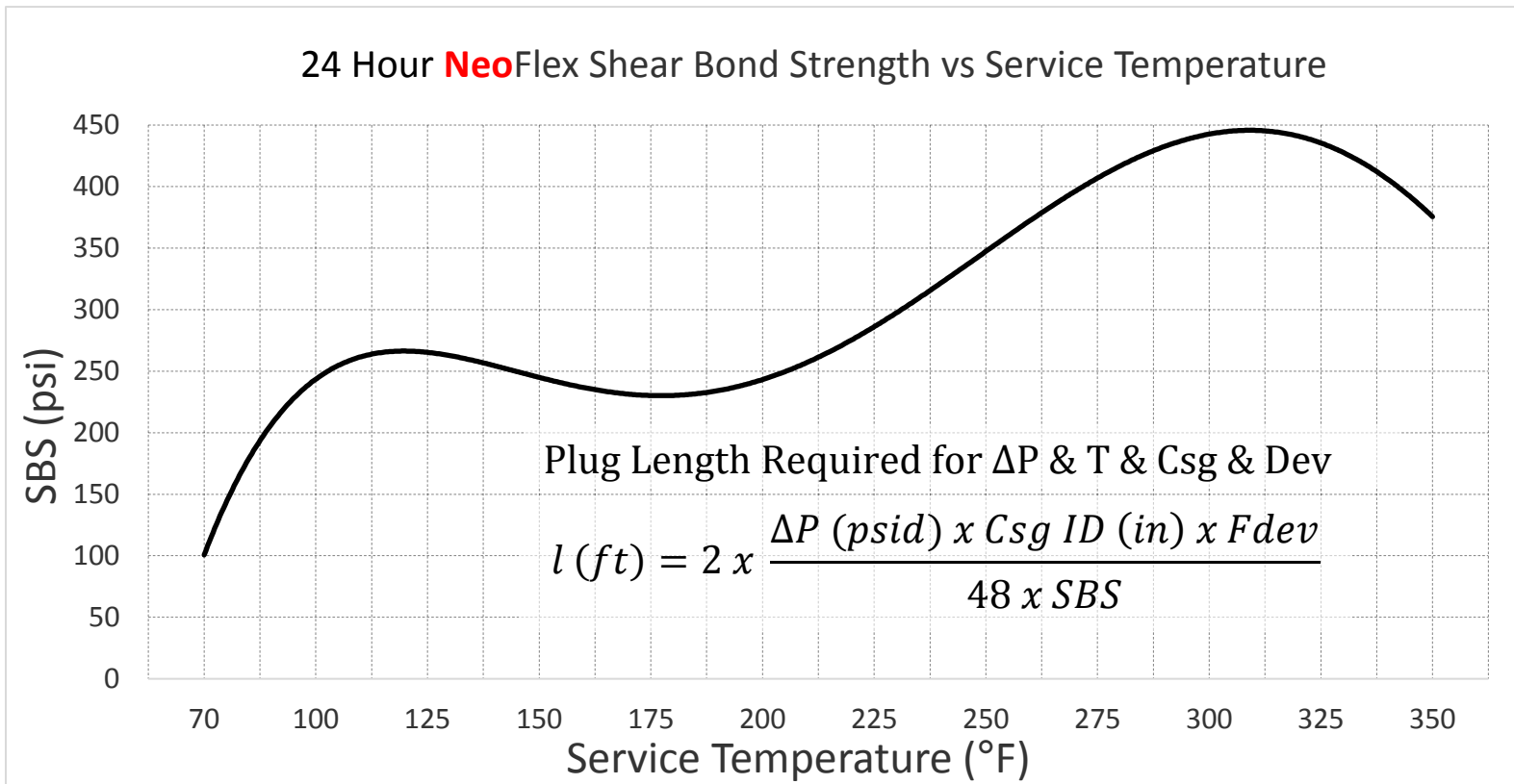
Cementing in HPHT Gas Environment Using a Novel Flexible and Expandable Cement Technology to Withstand Pressure and Temperature Cycles



NeoFlex Plug Length Determination

NeoFlex plugs may be pressure tested 18 – 24 hrs after the last bailer run.

Early high compressive strength reduces rig non-productive “waiting on cement” time.



F dev = 1.0 @ 0° deviation, 1.2 @ 30°, 1.6 @ 60°, 2.0 @ 70°

The double hump SBS curve is related to the complex interactions of transient cement silicate phases and retarder concentrations.

NeoProducts prudently recommends;

read and comply with all the slurry mixing instructions included in the NeoFlex kit on every dump run, locate the bailer bottom to be 1-2ft above the platform upon which the slurry will collect, “never dump less than 10 ft of cement slurry when a long-term high ΔP plug is desired”.