

Flexible Expanding Cement Systems (FECS)



NeoProducts Technical Team has developed cmt kits that have been successfully run in hundreds of thousands of wells over the last 30+ years. Our cmt kits are Global Benchmarks.

Export NeoFlex Dump Bailer Cement Kits
Yields 17 ppg high shear bond expanding flexible cmt slurry
Service Temperature Range: **70° - 350° F (21° - 177° C)**
P/N E0105-350-017F

NeoFlex is a Flexible Expanding Cement System (FECS)

NeoFlex Dump Bailer Cmt Kits are delivered in a single pail that contains a dry powder blend of High Sulfate Resistant (HSR) API Cmt, para-aramid synthetic fibers, and multiple proprietary admixes that impart cmt plug performance unsurpassed by any other dump bailed cement plugs.

NeoFlex Dump Bailer Cmt Kits are off-the-shelf ready-to-go dump bailer cmt kits that contain all the components needed to build a high-tech high-ΔP cmt plug placed via dump bailing operations. Easy to follow mixing instructions on how to make the cmt slurry are contained in each kit. **NeoFlex** Kits are available in 5, 6, and 42 gallon volumes.

Applications

NeoFlex Dump Bailer Cmt Kits are used in wells with potential gas migration, casing pressure, and high pressure / high temperature (HPHT) variations.

Benefits

- Abates occurrence of Sustained Casing Pressure,
- Low permeability prevents gas migration and ensures long-term well integrity,
- Flexibility eliminates occurrence of micro cracking and micro annuli,
- Abates de-bonding between cmt and casing, and
- Expands during curing and continues expanding for years.

Features

- Admixes in the dry powder blend assure; repeatable thixotropic dumping performance, minimal dilution/contamination of the slurry by wellbore fluids, rapid strength development, exceptionally high shear bond with casing and earthen formation, and repeatable/reliable gel, tag and set times at temperatures between 70° - 350° F.
- **NeoFlex** Dump Bailer Cmt Kits continue expanding after the setting process, conform to and resist common downhole HPHT stresses, block hydrocarbon migration, and incorporate enhanced bonding properties for lifelong zonal isolation.
- **NeoFlex** Dump Bailer Cmt Kits contain a QC/QA report listing; cmt grind number, production date, the API neat cmt compressive strengths, 24 hr cmt slurry compressive strengths and the shear bond strength for the **NeoFlex** Dump Bailer Cmt blend in the kit.

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



**NeoFlex Cmt Kits are available in 5, 6, and 42 gallon batches of
Flexible Expanding Cmt System (FECS)**

The Global Oil Industry recognizes FECS as systems that abate the occurrence of **Sustained Casing Pressure (SCP)**.

NeoFlex is a top performing cmt plug-back system. It was developed for CT and dump bailing operations. **NeoFlex** admixes are unique and ideally selected to provide the very best long-term pressure isolation. Its plugging performance is exceptional, however, its cost of admixes render it not economical for primary cementing operations.

FECS reduce the occurrence of;

- Micro annuli cracking between the cmt plug and csg in primary cementing, plugging, and bailing operations.
- Micro annuli cracking between the cmt plug and the earthen formation in primary cementing and plugging operations.
- De-bonding of cmt with csg caused by thermal transients, extreme pressure surges (frac jobs), and high servicestresses.

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

Numerous multi-national service and oil producing companies have published research findings and field operation reports lauding the attributes of FECS and how they thwart the occurrence of gas migration and most importantly abate SCP. The list of references below describe the applications and attributes of FECS, e.g., relative to; gas migration, the occurrence of longitudinal micro cracking, radial micro cracking in cmt sheaths, and de-bonding of cmt from csg and earthen formations.

FECS Mitigate the Occurrence of Gas Migration and Sustained Casing Pressure

CSUG/SPE 149440

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

SPE-186930-MS

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

IADC/SPE 128226

Self-Healing Cmt System – A Step Forward in Reducing Long-Term Environmental Impact

SPE 116757

Responsive Cementing Material Prevents Annular Leaks in Gas Wells

SPE/IADC 105781

Self-Healing Cmt – Novel Technology to Achieve Leak-Free Wells

SPE 156501

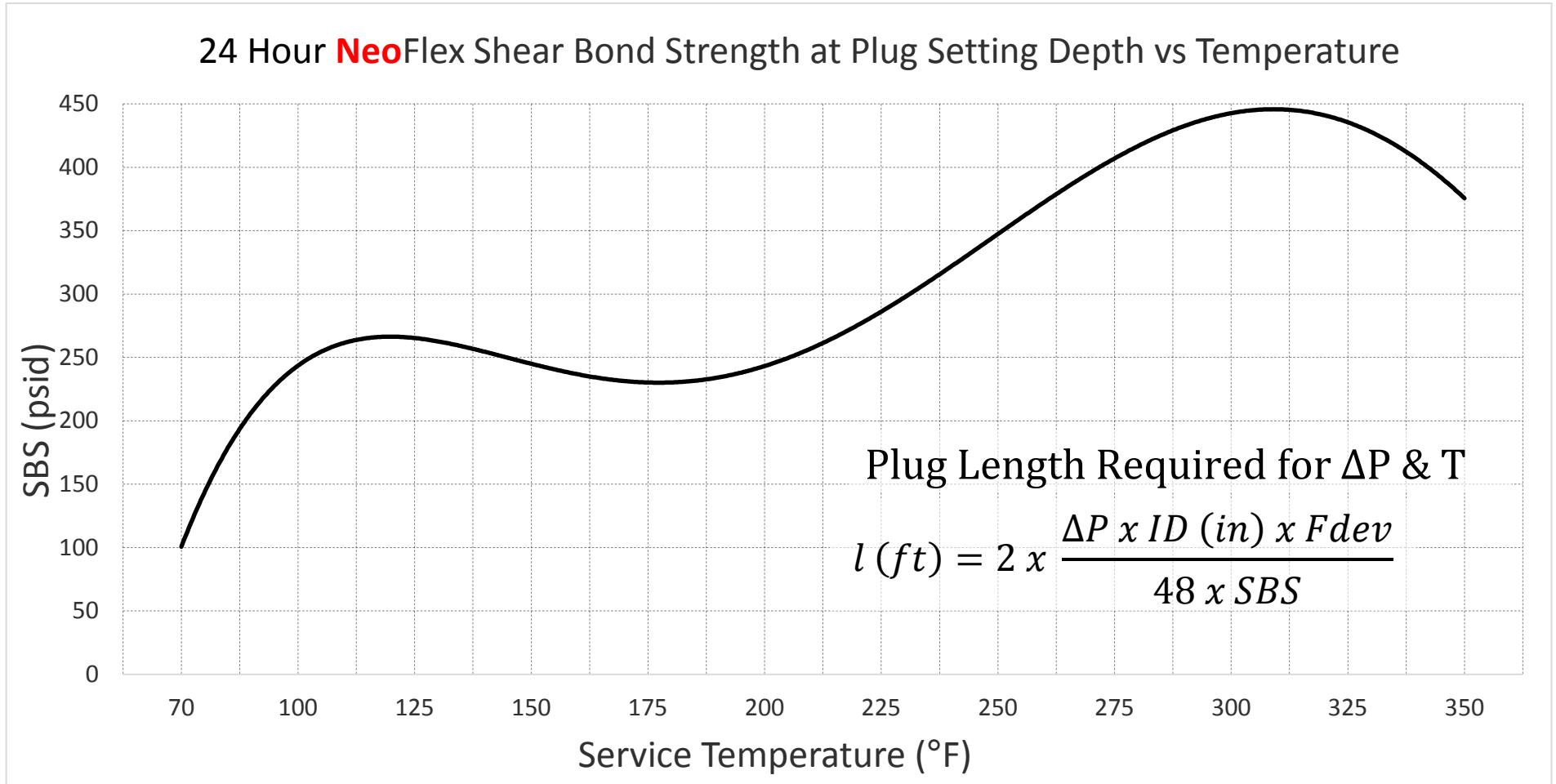
Nano-engineered Oil Well Cmt Improves Flexibility and Increases Compressive Strength: A Laboratory Study

IADC/SPE 112715

Innovative Hydraulic Isolation Material Preserves Well Integrity

Nonexplosive Oilfield Products

Global Sales & Service



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

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

NeoProducts prudently recommends “never dump less than 10 ft of cmt slurry when a long-term high ΔP plug is desired”.