



STEEL CEMENT INTERFACIAL NANOBOND

SCIN is a nanocomposite surface treatment for enhancing the interfacial bond between steel and cement. Poor bonding can result in dangerous well blowouts with catastrophic accidents. In addition, monitoring of the steel-cement bond is dependent upon acoustic measurements and accuracy of Cement Bond Logs (CBL). SCIN creates a permanent, extremely hydrophilic surface which improves CBL accuracy and can prevent unnecessary cement remediation operations. By increasing the wettability of the exterior of oil well casing, SCIN acts as chemically active surface that binds to Portland cement. SCIN vastly improves the acoustic steel-cement coupling, enabling far more accurate acoustic bond integrity measurements.

SCIN Benefits:

- SCIN creates a permanent, super-hydrophilic surface
- Doubles the wettability of surface vs. untreated steel
- Increases the interfacial bond strength between steel and cement by >30%
- Provides >10% more corrosion resistance to the steel substrate
- Highly scalable treatment process for steel tubulars, valves and components
- No changes required to normal pipe handling equipment or procedures
- Significant improvement in acoustic coupling and CBL results
- Can save operators >\$5Mil per well on unnecessary squeeze jobs

Additional Applications:

- Improved cementing of water mains and sewage pipes
- Improved coverage of water-based paints on metal structures and substrates
- Improved wettability in evaporative coolers

SCIN Application

Working with Shell, Oceanit has successfully scaled and field tested SCIN in both unconventional and deepwater environments. Production was scaled rapidly within existing Shell facilities and in under 15 months was able to support successful trials in the Marcellus play in Appalachia and the Gulf of Mexico. SCIN has been applied to over 7000 ft. of pipe ranging from 5-inch to 16-inch diameters. Post-job cement evaluation logs by a variety of techniques show a consistent improvement in acoustic coupling between the steel well casing and Portland cement.