



# IntegraCem™ Foam

VERSATILE CEMENTING SOLUTION FOR LOW-FRACTURE GRADIENT WELLS

## APPLICATIONS

- Primary cementing operations
- Remedial lost circulation operations
- Low and ultra-low slurry densities
- High-permeable, unconsolidated and fractured formations
- Low-fracture gradient wells

## FEATURES & BENEFITS

- Cures or reduces lost circulation
- Higher compressive strengths than conventional lightweight blends
- More cost effective than slurries produced with glass microspheres
- Effective mud removal and displacement efficiencies
- Reduced fluid filtrate losses and potential damage of the formation
- Improved control of gas influx into the wellbore
- Improved thermal insulation

## OVERVIEW

IntegraCem Foam is a lightweight or ultra-lightweight cement slurry system typically used when conventional slurries may cause loss of circulation. The formations may be low-fracture gradient, naturally-fractured, highly-permeable or vuggy.

Foamed slurries are produced by injecting nitrogen and a foaming agent into the cement slurry as it is being pumped downhole. The system will also contain a foam stabilizer.

IntegraCem Foam systems used for ultra-low density slurries are generally more cost effective than those produced with glass microsphere and cement blends.

To ensure wellbore integrity and an impermeable barrier, a foam quality (nitrogen volume percent) of 35% or less is used. In this range, the compressive strength of the foamed cement approaches the compressive strength of the base cement.

Because of the dynamic internal pressure of the system, IntegraCem Foam can also be used to control the influx of formation gas into the wellbore. The two-phase nature and viscosity profile of IntegraCem Foam will impede fluid loss to the formation and aid mud displacement. This foamed slurry also has superior thermal insulation properties, making them well-suited for special applications including those encountered in Arctic regions.

## TYPICAL PROPERTIES

TYPICAL DENSITY RANGE	8 to 15 ppg
TYPICAL NITROGEN INJECTION RATES	200 to 15,000 scf/min