

Cryogenic Freeze Services

Facilitates repair or removal of defective downhole components with formation of ice plugs

The Boots & Coot's Cryogenic Freeze service provides a temporary ice plug to maintain pressure control while facilitating the repair or removal of defective surface components. Our specialized cryogenic freeze process uses copper tubing and nitrogen for the controlled freezing of lubricators, tubing, casing, and gate valves.

Designed for both onshore and offshore applications, the cryogenic freeze service is a proven, ideal option for the most complex of applications, where pressure isolation is critical and other methods of doing so are unavailable or unadvisable. The process, which has a rated working temperature of -109°F (-78°C), is performed with minimal personnel and materials.

Preplanning for the job includes evaluation, procedure, equipment, and safety measures, and is reviewed with the client prior to the application. Boots & Coots is one of the few providers of this service and has the most experienced personnel, dating back to the early days of pressure control.

In operation, the process uses copper tubing and nitrogen in a controlled manner, thus regulating and monitoring the flow of nitrogen and allowing the user to safely form an ice plug. It requires that no gas be within the inside diameter of the tubular in which the ice plug is set. The temperature is measured digitally throughout the operation to help ensure the freeze is maintained throughout the application.

Features and Benefits

- Proprietary freezing process
- Requires minimal personnel and equipment
- Eliminates killing the well with expensive kill fluids
- Available with various sizes of copper tubing
- Equipped with Fluke®* digital thermometers

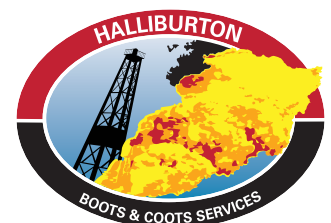
* Fluke is a registered trademark of Fluke Corporation.



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Cryogenic Freeze Specifications	
Description	Cryogenic freeze box
Working Temperature	-80°F to -109°F / -62°C to -78°C
Wrapping Material	1/4-in. to 3/4-in. (6 mm to 19 mm) copper tubing
Freezing Material	Nitrogen
Monitoring System	Fluke® digital thermometers

**For more information, contact your local Boots & Coots representative
or email us at boots-coots@halliburton.com.**

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