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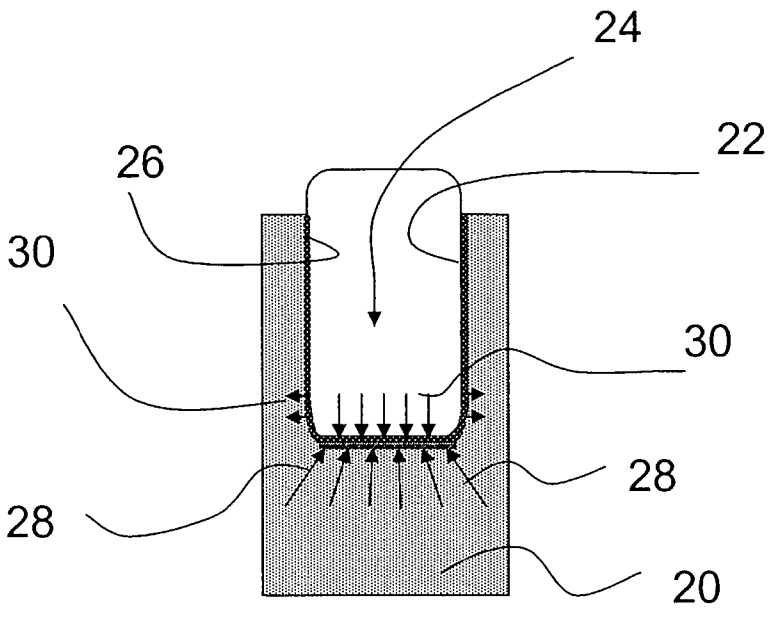
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(54) **Title:** METHOD FOR ESTIMATING CONFINED COMPRESSIVE STRENGTH FOR ROCK FORMATIONS UTILIZING SKEMPTON THEORY



(57) **Abstract:** A method for estimating the CCS for a rock in the depth of cut zone of a subterranean formation which is to be drilled using a drilling fluid is disclosed. An UCS is determined for a rock in the depth of cut zone. A change in the strength of the rock due to applied stresses imposed on the rock during drilling id calculated which includes estimating the ΔPP. The CCS for the rock in the depth of cut zone is calculated by adding the estimated change in strength to the UCS. The present invention calculates the ΔPP in accordance with Skempton theory where impermeable rock or soil has a change in pore volume due to applied loads or stresses while fluid flow into and out of the rock or soil is substantially non-existent. CCS may be calculated for deviated wellbores and to account for factors such as wellbore profile, stress raisers, bore diameter, and mud weight utilizing correction factors derived using computer modeling and using a baseline formula for determining an uncorrected value for CCS.

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