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(54) Title: **ENHANCED WELLBORE ELECTRICAL CABLES**

(57) Abstract: Wellbore electrical cables according to the invention include at least one insulated conductor, at least one layer of armor wires surrounding the insulated conductor, and a polymeric material disposed in the interstitial spaces formed between armor wires and interstitial spaces formed between the armor wire layer and insulated conductor which may further include wear resistance particles or even short fibers, and the polymeric material may further form a polymeric jacket around an outer, layer of armor wires. The insulated conductor is formed from a plurality of metallic conductors encased in an insulated jacket. The invention also discloses a method of preparing a cable by extruding first layer of polymeric material upon at least one insulated conductor; serving a first layer of armor wires upon the polymeric material; softening the polymeric material to partially embed armor wires; extruding a second layer of polymeric material over the armor wires; serving a second layer outer armor wires thereupon; softening the polymeric material to partially embed the second armor wire layer; and optionally extruding a third layer of polymeric material over the outer armor wires embedded in the second layer of polymeric material. Further disclosed are methods of using the cables of the invention in seismic and wellbore operations, including logging operations.

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