Abstract: An improved method for imparting excellent long-term dielectric performance to an in-service electrical cable section having a stranded conductor surrounded by a conductor shield encased in a polymeric insulation and having an interstitial void volume in the region of the conductor, the cable section having an average operating temperature T. The method comprising injecting a dielectric enhancement fluid composition into the interstitial void volume, the composition comprising at least one component selected from: (1) a water-reactive material selected from an organosilane monomer, the above organosilane monomer wherein at least one of the water-reactive groups has been substituted with a condensable silanol group, an oligomer oligomer of the above organosilane monomer, or a co-oligomer of the above organosilane monomer, the organosilane monomer having a diffusion coefficient at least about 15 times greater than the diffusion coefficient of its corresponding tetramer; (2) a water-reactive material similar to (1) having at least one group attached to silicon comprising 7 to about 20 -CH₂- units; (3) a non-water-reactive organic material which has a diffusion coefficient of less than about 10⁻¹⁵ cm²/sec and an equilibrium concentration of at least about 0.005 g/cm³ in the polymeric insulation, the above mentioned diffusion coefficients and equilibrium concentration being determined at temperature T; or (4) an organic compound having an equilibrium concentration in the polymeric insulation at 55°C which is less than 2.25 times the equilibrium concentration at 22°C.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC: H01B 7/02 (2006.01), 7/17 (2006.01), 7/28 (2006.01)

USPC: 174/110R
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 174/110R

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST (antifreezing, treat electrical cables)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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Further documents are listed in the continuation of Box C.

See patent family annex.

Date of the actual completion of the international search
10 June 2008 (10.06.2008)

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