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(54) Methods of protecting bare overhead conductors.

(57) A method of protecting a bare overhead conductor wherein a grease composition containing a plastics agent cross-linkable under the influence of ultra-violet radiation is applied to the conductor during its fabrication. The conductor when secured in place overhead is exposed to the ultra-violet radiation present in sunlight which causes cross-linking of the plastics agent present at the surface of the grease composition exposed to the sunlight, and thereby hardening of the grease composition at this surface. Such hardening prevents denudation of the conductor of the grease composition.

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METHODS OF PROTECTING BARE OVERHEAD CONDUCTORS

This invention relates to methods of protecting bare overhead conductors.

Bare composite overhead conductors for the transmission of high voltage electricity are treated with grease to prevent the ingress of moisture and thereby to avoid corrosion of the conductor. The grease is applied during fabrication of the conductor, and, as well as being present around the conductor, is present between the individual wires which form the composite conductor.

It is known for the grease to exude from the conductor and to form a large suspended "drip", which can give rise to electrical malfunctions of the conductor and which in any event denudes the conductor of its protection.

It is an object of the present invention to provide a method of protecting bare overhead conductors wherein this problem is overcome.

According to the present invention there is provided a method of protecting a bare overhead conductor characterised by: applying a grease composition containing a cross-linkable plastics agent to said conductor; and subjecting said conductor, with said composition applied, to a cross-linking influence to cause said plastics agent to cross-link to harden said composition, thereby to prevent denudation of said conductor of said composition.

A method in accordance with the present invention will now be described by way of example.

The method comprises applying to a bare composite overhead conductor during its fabrication a grease composition such that the grease composition surrounds the conductor and is present between the individual wires which form the composite conductor. The grease composition comprises a mixture of a grease commonly used in the United Kingdom to protect bare overhead conductors and sold in the United Kingdom under the brand name Castrol Rustilo 431 and the polyurethane acrylate sold in the United Kingdom by Lankro Chemicals Limited under the brand name Photomer 6162. In the grease composition the Castrol Rustilo 431 and the Photomer 6162 are in the proportion by weight approximately 20/1 respectively.

The conductor is then secured in place overhead where the ultra-violet radiation present in the sunlight to which the conductor is exposed causes cross-linking of the Photomer 431 present at the surface of the grease composition exposed to the sunlight, and thereby hardening of the grease composition at this surface. The Photomer 431 thus comprises a cross-linking plastics agent in the method. Such hardening prevents denudation of the conductor of the grease composition, in particular it prevents the formation of the aforementioned 'drip'. Further, if any cracking of the hardened surface occurs, for example, arising from movement of the conductor due to wind, such cracking is soon healed since any egression of the grease composition which has formerly not hardened from the inner region of the conductor through the cracking will itself harden on exposure to the sunlight.

It is to be appreciated that cross-linkable plastics agents other than Photomer 431 may be used. For example, cross-linkable plastics agents comprising any other polyurethane acrylate, or any polyester acrylate or either of the following two acrylic monomers tetrahydrofurylacrylate and trimethylopropanetrimethacrylate may be used. Further, the cross-linkable plastics agent used may be cross-linkable under a cross-linking influence other than ultra-violet radiation, and the cross-linking influence may be applied during fabrication of the conductor. The grease of the grease composition need not comprise Castrol Rustilo 431. An example of another suitable grease is a grease sold in the United Kingdom under the brand name Cableguard HS. This grease is also a standard bare overhead conductor protective grease.

It is also to be appreciated that the invention is applicable to single wire bare overhead conductors as well as composite bare overhead conductors comprising a plurality of single wires.

Claims

1. A method of protecting a bare overhead conductor characterised by: applying a grease composition containing a cross-linkable plastics agent to said conductor; and subjecting said conductor, with said composition applied, to a cross-linking influence to cause said plastics agent to cross-link to harden said composition, thereby to prevent denudation of said conductor of said composition.

2. A method according to Claim 1 wherein said cross-linking influence causes cross-linking of said plastics agent only at the surface of the grease composition exposed to said cross-linking influence, thereby causing hardening of the grease composition only at this surface.

3. A method according to Claim 2 wherein said cross-linking influence comprises ultra-violet radiation.

4. A method according to Claim 3 wherein said ultra-violet radiation is that present in the sunlight to which said conductor, with said composition

applied, is exposed whilst secured overhead.

5. A method according to Claim 3 wherein said conductor, with said composition applied, is subjected to said ultra-violet radiation during fabrication of said conductor.

6. A method according to Claim 4 or Claim 5 wherein said grease composition comprises a mixture of a standard bare overhead conductor protective grease and a cross-linkable plastics agent comprising one of the following: a polyurethane acrylate, a polyester acrylate, tetrahydrofurylacrylate, and trimethylopropanetrimethacrylate, in said grease composition said standard protective grease and said cross-linkable plastics agent being in the proportion by weight substantially 20/1 respectively.

7. A bare overhead conductor protected by a method according to any one of the preceding claims.

8. A grease composition for use in protecting a bare overhead conductor containing a cross-linkabale plastics agent capable of undergoing cross-linking under a cross-linking influence so as to harden said grease composition.

9. A conductor having had applied to it a grease composition lied to according to Claim 8.