

**A.10.6 Tenue à long terme de lubrifiants****Silicones utilisés dans des interfaces de connecteurs électriques débrochables.**

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A.10.6 Long-term performance of silicone**lubricants used for separable interface electrical connectors**

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ABSTRACT

Silicone lubricants have been the traditional material of choice used to assure long-term separability of molded rubber cable accessories, such as loadbreak elbows. In the experience of many utilities, these and other molded rubber accessories often fail to separate after a number of years in service, even with such lubricants properly installed. As a result, excessive force may be required to separate these devices from their bushings, leading to mechanical damage to the device and/or personal injury. This paper summarizes the results of a four-year study in which silicone lubricated, field-aged cable accessories were recovered and analyzed. Results of this work formed the basis for subsequent studies concerned with characterization of silicone greases and analysis of their behavior in cable

accessories. Investigation of elbows suffering from adhesion failures clearly demonstrated that these resulted from "dried" greases. This type of failure is caused by physical separation of the grease components with the oil phase migrating through a process described in this paper. Commercially available greases vary widely in their physical and chemical properties. These variations significantly influence subsequent performance in cable accessories. The important properties have been identified and simple tests have been developed to screen potential lubricants.

The results of this research are being used to guide the development of improved silicone greases for cable accessory applications.