

Medium Voltage Cable Accessories

A Theoretical & Practical Appraisal

Dr. Derek Goulsbra
CEng. MIET

The Nexans logo features a stylized orange wave symbol to the left of the word "Nexans" in a white, sans-serif font.

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Foreword

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This book is a follow up to an earlier edition entitled "Some thoughts on MV cable accessories". Greater emphasis is placed on modes of failure and ways to overcome potential problems encountered in the field. It is the aim of the book to provide as much information as possible to engineers and jointers who are responsible for specifying and installing these products. It is hoped that by following the information presented, the reliability of accessories will be improved thus saving considerably on the cost of failures due to loss of supply, labour and equipment replacement.

Cable accessories account for the least capital expenditure in the distribution network when compared with switchgear, transformers and cables, but can prove to be the weakest part of it because they have to be assembled on site. This book will describe in detail the workings of accessories and show why common faults can occur and the steps to be taken to prevent problems.

Some of the mathematics and associated assumptions relating to voltage distribution in this work are simplified and two-dimensional. In reality we are looking at complex three-dimensional models, but it is felt that it is unnecessary to proceed down this path in order to explain in broad terms how certain phenomena occur. The author makes no apology for this, but begs the reader understands the purpose of the work.

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This book is a detailed look at medium voltage cable accessories which will be of value to jointers and engineers alike. In order to understand the workings and failure modes of the accessories, a section on electrical breakdown of air and solids and a combination of the two is presented.

This is followed by a practical consideration of cable preparation using present day techniques and tools prior to installing the accessory.

Terminations, separable connectors, joints and associated components are examined in detail with explanations of the various technologies employed.

Finally, examples of failures are presented with explanations of how these could have been avoided.



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