# A GUIDE FOR THE ELECTRIC TESTING OF TELEGRAPH CABLES

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A Guide for the Electric Testing of Telegraph Cables by V. Hoskiær



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V. HOSKIÆR

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OF

# TELEGRAPH CABLES.

BY

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1873.

# PREFACE.

HAVING had the control of the manufacture of about 3500 nautical miles of Telegraph Cables, made mostly with Hooper's Core, but also with Core of ordinary Gutta-percha and of Willoughby Smith's Gutta-percha, I have had frequent opportunities of ascertaining the correctness of the data named in this book.

I do not expect an Electrician will discover anything new in these pages, but if he should find this Guide a useful one to put in the hands of young men, who have to learn practical testing, I shall feel satisfied in having published it.

V. H.

LONDON, *August*, 1873.

# CONTENTS.

D.—THE INSULATION OF A JOINT.



E.—THE SITUATION AND GREATNESS OF A FAULT.



TESTING AT LAYING OF A CABLE.



FORMULÆ.



TABLES.

# ELECTRIC TESTING OF TELEGRAPH CABLES.

## 1. ELECTRIC TESTS.

THE electric Testing employed during the fabrication of Cables (or Cores) ascertains the following points:

A. The Conductivity of the Copper.
B. The Charge of the Cable.
C. The Insulation of the Cable.
D. The Insulation of a Joint.
E. The Situation and Greatness of a Fault.

## 2. COMMON DEGREE OF HEAT.

As the heat has an essential influence on the electric condition of a Cable by diminishing the conductivity of the Copper and the insulation of the Cable, all the results obtained by the tests ought to be transferred by calculation to the same degree of heat. For this purpose a common degree of 75° Fahrenheit (c. 24° Celsius) has been chosen.

## 3. IMMERSING UNDER WATER.

As the air is a less good electric conductor than water, and as the greatness of the charge depends on how the electricity in the Copper influences the water outside the insulation, the Cable has during the determination of its charge and its insulation always to remain immersed *under*