IEC 61394

Edition 1.0 2011-10

INTERNATIONAL STANDARD

colour inside

Overhead lines – Requirements for greases for aluminium, aluminium alloy and steel bare conductors

INTERNATIONAL ELECTROTECHNICAL COMMISSION

PRICE CODE R

ICS 29.060.20; 29.240.20

ISBN 978-2-88912-706-1

® Registered trademark of the International Electrotechnical Commission

CONTENTS

FOREWORD 3
1 Scope 5
2 Normative references 5
3 Designation system 5
4 Requirements for grease 6
5 Tests 6
5.1 Classification of tests 6
5.1.1 Type tests 6
5.1.2 Sample tests 6
5.2 Preconditioning of samples 6
5.2.1 Type *A* products 6
5.2.2 Type *B* products 6
5.2.3 Products taken from a conductor 6
5.3 Drop point 7
5.4 High temperature stability (Type *A* products only) 7
5.5 Penetrability test 7
5.6 Low-temperature adherence 7
5.7 Acidity/alkalinity (type *B* grease only) 7
5.8 Ageing 8
5.8.1 Preconditioning 8
5.9 Corrosion tests 8
5.10 Stability of grease on conductor at high temperature 8
5.11 Stability of grease on conductor under short-circuit 9
Annex A (normative) Acidity or alkalinity test method for type *B* grease 11
Annex B (normative) Sample preparation and test procedure for ageing test 13
Annex C (normative) Stability of grease on conductor at high temperature 16
Annex D (normative) Stability of grease complete conductor under short-circuit 17
Bibliography 18

Figure 1 – Corrosion coupons 10
Figure B.1 – Coupon for type *A* grease 13
Figure B.2 – Coupon for type *B* grease 14

Table 1 – Classification of tests 6
Table A.1 – Acidity or alkalinity index formula 12

INTERNATIONAL ELECTROTECHNICAL COMMISSION

OVERHEAD LINES – REQUIREMENTS FOR GREASES FOR ALUMINIUM, ALUMINIUM ALLOY AND STEEL BARE CONDUCTORS

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61394 has been prepared by IEC technical committee 7: Overhead electrical conductors.

This first edition of IEC 61394 cancels and replaces the first edition of technical specification IEC/TS 61394 published in 1997. It constitutes a technical revision and now has the status of an International Standard.

The text of this standard is based on the following documents:

FDIS	Report on voting
7/609/FDIS	7/613/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

A bilingual version of this publication may be issued at a later date.

The contents of the corrigendum of August 2012 have been included in this copy.

OVERHEAD LINES – REQUIREMENTS FOR GREASES FOR ALUMINIUM, ALUMINIUM ALLOY AND STEEL BARE CONDUCTORS

1 Scope

This International Standard specifies the requirements and tests of greases designed for corrosion protection of bare overhead conductors.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60068-2-11:1981, *Basic environmental testing procedures – Part 2-11: Tests – Test Ka: Salt mist*

ISO 2137:2007, *Petroleum products and lubricants – Determination of cone penetration of lubricating greases and petrolatum*

ISO 2176:1995, *Petroleum products – Lubricating grease – Determination of dropping point*