# INTERNATIONAL STANDARD

## IEC 62004

First edition 2007-02

Thermal-resistant aluminium alloy wire for overhead line conductor

### © IEC 2007 — Copyright - all rights reserved

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch



PRICE CODE

Ν

### **CONTENTS**

FO	REWC	DRD	3
1	Scop	e	5
2	Norm	ative references	5
3	Term	s and definitions	5
4	Designation		
5	Values for thermal-resistant aluminium alloy wire		
6	Requirement		
	6.1	Material	6
	6.2	Material	6
	6.3	Diameter and tolerance on diameter  Tensile stress	6
	6.4	Tensile stress	7
	6.5	Elongation	7
	6.6	Electrical resistivity	8
	6.7	Elongation  Electrical resistivity  Thermal- resistant property  Length and tolerance on length	8
	6.8	Length and tolerance on length	8
	6.9	Joints	8
	6.10 6.11	Sampling	8
7			a
'	7.1	Place of testing  Classification of tests  Test method	٥
	7.2	Classification of tests	9
	7.3	Test method	10
8	Acce	ptance and rejection	11
Anı	nex A	(informative) Thermal-resistant property	12
Bib	liogra	phy	14
2.0	og.u		
Fig	ure A.	1 - Armenius plot (residual stress 90 %)	12
Tak	ole 1 –	· Values for thermal-resistant aluminium alloy wire	6
		Diameter and tolerance on diameter	
		· Tensile stress and elongation of wires (before stranding)	
		· Electrical resistivity	
		Duration and temperature of heating to affirm thermal- resistant property	
ıal	л <del>с</del>	· Duration and temperature of heating to annul mennal- resistant property	

### INTERNATIONAL ELECTROTECHNICAL COMMISSION

# THERMAL-RESISTANT ALUMINIUM ALLOY WIRE FOR OVERHEAD LINE CONDUCTOR

#### **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, IES 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 provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Rublication.
- 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 62004 has been prepared by IEC technical committee 7: Overhead electrical conductors.

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

FDIS	Report on voting
7/569/FDIS	7/571/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.

**-4-**

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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.

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



## THERMAL-RESISTANT ALUMINIUM ALLOY WIRE FOR OVERHEAD LINE CONDUCTOR

#### 1 Scope

This International Standard is applicable to thermal-resistant aluminium alloy wires before stranding for manufacture of stranded conductors for overhead lines. It specifies the mechanical, electrical and thermal resistant properties of wires in the diameter range commercially available.

#### 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 60468:1974, Method of measurement of resistivity of metallic materials

IEC 60104:1987, Aluminium-magnesium silicom allow wire for overhead line conductors

IEC 60889:1987, Hard-drawn aluminium wire for overhead line conductors

